University of Southern Queensland

School of Engineering

Engineering Information Product Delivery with Critical Success Factors for Maximum Value: An Integrative Literature Review

A dissertation submitted by

Gavin Kromhout

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Abstract

Background Organisations that successfully deliver information product attuned to usage needs see significant competitive advantage, higher performance, and make for a more prosperous society, than organisations that fail to do so. Professional engineers and engineering management, in particular, find critical application of digital information in serving society with safe, effective, and efficient services. However, delivery efforts face ongoing challenges, and the current paradigm has room for improvement. The current research asks: how might information product delivery be engineered for success, to provide maximum value, safely, sustainably, on-time, and within budget?

Methods Integrative literature review is used to synthesise a conceptual framework in answer to the research question. The review is systematically performed, and reported according to the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA 2020) checklist and guidelines. Bibliographic Coupling is used, to mitigate bias, and to efficiently select 28 highly relevant papers, after applying quality criteria, from a corpus of over 50,000 papers. In addition, semi-automated content analysis is developed to analyse an extensive set of critical success factor information. A total of 65 references are reviewed and cited, and a high level of academic rigour is demonstrated.

Results This dissertation integrates four concepts that are supported by an extensive body of prior research: i) Updated DeLone and McLean IS Success Model; ii) Critical Success Factors (CSFs); iii) Information Product; and iv) Value. The result is a Conceptual Framework that consists of: 1) Information Product Success Model - understand and measure success; 2) Information Product CSF Checklist - manage to the context; and 3) Information Product CSF Review - a detailed review for researcher and practitioner use.

Discussion The synthesised conceptual framework contributed by this research provides a holistic management paradigm. This model of understanding integrates a proven information system success model with widely researched Enterprise Resource Planning (ERP) critical success factors, concepts that have the ability to optimise information product for maximum value. Limitations are inherent to the quality and strength of the empirical evidence in the underlying extant research; the current research endeavours to be transparent in its review. Furthermore, the current research explicitly takes, and thereby provides, a point of view perspective. Limitations and biases are introduced by the single researcher. Some biases are mitigated by academic rigour, systematic reporting, and the use of Bibliographic Coupling to automatically select papers for review, and as a source of critical success factor information.

Conclusions In answer to the research question, a conceptual framework and path are synthesised that have the propensity to engineer information product delivery for maximum value, and it is anticipated, a high likelihood of success - based on the available evidence - in multiple contexts, thereby improving organisational, and societal outcomes. The research objectives have been completed as follows. 1) The boundaries and timeline view of information product delivery have been developed through a process of integrative literature review. 2) Value has been defined in the context of information product delivery, and this definition forms part of the value equations of the Information Product Success Model. 3) Critical Success Factors for information product delivery have been determined through an extensive review of relevant literature and content analysis. This research finds broad literature support for 49 critical success factors relevant to delivering information product. 4) A conceptual framework has been developed through integrative literature review and narrative synthesis. The conceptual framework is intended to improve researcher and practitioner understanding in identifying, and applying, critical success factors in their specific context. This framework enables researchers to contextualise further empirical research, and provides managers and teams a model to set up delivery efforts for the greatest likelihood of achieving success in terms of maximum value. Safety and sustainability were not able to be adequately investigated through the body of literature reviewed, and urgently require further research attention.

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Gavin Kromhout

Student Number: [redacted]

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Table of Contents

Page

Abstract **i**

Acknowledgments **vii**

Table of Contents **ix**

List of Figures **xiii**

List of Tables **xv**

List of Listings **xvii**

Chapter 1 Introduction **1**

1.1 Background 1

1.2 Challenges 4

1.3 Research Question 7

1.4 Research Aims 7

1.5 Research Objectives 8

1.6 Chapter Summary 9

Chapter 2 Literature Review **11**

2.1 Critical Success Factors as a Management Paradigm 11

2.2 Review of Value 15

2.3 Review of Engineering Applications 16

2.4 Review of Delivery 18

2.5 Review of Critical Success Factors 20

2.6 Review of Methodology 40

Chapter 3 Methodology **47**

3.1 Literature Review as a Research Methodology 47

3.2 Academic Rigour 48

3.3 Approach 49

3.4 Quality Criteria 51

3.5 Search Log & Bibliography Data 52

3.6 Bibliographic Coupling 57

3.7 Content Analysis 63

Chapter 4 Results **67**

4.1 Conceptual Framework 67

4.2 Information Product Success Model 67

4.3 Information Product CSF Checklist 70

4.4 Discussion of Results 78

Chapter 5 Conclusions and Further Work **83**

5.1 Conclusions 83

5.2 Further Work 85

5.3 Limitations 85

5.4 Support 86

5.5 Competing Interests 87

References **89**

Appendix A Project Specification & Work Plan **95**

Appendix B Risk Assessment **103**

Appendix C Ethical Clearance **107**

Appendix D PRISMA 2020 Checklist **109**

Appendix E Search Log Data **117**

Appendix F Coded Bibliography Data **123**

Appendix G Bibliography Helper Script **155**

Appendix H LaTeX Helper Script **177**

Appendix I Content Analysis Script **185**

Appendix J BibTool Configuration **519**

Appendix K Run Script **525**

Appendix L Information Product CSF Review **531**

List of Figures

1.1 A New Concept of a Product: Tangible Goods, Services, and Information (Freiden et al. 1998, p. 211) 4

2.1 Original DeLone and McLean IS Success Model (DeLone & McLean 1992, p. 87) 24

2.2 Updated DeLone and McLean IS Success Model (DeLone & McLean 2003, p. 24) - Redrawn 24

2.3 Antecedent Causal Research Model (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1257) 26

2.4 Antecedent Causal Research Results - Only Significant Paths Shown (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1259) 26

2.5 Pareto Chart of Failure Factors - Retail India (Garg, P & Garg, A 2013, p. 508) 31

2.6 Multiple Regression Model Showing β Coefficients - A Fortis Hospital - All Relationships Significant (Garg, P & Garg, A 2014, p. 417) 32

2.7 Cause-Effect Diagram - Retail India (Garg, P & Garg, A 2014, p. 430) . . 33

2.8 Tree Structure of Factors - Retail India (Garg, P & Chauhan 2015, p. 1317) 34

2.9 SCM IS Success Model (Seth, Goyal & Kiran 2015, p. 255) 38

2.10 SCM IS Success Model with Result of Regression - Showing β Coefficients - **Only Significant Relationships Shown (Seth, Goyal & Kiran 2015, p. 257) 39

3.1 Research Method Overview Flowchart, adapted from PRISMA 2020 flow diagram Page et al. (2021a) 48

3.2 Bibliographically Coupled Graph of Papers using the Mahmood, AZ Khan and Bokhari (2020) paper, aka 'Mahmood, 2019' as the Origin Paper . . . 57

3.3 Content Analysis Process - Semi-Automated 64

4.1 Information Product Success Model 68

4.2 Updated DeLone and McLean IS Success Model (DeLone & McLean 2003, p. 24) - Redrawn 68

A.1 Research Project Specification Timeline 99

List of Tables

2.1 Production of Physical Product versus Information Product, adapted from Wang (1998) 21

2.2 Critical Success Factors That Are Also Failure Factors 28

2.3 Forms of Synthesis Used, adapted from Budgen et al. (2018) 44

2.4 Approaches to Literature Reviews (Snyder 2019) - Abridged 44

3.1 Literature Review Approach, adapted from Snyder (2019) 50

3.2 Quality Criteria for Research Data and Evidence 51

3.3 Full Search Log 54

3.4 Summary of Bibliographically Coupled Papers using the Mahmood, AZ Khan and Bokhari (2020) paper as the Origin Paper with Quality Criteria Applied 60

3.5 Journals Included from Bibliographically Coupled Papers using the Mahmood, AZ Khan and Bokhari (2020) paper as the Origin Paper with Quality Criteria Applied 60

3.6 Papers Included from Bibliographically Coupled Papers using the Mahmood, AZ Khan and Bokhari (2020) paper as the Origin Paper with Quality Criteria Applied 61

3.7 Excluded Results from Bibliographically Coupled Papers using the Mahmood, AZ Khan and Bokhari (2020) paper as the Origin Paper with Quality Criteria Applied 62

4.1 Information Product CSF Checklist 1/4 - Management Function 73

4.2 Information Product CSF Checklist 2/4 - Collection Function 75

4.3 Information Product CSF Checklist 3/4 - Production Function 76

4.4 Information Product CSF Checklist 4/4 - Use Function 77

D.1 PRISMA 2020 Checklist (Page et al. 2021) 110

L.1 Information Product CSF Review 533

List of Listings

E.1 Search Log File `SearchLog.bib` 118

F.1 Coded Bibliography File `Bibliography.bib` 124

F.2 Coded Bibliography File `Mahmood2020ConnectedPapersGraph.bib` 141

G.1 Bibliography Helper Script `bibhelper.py` 156

G.2 Output File `SearchLogReport.txt` 164

G.3 Output File `SearchLogTableRows.tex` 165

G.4 Output File `BibliographyReport.txt` 166

G.5 Output File `BibliographyInclJPTableRows.tex` 168

G.6 Output File `BibliographyInclTableRows.tex` 169

G.7 Output File `BibliographyExclTableRows.tex` 170

G.8 Output File `Mahmood2020ConnectedPapersGraphReport.txt` 171

G.9 Output File `Mahmood2020ConnectedPapersGraphInclJPTableRows.tex` . . 173

G.10 Output File `Mahmood2020ConnectedPapersGraphInclTableRows.tex` 174

G.11 Output File `Mahmood2020ConnectedPapersGraphExclTableRows.tex` 175

H.1 LaTeX Helper Script `latexhelper.py` 178

I.1 Content Analysis Script `contentanalysis.py` 186

I.2 Translation Rules File TranslationRules.csv 196

I.3 Output File ContentAnalysisReport.txt 199

I.4 Output File CSFChecklistManagementFunctionTableRows.tex 200

I.5 Output File CSFChecklistCollectionFunctionTableRows.tex 201

I.6 Output File CSFChecklistProductionFunctionTableRows.tex 202

I.7 Output File CSFChecklistUseFunctionTableRows.tex 203

I.8 Output File CSFChecklistManagementFunction.csv 204

I.9 Output File CSFChecklistCollectionFunction.csv 205

I.10 Output File CSFChecklistProductionFunction.csv 206

I.11 Output File CSFChecklistUseFunction.csv 207

I.12 Output File CSFReviewTableRows.tex 208

I.13 Output File CSFReview.csv 361

J.1 BibTool Configuration File bibtool-config.rsc 520

K.1 Run Script runscript.sh 526

K.2 Output File RunScriptReport.txt 529

Chapter 1

Introduction

The aim of this chapter is to introduce the necessary background knowledge, to place the current research in the context of the existing literature, to outline the scope of the study, and to establish the merit of treating information as a product, in particular in the delivery of information to customers that have critical needs around information, such as professional engineers and engineering management. Moreover, the fundamental premises that this research is based on are made explicit, the challenges of delivering information product are articulated, and the research question that must be answered to address these challenges presented. Finally, the research aims and research objectives are stated, and a summary of the chapter is provided.

1.1 Background

The concept of *information product* refers to the approach of treating information as a product (Freiden et al. 1998; Wang et al. 1998). Nimmer and Krauthaus (1992) extensively discuss the evolving legal, political, and social frameworks that manage information as a product, and provide a structure that is used here to discuss information as a product. They conclude that 'Information has value' (Nimmer & Krauthaus 1992, p. 129). This value is driving the evolving frameworks that cover all aspects of information collection, storage, usage, and ownership. In the economic sense, people find sufficient value in receiving well-prepared information that they are willing to pay for it to be collected, prepared, analysed, refined, packaged and delivered in formats that enable it to be used,

thus realising its value (Nimmer & Krauthaus 1992). The preceding contains important premises upon which the research in this dissertation is based:

premise 1.1 ***there is value in the information;***

premise 1.2 ***value is only realised when information is used.***

Information may be described as data that has been imbued with, or associated with, sufficient meaning to be informative, and thereby has value to the customer. Here, data consists of symbols, signals, or discrete facts whether in digital form or not. Information *value* then is dependent on some level of creative effort and skill by the customer and the delivery team on its journey from collection to use (Nimmer & Krauthaus 1992):

premise 1.3 ***value is dependent on some level of creative effort and skill by the customer and the delivery team.***

Note how treating information as a product immediately draws attention to the *customer*, the *value* to the customer, and the *value* to the *team* delivering the product. Conversely, the concept of *Information Technology* immediately draws attention to the technology, which is necessary for the technology needed to produce information, but it then struggles to integrate the concepts of *customer*, *value*, and *delivery team*. This is an important dynamic that forms the basis for the theoretical model development in this dissertation:

premise 1.4 ***customer*** $\leftarrow$ ***value*** $\rightarrow$ ***delivery team.***

Premise 1.4 may be read: as *value* flows to the *customer*, so *value* flows to the *delivery team*. Here, client organisations contain customers, and delivery organisations contain delivery teams. As a customer realises value by using information, so does their organisation; value then flows back through the delivery team to the delivery organisation. A customer may be one, a team may be only one; the customer and team may be the same one person and the concepts here can still prove to be useful.

The *management of information product* includes aspects of legal, commercial, economic, liability, negligence, delivery, and ownership issues (Nimmer & Krauthaus 1992); however only the critical success factors affecting *information product delivery* will be addressed through this research. All other aspects are explicitly out of scope for this study.

To better understand what constitutes a *product*, Freiden et al. (1998) provide a useful model from the field of marketing, as shown in Figure 1.1. A product may be described

as a 'bundle of benefits' intended to meet the wants and needs of a customer (Freiden et al. 1998, p. 211). A product may be considered to consist of varying ratios of the primary elements of: (tangible) goods, services, and information. A product that consists mostly of goods, and some supporting services and information, may be categorised as a Type I product, for example, oranges sold at a grocery store. A product that consists mostly of services, and some supporting goods and information, may be categorised as a Type II product, for example, a hairdressing service. A product that consists of mostly information, and some supporting goods and services, may be categorised as a Type III product: *Information Product*, for example, a safety performance report that refreshes automatically. Through this theoretical model it can be identified that information product is a unique type of product, requiring unique theories and strategies. Further, it may be identified that information product may be contained in some form of hardware/software system (goods) and have associated support (services). Thus, an important understanding for this dissertation is that:

premise 1.5 ***unique theories and strategies are required for information product;***

premise 1.6 ***all elements (goods, services, information) may enhance the value of a product;***

premise 1.7 ***the majority of the deliverable to the customer, and therefore the majority of the value of an information product, involves the information element.***

This concept then spans a wide range of fields, and that is even before the fields of software development, computer science, information management, project management, quality management, risk management, value management, and organisational management are introduced. With this span of fields, fragmentation of theory and evidence is no surprise. This research brings together ideas from multiple fields to inform information product management, and more specifically in the case of this dissertation, the delivery of information product. Therefore, it is clear that an appropriate starting point for this research is needed, ideally something critical to the operation of human society.

In the field of engineering Thorpe, Aghili and Neuren (2021) highlight the criticality of advanced information systems, and some of the challenges, for asset managers and engineering management seeking to serve society with sustainable, safe, effective, and efficient services. It is through this lens of supporting these customers with the valuable information that they require to perform their function that this research is focused:

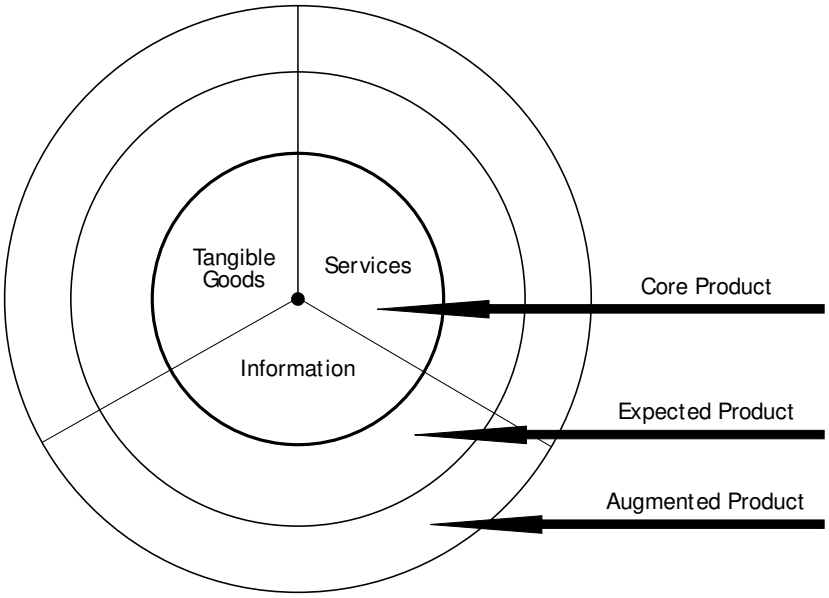

Figure 1.1: A New Concept of a Product: Tangible Goods, Services, and Information (Freiden et al. 1998, p. 211)

premise 1.8 ***professional engineers and engineering management are customers that have critical information needs.***

1.2 Challenges

Having introduced the criticality and types of information product under consideration in section 1.1, it is found that delivering this information product to customers for use continues to be considerably challenging for many organisations. In a field survey of 783 project managers, Zwikael (2009) found that the area they categorised as *software industry* had average cost overruns of 15.8% and schedule overruns of 19.8%. Compare this to the *construction and engineering* industry where the study found statistically lower cost overruns to average 11.4% and schedule overruns 12.3%. This is to say little of information projects that were considered to have failed their mission.

> Indeed, approximately 66-70 per cent of ERP implementation projects failed to achieve their implementation objectives in some way (Lewis, 2001; Carlo, 2002; Shores, 2005; Ward et al., 2005; Zabjeck et al., 2009). Surveys show that even projects with the most favourable conditions, ERP implementation failure is common (Liao et al., 2007). (Ali & Miller 2017, p. 1)

In a survey of Information Technology (IT) managers, the top three reasons for IT-related project failures were given as: 'poor planning or poor management (cited by 77%), change in business goals during the project (75%), and lack of business management support (73%)' (Basoglu, Daim & Kerimoglu 2007, p. 79). Thus, some insight into the challenges facing the management of information product delivery can already be seen. It can also be seen that business goals should be expected to change even while delivery is being worked on, and that an under-performance of the management function is known to cause project failures. Moreover, it is acknowledged that the technical complexity of delivering information product solutions requires considerable technical expertise (Basoglu, Daim & Kerimoglu 2007). IT project managers have been known to focus on the technical and financial factors, and to neglect other critical factors (Basoglu, Daim & Kerimoglu 2007), and the underlying social interactions have been described as 'unpredictably complex' - certainly a difficult place to start; whereas it is the performance of information product that matters, and the key areas that support high performance of information product are not clear enough to be reliability practised.

This dissertation, however, argues that the true cost to society is much higher. An improved model of understanding would provide opportunities to uncover hidden costs, find improved ways of working, and to maximise value while reducing risk. Avenues of investigation include reducing waste and reducing time delays in making information product available to professional engineers and engineering management to use.

When it comes to safety and sustainability in delivering information product, little has been found in the literature reviewed by the current research. That is not to say that the literature does not exist, only that it was not found by the methods employed to find and select papers for the current research. If the research does exist, then it is perhaps not well linked to the body of literature reviewed. Two of the few acknowledgements of human safety issues, that hint at the human cost, are also linked to the failure factors of *inadequate resources*, *low morale*, *low motivation*, and *high attrition rate of team members*:

> Many companies are attempt to "save dollars" by doing everything on an overtime basis, whether or not there are adequate skills within the company, extending individual workloads to 150 percent. The financial and emotional drain of what seems sometimes to be perpetual extensions, reschedules and delays of implementations takes its toll. People burn out after having put in extensive hours over a long period of time (Rockford Consulting Group, 2006). (Garg, P & Garg, A 2013, p. 507)

Moreover, the current research does *not* consider the following to describe a safe and sustainable management approach, and therefore does *not* include it in the Information Product CSF Review:

> The long hours and stress may lead to a decrease in morale among employees, requiring the project champion to cheer up the members of the project team during the implementation of the ERP system [51]. (Ngai, Law & Wat 2008, p. 555)

Given the above information, it is reasonable to ask questions. For example, is the dominant paradigm, and application, of project management processes being employed achieving the best possible outcomes? Why are there differences in cost and time overruns? Are the project management processes typically used for constructing physical assets as effective for software and knowledge work such as information product delivery? Zwikael (2009) approached this by considering industry uniqueness and relative importance of the PMBOK Guide's 9 knowledge areas, and did find significant differences in the contribution of each area to project success, both by area and by industry. The findings that some areas do contribute more on an effort invested basis, and some areas contribute less, to project success supports the notion of critical success factors in project delivery. However, the analysis of the study is limited to only the factors found in the PMBOK Guide's, fourth edition, 9 knowledge areas (Project Management Institute 2008). The most recent version of the PMBOK Guide, at the time of writing, is the seventh edition. This version changes from a process-based standard to a principal-based standard, and 8 project performance domains: 1) Stakeholder Performance Domain, 2) Team Performance Domain, 3) Development Approach and Life Cycle Performance Domain, 4) Planning Performance Domain, 5) Project Work Performance Domain, 6) Delivery Performance Domain, 7) Measurement Performance Domain, and 8) Uncertainty Performance Domain (Project Management Institute 2021). The current research notes the shift beyond project management processes to the domain and performance management paradigm, and furthermore seeks to address the challenges discussed in this section by casting a wider net for critical success factors.

Despite the very real risks, costs, and challenges, organisations that are able to successfully deliver information product attuned to usage needs see significant sustained competitive advantage, and higher performance, than organisations that fail to do so (Basoglu, Daim & Kerimoglu 2007; Bazhair & Sandhu 2015; Rabaa'i, Bandara & Gable 2009).

1.3 Research Question

A research question helps to focus the research as the research strives to answer the question (Thiel 2014, p. 9). Kromhout (2023) proposed the following research question for this research:

> How can information product delivery be set up for the greatest likelihood of success, to provide the maximum value, safely and sustainably, on-time and within budget? (Kromhout 2023, p. 5)

1.4 Research Aims

The research aims, as per the Project Specification & Work Plan in appendix A, are provided here for convenience:

The current research aims to review the available literature, to identify, analyse, and report, the critical success factors that are needed to set up information product delivery efforts for the greatest likelihood of success in terms of delivering maximum value, safely and sustainably, on-time and within budget. This research aims to review delivery efforts through the lens of the critical information product that professional engineers and engineering management require to perform their function, and to synthesise concepts from multiple research fields, to provide researchers and practitioners with a model of understanding that places the critical success factors needed for delivering information product within a value framework, and thereby providing an original contribution to the research topic that advances the field.

1.5 Research Objectives

The research objectives, as per the Project Specification & Work Plan in appendix A, are refined from Kromhout (2023, p. 6) and provided here for convenience:

1. develop the boundaries and timeline view of information product delivery;
2. define value and how it may be usefully measured with regard to information product delivery;
3. determine the critical success factors that are likely to contribute to achieving greatest value, and identify likely waste factors and processes that detract from value;
4. propose a conceptual framework for how the critical success factors may be safely applied to achieve greatest value.

1.6 Chapter Summary

This chapter introduces the background knowledge related to treating information as a product. *Information* is defined, and its relationship to value, customer, and the delivery team is described. The study scope and rationale are provided. The merit of treating information as a product is established, along with the criticality of information product to customers such as professional engineers and engineering management. The fundamental premises, that the theoretical model development of this research is based on, are made explicit. The challenges to successfully delivering information product are set out and the research question is presented. Finally, the research aims and research objectives are stated.

Summary of the fundamental premises that this research is based on:

premise 1.1 ***there is value in the information;***

premise 1.2 ***value is only realised when information is used;***

premise 1.3 ***value is dependent on some level of creative effort and skill by the customer and the delivery team;***

premise 1.4 ***customer*** $\leftarrow$ ***value*** $\rightarrow$ ***delivery team;***

premise 1.5 ***unique theories and strategies are required for information product;***

premise 1.6 ***all elements (goods, services, information) may enhance the value of a product;***

premise 1.7 ***the majority of the deliverable to the customer, and therefore the majority of the value of an information product, involves the information element;***

premise 1.8 ***professional engineers and engineering management are customers that have critical information needs.***

Chapter 2

Literature Review

The aim of this chapter is to review, and to critically analyse, existing literature as it pertains to the current research. Critical success factors are reviewed as a management paradigm, and relevant literature is reviewed in the areas of value, engineering applications, and information product delivery. A review of critical success factor literature is conducted, and the identified critical success factors are recorded as the translation rules used to extract data during content analysis for reporting, concept synthesis, and to formalise the results of the research. Subsequently, the research methodologies used by the existing literature are reviewed to form a foundation for conducting the current research.

2.1 Critical Success Factors as a Management Paradigm

The idea and use of critical success factors as a management paradigm have a long association with organisational information systems, and the idea continues to influence both research and management practice. Daniel (1961), while working at McKinsey & Company consulting firm, published a seminal article in the Harvard Business Review magazine discussing the need for management information to focus on 'success factors' and described them as 'factors that determine success' arguing that 'key jobs must be done exceedingly well for a company to be successful' (Daniel 1961, p. 116). A research team at the Center for Information Systems Research, Sloan School of Management, Massachusetts Institute of Technology (MIT) and their director Rockart (1979) progressed the idea, describing 'critical success factors' as a means to support the achievement of organisational

goals. The current research, in-line with much of the literature reviewed here, continues to investigate and apply this school of thinking to the management of information product delivery by further developing the concept of critical success factors and how it relates to the concept of value, to identify which areas may need to be considered for focus when an organisation wishes to achieve maximum value from their efforts.

> Critical success factors thus are, for any business, the limited number of areas in which results, if they are satisfactory, will ensure successful competitive performance for the organization. They are the few key areas where "things must go right" for the business to flourish. If results in these areas are not adequate, the organization's efforts for the period will be less than desired. (Rockart 1979, p. 85)

Therefore, critical success factors may be considered to be those areas of any important initiative that need to be managed for performance precisely because they are critical to achieving the organisation's goals. Note that this operates as a performance-based management approach. Performance in each critical success factor may then be managed as found in the text of university management courses, for example, the four functions of management by Schermerhorn et al. (2022, pp. 7, 9): Planning - setting performance objectives and how to achieve them; Organising - arranging people and other resources needed to do the work; Controlling - measuring performance and taking corrective action towards the desired results; and Leading - developing strategy, communicating vision, and supporting and enabling people to be engaged and motivated to achieve high performance and satisfaction in their work (collectively *effective management*).

The power and utility of critical success factors for use beyond information systems was recognised by Rockart (1979) and the research team even as they developed their specific *critical success factors method*. This specific method applied the idea of critical success factors to help executives and general managers to determine their own critical information needs. The method uses interviews to record the organisation's and the individual managers' goals, the critical success factors that underpinned achieving those goals, the measures and expected performance for each critical success factor, and how these might be reported to the respective manager by the organisation's information system.

An important principle embedded in the concept of critical success factors is that more is not necessarily better. Rockart (1979) repeats and reaffirms the commentary of Daniel

(1961) that producing extensive amounts of information, if not vital to performing a function, is wasteful and draws attention and resources away from information and work that are critical to performance. The current research follows this lean thinking, identifying the key areas that should be considered when determining where to apply effort, and where not to apply effort, when seeking to deliver information product.

One of the key issues that arises in information product delivery is in the area of business analysis. Rockart (1979) described this as the total study process, a procedure that was already known and practised at the time, and indeed the problems inherent in this procedure are cited as one of the motivations for the researchers at the Massachusetts Institute of Technology (MIT) to develop their specific critical success factor method. The goal of a total study process is stated, to form a total documented understanding of the business' information requirements, its processes, and its existing information systems, so that a gap analysis between the existing systems and the systems needed to provide the required organisational information can be performed. The idea is that this leads to the development of a plan to design and fill these gaps with new systems and processes. While this is a logical approach in theory, and it generates a lot of useful information by design, it doesn't take much more theorising - or experience - to realise that once the scope of a total study process moves beyond gap filling, it will tend towards being costly, time-consuming, and difficult to complete. To compound matters, the organisation continues to change and move on, and the aforementioned problems will increase with a rise in system complexity and business rate of change. These problems continue to motivate research, including the current research, to find improved ways of working.

Ngai, Law and Wat (2008) stressed the need for managers and researchers to recognise the dynamic nature of critical success factors and their interaction with the environment, 'We need to stress that business processes and the overall organizational environment are dynamic, and therefore the implementation process must not be treated as static.' (Ngai, Law & Wat 2008, p. 561). The current research notes that critical success factors need to be regularly assessed and monitored over the period during which they contribute to achieving outcomes, and removed when no longer pertinent. Static implementation processes are generally at risk of running aground and causing failures.

Rockart (1979) stated the importance of tailoring critical success factors and information product to the context. The Project Management Institute (2017, ch. 1) stated the importance of tailoring project management processes to the context, and Project Manage-

ment Institute (2021) dedicates a chapter to tailoring the 'project management approach, governance, and processes to make them more suitable for the given environment and the work at hand' (Project Management Institute 2021, p. 226). This is known as *contingency thinking* in management terms, and has been found to apply to all management functions. What is often thought of as the 'best' way to do something is actually contingent on the situation (Schermerhorn et al. 2022, p. 44). In engineering terms, this is taking underlying understanding and designing for safety, effectiveness, efficiency, and value in the context. Applying 'cookie-cutter' processes to different contexts without understanding the underlying concepts should be expected to be suboptimal. The current research aims to provide a model of understanding that researchers and practitioners can use, to enhance their ability to engineer information product delivery for success in a range of contexts.

The failure factor approach is taken in a number of papers (Ali & Miller 2017; Amid, Moalagh & Ravasan 2012; Basoglu, Daim & Kerimoglu 2007; Coşkun et al. 2022; Garg, P & Chauhan 2015; Garg, P & Garg, A 2013; Ravasan & Mansouri 2014). The benefit of this approach is that it directly asks: what caused the mission to fail? As with reliability engineering, this corresponds to inductive reasoning - the probability of the causes of failure based on the strength of empirical evidence. In both cases, this allows the identified factors to be managed, for example, by changing the design, or by setting performance thresholds and taking preventative actions before the point of failure. Less ideally but possibly still effective in achieving the mission depending on the consequences of failure, managers can take planned corrective or responsive corrective actions after a failure has occurred in any area. Moreover, it follows from the definitions of critical success factors already discussed, that failure factors must be managed as critical success factors to achieve the organisation's goals; from a management perspective they are in the same list, and there exists a minimum level of performance to avoid mission failure, and an optimum level of performance that achieves maximum value.

Criticisms of critical success factors include that the inputs may rely too much on the opinion of managers, without sufficient input from other parties (Ali & Miller 2017). These are certainly failings that must be avoided by taking a broad range of inputs to determine the critical success factors. With this in mind, the current research approach includes and groups all critical success factors for which it finds broad support in the reviewed literature. Further, it must be noted that the strength of empirical evidence typically varies widely by success factor, due to the complexity of management in organisations,

varying definitions of success, and varying context; these are ongoing areas of research. Thus, it is expected that the current research identifies critical success factors that have broad support in the literature and that each factor should be considered carefully for applicability to a given context. For example, there might be no vendor involvement in a particular context and therefore vendor support may not be a factor for success in that context.

Ali and Miller (2017) performed a systematic literature review of ERP system implementation in large enterprises, where they defined critical success factors as 'those key areas in which favourable results are absolutely necessary for a business to successfully compete' (Ali & Miller 2017, p. 673). These managerial and organisational areas are stated as needing purposeful attention if the organisation is to achieve high performance and future success. Moreover, they note that critical success factors are considered to have general acceptance in the management literature, tend to be intuitively understood by senior managers leading to crucial management acceptance and support, and significantly improve the likelihood of success for enterprise information systems. The current research notes that critical success factors reduce waste by focusing on the necessary and not doing the unnecessary, and in summation posits critical success factors to be an effective and efficient management paradigm for information product delivery.

2.2 Review of Value

Wang (1998) explicitly used the concept of *information product* to convey the fact that the information produced by the information production process has *value* that is transferrable to the customer. The strategic value of successful information systems, such as ERP systems, is well cited in the literature (Ali & Miller 2017; Rabaa'i, Bandara & Gable 2009). Therefore, an understanding of value is required. Fallon (1961) stated the classical relation as used in value engineering, Equation (2.1). Hamilton (2002) considered value during early product development and stated two cases for value, Equation (2.1) and Equation (2.2). Thus, value can be defined and measured with regard to information product.

Classic relation as used by value engineering (Fallon 1961, p. 96), may be considered to be value as viewed by the seller (Hamilton 2002, p. 131):

$$Value = \frac{Function}{Cost} \tag{2.1}$$

Value as viewed by the buyer (Hamilton 2002, p. 131):

$$Value = \frac{Benefits}{Price} \tag{2.2}$$

2.3 Review of Engineering Applications

The organisation and business drivers for implementing information technology, such as enterprise resource planning (ERP) systems, are an ongoing pursuit for objectives such as making information available where and when it is needed, thereby improving the speed, effectiveness, efficiency, and quality of decision-making and activity management. Increased information integration across the organisation, and improved resource and cost management, enable compelling interaction with customers and improved customer experience (Basoglu, Daim & Kerimoglu 2007; Rabaa'i, Bandara & Gable 2009).

> Enterprise resource planning systems (ERP) refer to the software packages that integrate all the data and related processes of an organization into a unified information system (IS). (Garg, P & Garg, A 2013, p. 496)

> A successfully implemented ERP system can be the backbone of business intelligence for an organisation, by giving managers an integrated view of the business processes (Parr and Shanks, 2000; Nash 2000). (Rabaa'i 2009, p. 2)

In physical asset intensive organisations, professional engineers are engaged to perform asset management, for example, electrical engineers, mechanical engineers, environmental engineers, structural, and civil engineers. Strategic decisions, tactical decisions, and management work, consume a large amount of the organisation's resources. Strategic decisions around how assets are performing, for example, how much they cost to maintain, and therefore whether and which assets to keep, replace, and introduce newly into the organisation - all call for the best available information. In a tactical sense, ongoing maintenance management, and demonstrating items such as statutory compliance, place demands on information delivery. Universities, and other organisations with large facilities

to manage, implement engineering information management systems, spatial information systems, and facilities management software to manage the maintenance and operations of their assets (Rabaa'i, Bandara & Gable 2009).

In the construction industry, take-up of information solutions is known to lag other industries 'despite its information intensive nature' (Chan 2013, p. 105). However, there are many areas that information systems can offer solutions to quantity surveyors, civil engineers, and construction project managers for existing problems. For example, Chan (2013) states that communication of information is often cited as causing problems in construction projects due to fragmented information and distributed operations, and information solutions can combine information and shrink the distances between functions. Take-off software can accurately estimate quantities, costs, and produce bills of materials from 2D drawings and 3D building information system (BIM) models, and when combined with cost information can aid contract tendering (Chan 2013; Thorpe, Aghili & Neuren 2021).

Additional examples of organisational areas cited in the literature that typically involve professional engineers and information needs include: manufacturing, financial/cost management, logistics, supply chain, administrative automation, and inventory management (Chan 2013). The field of computer engineering is naturally extensively involved in producing information product, and it has much overlap with the field of software development in areas such as aerospace, where hardware and software work closely together to produce information that is crucial to safe and efficient operations, and engineering functions, as indicated by the author biographies of Coşkun et al. (2022).

To meet the information, and management, needs of professional engineers and engineering management, enterprise resource planning (ERP) systems are often implemented in organisations. When implemented, an ERP system typically forms a central part of the information system needed to produce information product (Chan 2013). One of the strengths of an information system is that it streamlines the flow of information and makes it available for use to a range of organisational functions. An ERP system can be described as a total solution for enterprise information processing (Ali & Miller 2017). However, a total solution may also include a number of other business systems, software packages, tools, integrations, and Business Intelligence (BI) functionality (Basoglu, Daim & Kerimoglu 2007). The current research collectively considers the overall information solution, and focuses on the aspects necessary to collect information, process information,

and produce information product for use.

In summary, there are many existing and emerging areas where information product can offer benefits to professional engineers and engineering management. However, high cost and fear of failure are barriers to receiving the benefits (Chan 2013). Through the current research it becomes evident that the informed management of information product is a key function if benefits are to be successfully realised.

2.4 Review of Delivery

The delivery of information product is considered to be a part of the wider management of information product (Nimmer & Krauthaus 1992). This section aims to review the boundaries and timeline of information product delivery.

Ali and Miller (2017) structured their systematic literature review according to the following phases: pre-implementation, implementation, and post-implementation. Their findings were summarised under the implementation banner, and go on to highlight the importance of all three phases to a successful implementation. Further, Barth and Koch (2019) provide literature support for critical success factors in the context of upgrade projects. Therefore, it appears reasonable for the current research to consider all of these phases to fall within the boundaries and timeline of information product delivery. Ngai, Law and Wat (2008) eloquently argued for this to be the case:

> We would argue that other post-implementation activities are as important in the lifecycle of an ERP system, including the operation, and upgrading and maintenance of the software, in order to maximize the organizational benefits of the system. (Ngai, Law & Wat 2008, p. 561)

Ali and Miller (2017) limit their review of ERP implementation to the point after the decision is made to deliver the ERP solution. Thus, they exclude factors such as initial budget setting, and the organisation's business/product strategy. The current research applies a similar limit to the boundaries of information product delivery, taking the starting point as the point immediately after the decision is made to begin delivery of an information product.

Wang (1998) identified four roles related to information product:

1. Information Supplier - a role that collects or creates data for information product;
2. Information Manufacturer - a delivery role that designs, develops, and maintains the information system that processes data to produce information product;
3. Information Consumer - a customer role that uses information product in their work;
4. Information Product Manager - a role that manages the end-to-end production process and information life cycle.

These roles contain relevant concepts that merit further analysis, and synthesis, by the current research. However, the idea of creating data may be problematic and needs to be treated with some care. Data is only created in so much as it is information collected into a starting form, sometimes referred to as raw data. As an engineering example, consider a mechanic collecting a thickness measurement of a wear plate into a digital form. As the amount of creative effort and production applied compound, so information becomes less of a raw material and more of a product, for example, the submitted thickness measurements being transformed into a time series with trend analysis. A reliability engineer using this information product to forecast and plan replacement of the wear plate in a safe timeframe would then be an example of a customer that uses the information product in their work.

Roles, of course, maybe be redefined so long as all the necessary functions are allocated and performed. Thus, it seems reasonable to consider the functions related to information product as:

1. Collection - the function of collecting data for information product;
2. Production - the function of producing information product;
3. Use - the function of using information product to realise value;
4. Management - the function of managing information product to maximise value.

The current research, therefore considers that information product delivery must enable all the above functions, up to, and with a vested interest in, the use of the information product to realise maximum value, while not necessarily including the specific expertise

needed to collect the data or to use the information product. Extending on the previous example, the expertise to collect the data and the expertise of use are provided by functions separate from information product delivery: the function of the mechanic to physically collect the measurement, and of the reliability engineer to determine and specify the safety margin and plate thickness at which the wear plate must be replaced.

2.5 Review of Critical Success Factors

The published literature provides a rich and extensive source of data for determining critical success factors relevant to delivering information product, in particular the literature treating: Information Product, Quality, and Enterprise Resource Planning (ERP) implementations. ERP implementations are typically complex organisational initiatives to manage and deliver successfully, and when implemented form a large part of the overall information production solution. Thus, it seems reasonable to consider that ERP systems and their wider solutions face almost all the challenges that information product delivery as a whole faces, and a few very specific challenges that are easy to identify. Therefore, the current research selects and reviews literature from the ERP research area, using Bibliographic Coupling as described in the methodology of section 3.6, as a data source of relevant critical success factors. In addition, a valid criticism of critical success factors is failure to identify factors due to narrow inputs. To avoid this, inputs are further broadened by reviewing a smaller selection of additional research areas that are used for theory development but not for data extraction; with theory in place any data gaps should be evident. This section now moves to examining each paper in the dataset to explore the existing body of knowledge, and to establish the basis of the critical success factors in information product delivery.

Wang (1998) developed and reported a theoretically-grounded methodology, titled "A Product Perspective on Total Data Quality Management", for delivering information product with a focus on *information quality* as an intrinsic part of information product delivery. In actuality the paper may also be considered to make a case for *quality management* in the production and delivery of information product. The paper draws parallels with, and distinctions against, the production of physical product. In a parallel to physical product manufacturing, the production of information product is viewed as a production process, as summarised in Table 2.1. Input in the form of raw data is processed

by an information system that outputs information product - a product that needs quality management. A distinctive characteristic is that a quantity of raw materials is consumed for each physical product produced, whereas data and information may be copied without consuming it such that the number and types of product and customers served by the same raw data is not limited by the raw data once the cost of collection has been paid. The current research notes and includes *information quality* and *quality management* as key theoretical components of the developed conceptual framework.

Table 2.1: Production of Physical Product versus Information Product, adapted from Wang (1998)

Product Type	Physical	Information
Input	Raw Materials	Raw Data
Process	Assembly Line	Information System
Output	Physical Product	Information Product

Ali and Miller (2017), in a systematic literature review of ERP system implementation in large enterprises, focused on minimising the probability of failure. This dissertation, however, argues for a point towards holistic risk management, rather than attempting to minimise the probability of failure in all cases. For example, it may be possible to identify and actively manage risk factors through the critical success factor management paradigm, or in conjunction with a risk management framework (Ali & Miller 2017; Amid, Moalagh & Ravasan 2012; Osman & Sahraoui 2019; Rabaa'i & Gammack 2016). The most direct argument is that managing the probability of failure is *risk management*, even assuming that minimising the probability of failure is the best approach for a particular case. A more nuanced argument follows. Attempting to directly reduce risk to a minimum should be expected to incur maximal cost, due to economic reality, and therefore resulting in delivery of the minimum value. Further, aiming for minimal risk should be expected to introduce excessive time delays, via the reality of maximising risk mitigation activities. Time delays in turn increase frustration, a human experience that works against the motivation to deliver. In addition, since risk cannot be zero, and risk cannot generally be mitigated through financial expenditure alone, when failures do occur, a high cost is already incurred. Thus, failure to deliver becomes: lost benefits, lost time, lost motivation, and high sunk monetary cost.

Ali and Miller (2017) explicitly stated in their findings that they found the top three critical success factors during implementation to be: 'top management support, good project management teams, and good communications' (Ali & Miller 2017, p. 666). However, the paper is not clear on how these three factors were selected over the many factors identified. It is likely because these three factors were repeatedly noted in the reviewed literature, and they were considered by the authors to be critical across all phases of delivery. Moreover, it does not seem reasonable to ignore findings which: 'confirm that "users" are the most significant determinant affecting the ERP usage and eventually the success of ERP implementation' (Ali & Miller 2017, p. 680), rather this finding gives strength to *user involvement* as a critical success factor, and *user satisfaction* and *use* as success dimensions. The current research considers the reported three factors to be useful from a management perspective, and the current research approach requires all identified critical success factors to be extracted.

Amid, Moalagh and Ravasan (2012) took the failure factor approach, identifying 47 failure factors through literature review and semi-structured interviews. The study was prompted by a high failure rate in Iranian industries. Robust Exploratory Factor Analysis (Robust EFA) was used to classify the failure factors into seven groups: 'vendor and consultant, human resources, managerial, project management, processes, organizational and technical' (Amid, Moalagh & Ravasan 2012, p. 227). The current research includes this data.

Anjum and S Khan (2015) reported significant positive effect on ERP implementation success for a model that classified critical success factors as: 'technological, strategic, project management, people, top management support, and communication' (Anjum & Khan, S 2015, p. 628). Their survey analysed 422 responses from Pakistani organisations. The current research notes this source of empirical support, and that it generally is in accordance with the body of literature reviewed.

Barth and Koch (2019) developed a theoretical extension of critical success factors in ERP upgrade projects. Their work extends the theoretical understanding into the context of performing upgrades of information product. The strength of evidence is limited by qualitative interviews with only 12 people, primarily senior managers in the field. However, support for 14 critical success factors that agree with extant literature is provided, along with qualitative descriptions of factors in the context of performing upgrades. The current research includes the literature support for the factors identified.

Bazhair and Sandhu (2015) found that *effective change management* increased acceptance of ERP systems within the organisation; and according to the Technology Acceptance Model (TAM) this should lead to *intention to use*, and *actual system use*. Their research analysed 526 survey responses from Saudi Arabia listed companies. The current research notes this empirical support, notes the need to be *effective*, and includes *change management* as a search term in the content analysis translation rules. However, the current research argues that the outcome of *effective change management* is *organisational change* that enables the benefits of information product to be realised. Thus, *organisational change* is recorded as a critical success factor.

Basoglu, Daim and Kerimoglu (2007) researched conceptual models and frameworks related to information system success and organisational adoption of ERP systems. Their theoretical framework, not empirically tested at the time, provides support for the *management function* as crucial to information product success. In the context of ERP adoption, the perspective taken was that special management effort is necessary to reduce the gap between a packaged system and users, i.e. to achieve fit. Their paper is also a source of critical success factor data that is included in the current research. Each of the reviewed models has advanced some aspect of understanding, for example, the Original DeLone and McLean Information Systems (IS) Success Model shown in Figure 2.1 provides a model to better understand how *Use* and *User Satisfaction* interact and lead to *Individual Impact*, which then flows to *Organisational Impact*. *Use* and *User Satisfaction* depend on the *Qualities* of the information solution. This model has proven to be highly influential, with the paper being cited by over 18,400 citations to date (source: Google Scholar), and has been reported as being extensively tested and having garnered much empirical evidential support (DeLone & McLean 2003). It would therefore be remiss of the current research not to review the updated model, shown in Figure 2.2, with the follow-up paper also having being cited by over 18,700 citations to date (source: Google Scholar).

Chan (2013), in a review of information technology use by Australian quantity surveyors and the construction industry, also cite the Updated DeLone and McLean IS Success Model as being in wide use and suitable for their study. The paper also reviews critical success factors and is used as a data source by the current research.

DeLone and McLean (1992; 2003) developed and then updated the Information Systems (IS) Success Model, shown in Figure 2.1 and Figure 2.2 respectively, the update was based on a decade of feedback and research published by other researchers, the model being

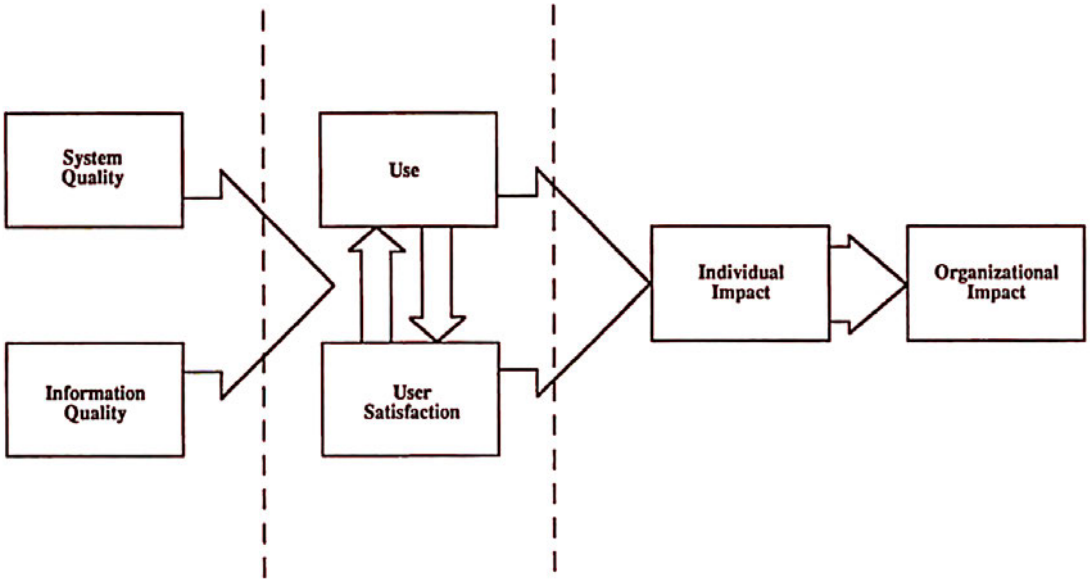

Figure 2.1: Original DeLone and McLean IS Success Model (DeLone & McLean 1992, p. 87)

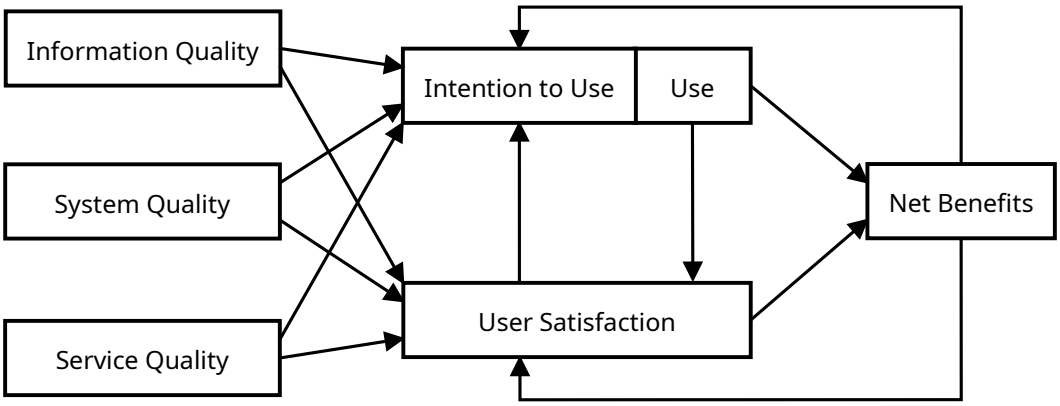

Figure 2.2: Updated DeLone and McLean IS Success Model (DeLone & McLean 2003, p. 24) - Redrawn

ostensibly validated and supported by much empirical research showing significant positive causal relationships between the dimensions in the directions depicted. *IS Success* is considered to be a complex dependent variable, and the model defines six dimensions on which to measure *IS Success*: *Information Quality*, *System Quality*, *Service Quality*, *Use*, *User Satisfaction*, and *Net Benefits*. The dimensions are considered to be interrelated, and not independent of each other. As a process model, the Information System is first developed and made available for *Use*, having certain *Qualities*. 'Next, users and managers experience these features by using the system and are either satisfied or dissatisfied with the system or its information products.' (DeLone & McLean 2003, p. 11). Benefits occur

as a result of *Use*; these impacts may be positive or negative, hence *Net Benefits*. If the *Net Benefits* are negative, or insufficient, from the perspective of the owner then it is likely that the decision to stop delivering the product, or to change the delivery organisation, is taken. If *User Satisfaction* falls due to one of the *Qualities* experienced during *Use*, *Intention to Use* falls and along with it *Use* falls, and *Net Benefits* fall. *Use* is a complex construct; for example, improper use may lead to negative impacts. Applying the model to empirical research, or operations, requires defining the context, stakeholders, and suitable measures within each of the six dimensions; the model is intended to 'inform the development of a more comprehensive success construct' (DeLone & McLean 2003, p. 12). Finally, the IS Success Model says nothing of the antecedents to the successful delivery of information product with *Qualities*, the current research works to exposit these critical success factors and to develop a conceptual framework whereafter measures may be selected and applied by future research and practitioner efforts. The Information Product Success Model developed by the current research effort is shown in chapter 4, Figure 4.1.

Chatzoglou, Chatzoudes and Apostolopoulou (2016) constructed a model to test critical success factors as causal antecedents of the Updated DeLone and McLean IS Success Model. They selected 13 critical success factors from 65 relevant papers by a formal weighted index method, the method ranked critical success factors based on study findings. The factors were categorised into predetermined dimensions, and the highest ranked factors in each dimension were selected for the study as shown in Figure 2.3. The research was limited to analysing 204 valid survey responses, all from IT managers of Greek companies that had implemented ERP systems. The current research found the ranking method unsuitable for the papers that it analysed for critical success factor data, and further, came to the conclusion that a wider range of contexts required all critical success factors with broad literature support to be included in its results as a next step in this area of research and operational application. Notably, the causal model and results, Figure 2.3 and Figure 2.4 respectively, do not include the important mediating function of Use, nor the IS Success dimension of *Use*. However, the results do provide: a) empirical support for attending to user related critical success factors in delivering successful information product, and b) empirical and conceptual support for the application of critical success factors as causal antecedents of the Updated DeLone and McLean IS Success Model.

Coşkun et al. (2022), with a research team of five, published a systematic literature mapping (SLM) of ERP failure factors. A pool of 72 primary studies was selected from 353

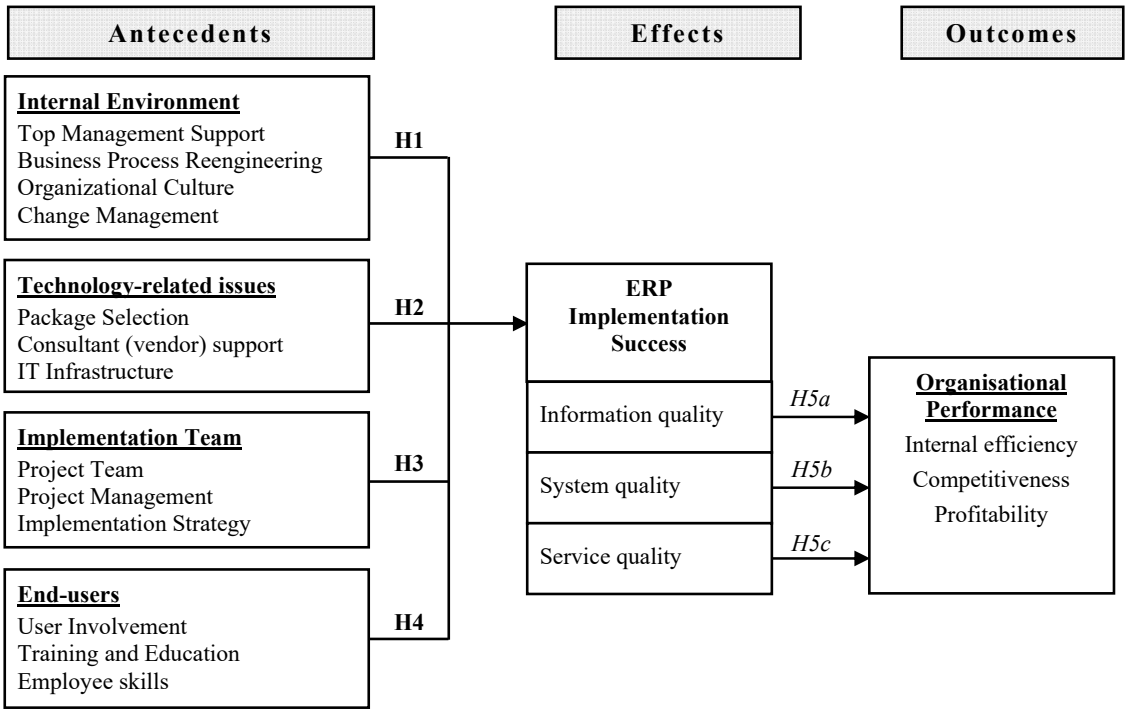

Figure 2.3: Antecedent Causal Research Model (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1257)

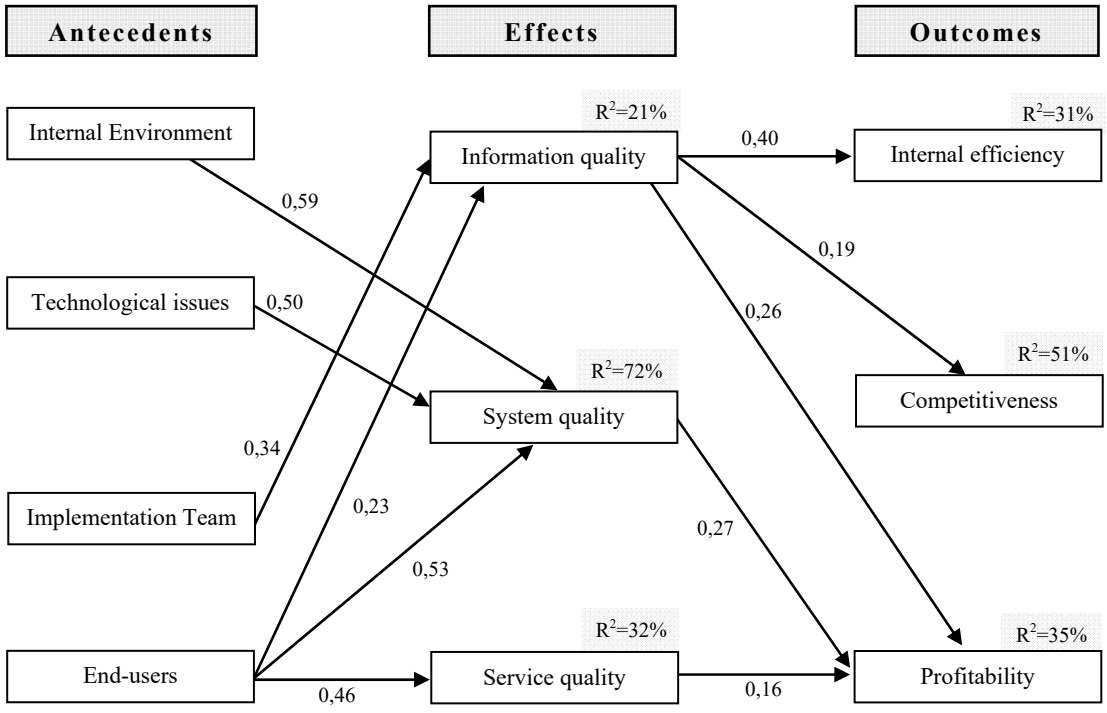

Figure 2.4: Antecedent Causal Research Results - Only Significant Paths Shown (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1259)

candidate papers by the authors, and reviewed with the objective of assisting researchers and practitioners to gain an updated understanding of the literature across the many industries, enterprise sizes, and countries studied. As expected, the relative importance of factors varies across these strata: context is important, and there is also much that is common. They considered 7/72 (9.7%) papers to be strong empirical studies, 38/72 (52.7%) to be weak empirical studies, 16/72 (22.2%) to be solution proposals, and the remaining 11/72 (15.3%) to consist of experience, philosophical, and other. As for secondary studies, the latest important secondary paper listed, apart from their own, was the Mahmood, AZ Khan and Bokhari (2020) paper. Note that this paper is used by the current research as the origin paper for Bibliographic Coupling to find many of the papers reviewed here, and all the papers used for critical success factor data extraction. Coşkun et al. (2022) report coding 806 items for failure factors in their primary pool of papers, and grouped these into 17 categories. The items were listed in appendices, and were available as a PDF download. The current research reviewed the published items, and included additional terms where necessary into the content analysis translation rules. Due to a different working method, the current research is able to reduce the number of terms, for example, instead of 'lack of top management support', 'top management commitment', and 'top management' only the latter is needed as a term; and translated to 'Top Management Support (FF)' as a critical success factor which is a known failure factor (FF).

Finney and Corbett (2007) analysed critical success factors from 45 articles related to ERP implementation, selecting 'any condition or element that was deemed necessary in order for the ERP implementation to occur successfully.' (Finney & Corbett 2007, p. 331). They found that *change management*, while highly cited in the literature as a critical success factor, was represented by an inconsistent array of factors. Moreover, *change management* as a critical success factor was not directly useful, in that it did not represent with sufficient specificity what was needed to be successful. The current research notes, and discusses, that the same problem occurs with *project management*, *quality management*, and all the *management* factor groups. For example, if *training* is also a highly cited factor, is it to be grouped under *change management*, or kept as a distinct factor? What about *organisational structure*: is that to be grouped under *change management*, *project management*, *human resource management*, or *top management support*? Thus, the researcher's quandary in presenting critical success factors, is whether to retain these groups for their apparent ease of understanding and management sub-delegation, or whether to break them down into individual factors where possible and risk

inconsistency and over-complication. The current research takes the view that different organisations will choose to delegate critical success factors to different management groups, and that ideally the role of research is to undercover the specifics and to report and present them in a way that allows the former to be done.

> Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF. Consequently, there is little research documented that encompasses all significant CSF considerations. (Finney & Corbett 2007, p. 340)

Finney and Corbett (2007) reported critical success factor categories, and Coşkun et al. (2022) reported failure factor categories. Table 2.2 shows that many critical success factors are also known failure factors. The table demonstrates that the latter describes an insufficient level of performance in the former, the difference being that failure factors have been derived by a research approach that investigated failures, and thus arguably carry a strength of empirical evidence showing that failure of the mission may be expected below a minimum level of performance for these factors. As discussed in section 2.1, from a management paradigm perspective all critical factors need to be managed for performance. Further, by reviewing Table 2.2, it can be seen that reduction-by-categorisation introduces problems such as assumptions about what will be done and measured together, for example, 'Training and Job Redesign' where the performance of these two elements should more probably be measured independently. Coşkun et al. (2022) themselves place a confusing caveat on 'Project Management Problems' stating that it, excludes: *budget*, *communications*, and *project team*; and includes: project coordination items such as *unrealistic project scheduling*, *implementation strategy*, and *change management*.

Table 2.2: Critical Success Factors That Are Also Failure Factors

Row	Critical Success Factor Category (Finney & Corbett 2007)	Failure Factor Category (Coşkun et al. 2022)
1	Balanced Team	Poor Project Team
2	BPR and Software Configuration	Poor quality of BPR
3	Build a Business Case	
4	Change Management	Poor Organizational Culture, Resistance to Change
5	Client Consultation	Lack of User Involvement

Table 2.2: *continued from previous page*

Row	Critical Success Factor Category (Finney & Corbett 2007)	Failure Factor Category (Coşkun et al. 2022)
6	Communication Plan	Communication Problems
7	Consultant Selection and Relationship	Poor Solution Implementer Performance
8	Data Conversion and Integrity	Data Quality
9	Empowered Decision Makers	Poor Organizational Culture, Poor Project Team
10	Implementation Strategy and Timeframe	Project Management Problems
11	IT Infrastructure	Outdated IT infrastructure
12	Legacy System Consideration	
13	Managing Cultural Change	Poor Organizational Culture, Resistance to Change
14	Post-Implementation Evaluation	
15	Project Champion	
16	Project Cost Planning and Management	Financial Management Problems
17	Project Management	Lack of Clarity on Scope, Project Management Problems
18	Project Team: The Best and Brightest	Poor Project Team
19	Selection of ERP	ERP Software Misfit
20	System Testing	Poor Quality of Testing
21	Team Morale and Motivation	Poor Organizational Culture
22	Top Management Commitment and Support	Lack of Top Management Support
23	Training and Job Redesign	Lack of Training
24	Troubleshooting/Crises Management	
25	Vanilla ERP	Highly Customized ERP
26	Visioning and Planning	Lack of Clarity on Scope: Business Plan and Vision

P Garg and A Garg (2013) provided empirical support for 9 failure factors having high impact on implementation success, from n = 175 valid survey responses collected in an Indian retail context. Respondents included sponsors, project managers, and team members who had involvement in ERP implementation. In this study, failure was defined as an implementation that realised insufficient return on investment (ROI), as compared to that specified in the project's approval. An initial 38 failure factors were selected from the literature, which appears to have been a non-systematic review. Following expert opinion review, a pilot study, and factor analysis, this was reduced to 28 factors. Finally, Pareto analysis of the survey results presented the top 9 'vital few' failure factors, and the remaining 19 'useful many' factors. Showing that the Pareto principle - where approximately 80% of an outcome's consequences come from approximately 20% of the causes - holds for failure factors. In this case, the top 9 factors accounted for over 75% of the problems. Pertinently, a Pareto chart is a quality control tool. The current research notes two important points: 1) effectively dealing with the top 20% of factors in a given context should be expected to control 80% of the problems; however 2) by definition, *all* failure factors relevant to a given context still need to perform above their failure level to avoid mission failure. Consider Figure 2.5 – *cost overrun* is ranked 18th in the context of this study, however, in many contexts *cost overrun* can see a project suspended and the mission failed.

P Garg and Agarwal (2014) demonstrated significant relationships between 5 critical success factors and successful ERP implementation, from n = 35 valid survey responses collected in a Fortis hospital context - a national Indian and international healthcare context. Respondents included managers, key users, and consultants who had involvement in ERP implementation. The small sample size is noted as a limitation to result generalisation based on this study alone. Figure 2.6 reports that 87.7% of the success variance could be explained by the factors in this context. In addition, each of the relationship results were stated as agreeing with numerous published works. Project management was said to include several factors, contributing to the relatively high standardised coefficient $\beta = 0.506$: *cost*, *scope*, *PM strategy*, *schedule*, *realistic project milestones*, *vendor & consultant communications*, *team empowerment*, and 'the complex coordination of people, process, and technology' (Garg, P & Agarwal 2014, p. 418). Notably, they found that 'the correlation results indicated that a number of significant inter correlations among the independent variables existed.' (Garg, P & Agarwal 2014, p. 411). This means that the independent variables, the factors, are not completely independent of each other. As an illustrative

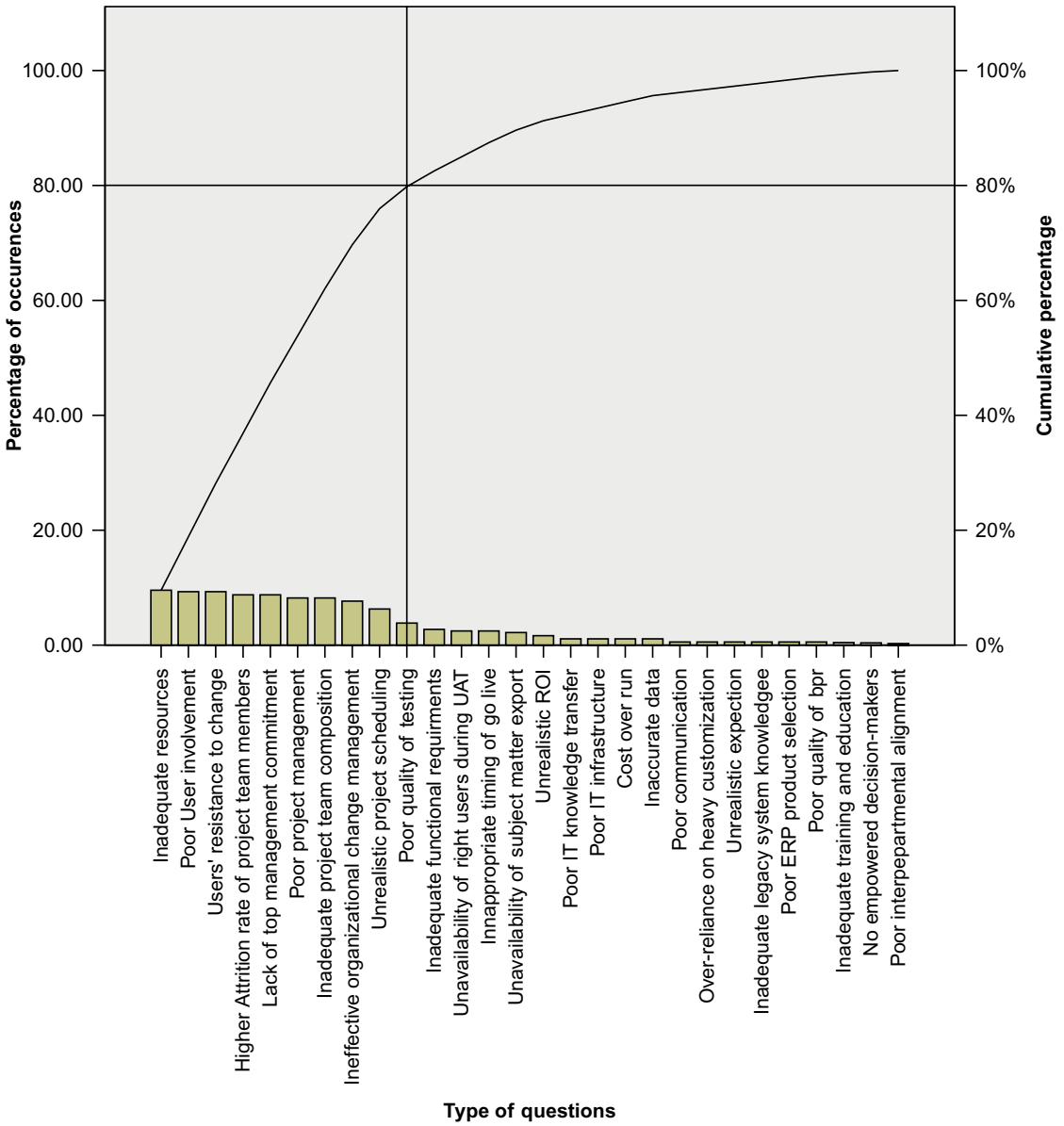

Figure 2.5: Pareto Chart of Failure Factors - Retail India (Garg, P & Garg, A 2013, p. 508)

example, the current research refers to Figure 2.5 where once again, *inadequate resources* were found to be the top failure factor in that study, and *cost overrun* was found to be 18th. It is reasonable to assume that these have some level of inter correlation since resources incur cost - not spending sufficiently on resources is a certain way to not overrun on costs. However, due to inter correlation, problems from *inadequate resources* can arise causing the mission to fail.

The P Garg and A Garg (2013) paper, and the P Garg and A Garg (2014) paper both reported an empirical study in the retail context of India. In both papers 215 questionnaire responses were received, and n = 175 valid responses were used for analysis, after incomplete

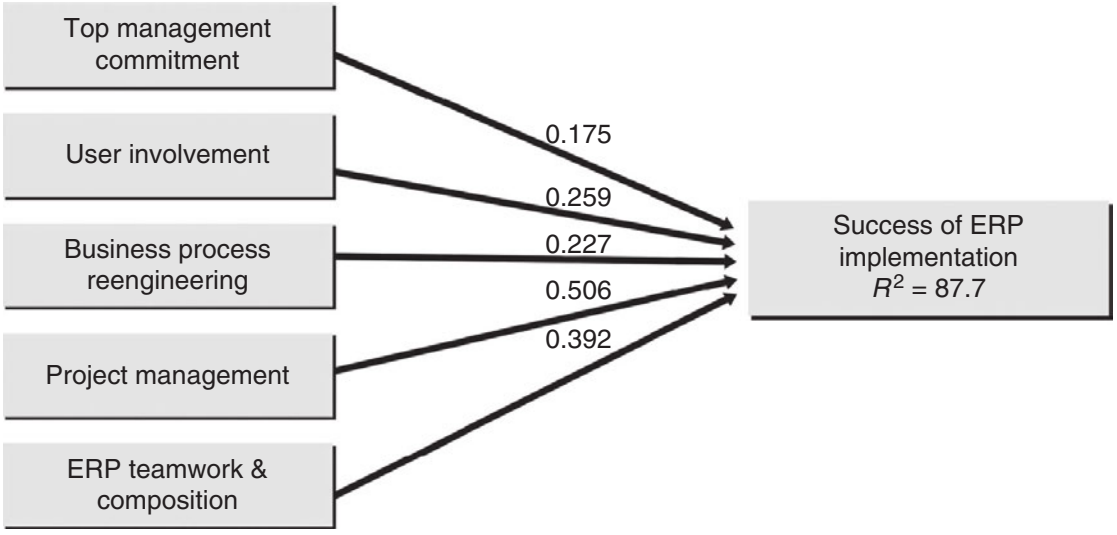

Figure 2.6: Multiple Regression Model Showing β Coefficients - A Fortis Hospital - All Relationships Significant (Garg, P & Garg, A 2014, p. 417)

response had been removed. It is not clear whether the 2014 paper may have returned to further analyse the same data as the 2013 paper. The literature review appears to have been updated and refined, now tabulating 29 factors using critical success factor terminology, which is useful to the current research. The original questionnaire took the failure factor approach, and this is confirmed to still be the case for the data in the 2014 paper. Factor analysis in the 2013 paper categorised 28 factors into 6 groups, while the 2014 paper categorised 21 factors into 4 groups. Correlation and multiple regression analysis were added by the 2014 paper, confirming that relationship correlations in the data were significant. In both papers cause-and-effect diagrams were presented with their respective factors and categories. P Garg and A Garg (2014) generated the cause-and-effect diagram shown in Figure 2.7, also aptly known as a fishbone diagram, herringbone diagram, and Ishikawa diagram; pertinently, the cause-and-effect diagram is a quality control tool. Visualisation of the factors aids communication and holistic understanding. Note how critical success factors such as *communication* can be repeated under more than one grouping with more specific formulation, as compared to classification which aims to reduce factors.

P Garg and Chauhan (2015) continued the research in the India retail context, applying Structural Equation Modelling (SEM) to 4 updated categories over 20 failure factors, as shown in Figure 2.8. Note, for example, that the *testing and troubleshooting* factor moved from the Project Management category to the People category, when compared to

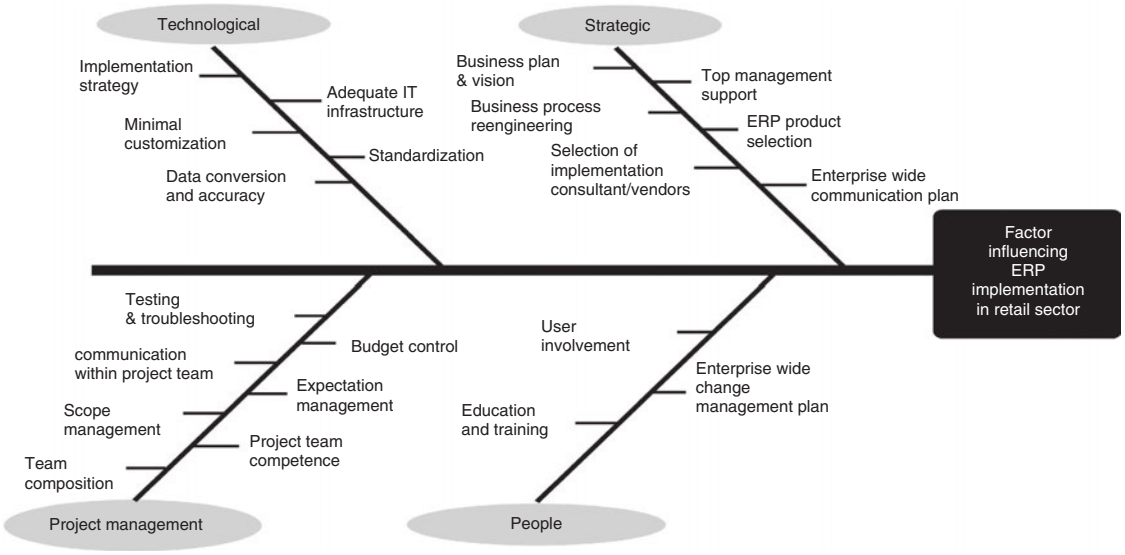

Figure 2.7: Cause-Effect Diagram - Retail India (Garg, P & Garg, A 2014, p. 430)

Figure 2.7. Moreover, *inadequate/adequate resources* do not appear to be represented as an individual factor. Unfortunately, there is no reference to the 2013 paper nor discussion or explanation to guide other researchers, despite previous findings in the same context. Low correlation between the higher level category constructs is now reported. The current research considers that the inter correlations between certain critical success factors are still present in information product delivery, using a higher level category construct and removing some factors from a model means that those inter correlations cannot be reported by said model. The limitations of perceptual survey data with regard to performance measurement is noted, in particular for benefit and success measures where more objective measures would strengthen results. The current research is not performing a systematic literature review as research methodology, and thus is not scoped to further investigate the validity of every study reviewed, beyond identifying broad literature support and an understanding of the strength of empirical evidence in the extant literature.

Huang et al. (2021) identified a list of 35 critical success factors through systematic literature review related to cloud ERP systems, in contrast to on-premise deployed solutions. One of their aims was to create an 'organised and sensible set' of critical success factors. They found the top 3 factors by number of citations in the literature to be: *security*, *project management*, and *communication within the company*. The current research considers that these cloud-related factors are now widely relevant, and includes them in the content analysis translation rules, aiding the current research to create an even more comprehensive 'organised and sensible set' of critical success factors.

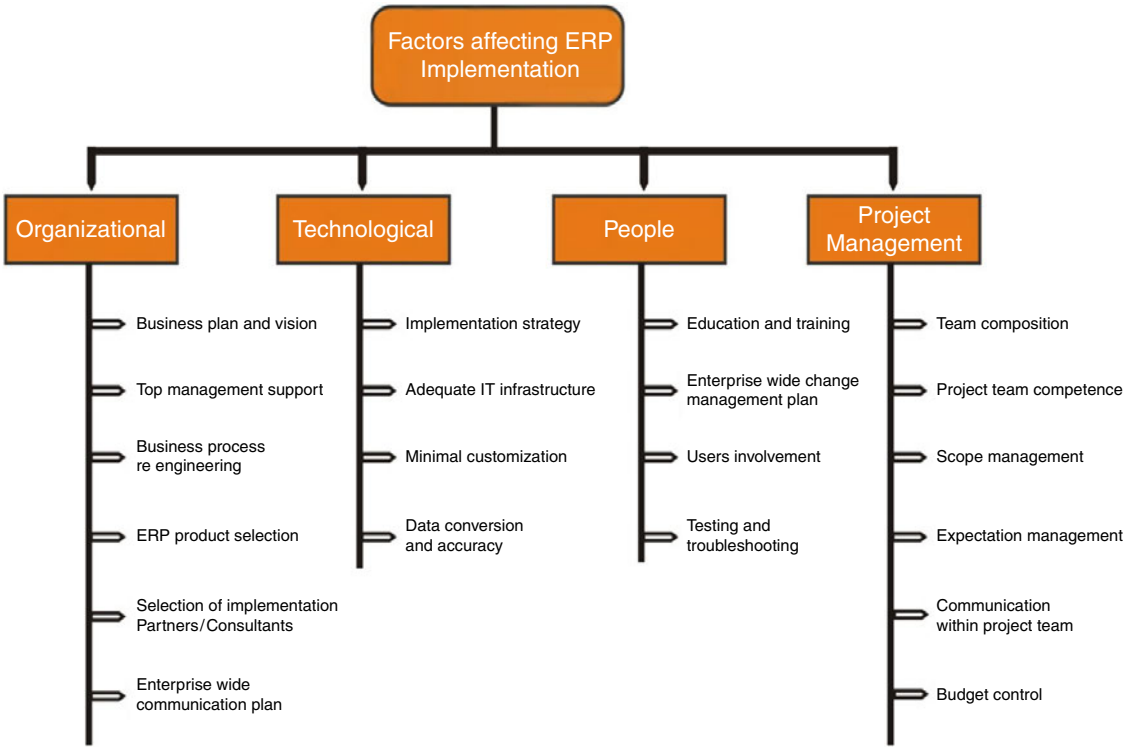

Figure 2.8: Tree Structure of Factors - Retail India (Garg, P & Chauhan 2015, p. 1317)

Khattak et al. (2013) published a study investigating, and comparing, ERP implementation critical success factors in two developing countries. This study investigated 12 organisations, 12 cases, in China that had completed implementation at least 2 to 3 years prior to the study. A single respondent was qualified from each organisation, n = 12 valid survey responses; effectively making for a case study of 12 organisations administered by survey. These responses were compared to their prior study in Pakistan. The study investigated 20 critical success factors identified from the literature, and used the Organisational Impact dimension of the DeLone and McLean IS Success Model (DeLone & McLean 1992), Figure 2.1, using the success measures of on-time, within budget, and whole of organisation impact based on quantified goals. The study applied a qualitative approach, with no statistical significance analysis reported, which was able to review and discuss patterns of successful and non-successful implementations. For example, the study found that a range of *ERP strategy and implementation methodology* resulted in success, and sometimes also in failure, therefore the study found no discernible *ERP strategy and implementation methodology* that usually resulted in success. Comparing the results to the prior study in Pakistan, the criticality differed in more than 50% of factors. The current research notes that once again context matters, there is no 'best' *ERP strategy and implementation methodology* for all contexts, and that the importance of critical success factors varies by

context, even within segmentation such as developing countries, and from organisation to organisation.

Mahraz, Benabbou and Berrado (2020) published a list of 12 critical success factors, based on their frequency of appearance in 35 papers reviewed by a systematic approach. From this, 6 factors were selected for empirical investigation, a survey of 24 Moroccan companies in a range of industries, a single valid response from each company was received, n = 24. The survey data was published with an importance ranking of the 6 factors, without statistical analyses. The current research notes this source of critical success factor information, and the Moroccan context.

Ngai, Law and Wat (2008) performed a systematic literature review of 48 empirical studies, from an initial search result of 299 papers. The studies covered 10 countries/regions, and the adoption of enterprise resource planning information systems. They identified a set of 18 critical success factors, and over 80 sub-factors, based on frequency of citation in the literature reviewed. They observed that 'Cultures, government regulations, and economic environments differ among countries, a fact that raises some issues and challenges for ERP implementation' (Ngai, Law & Wat 2008, p. 549). From this observation, their research questions led them to analyse critical success factors by countries/regions, and to categorise factors into: organisation-related, vendor-related, and country-related. The first two categories were found to be generally relevant. However, the country-related factors extend from local functional requirements that cannot be avoided, and must therefore be managed. They astutely noted that, 'It is expected that organizations that do not manage all the CSFs well will incur failure in ERP implementation.' (Ngai, Law & Wat 2008, p. 560), and that, 'Some of them, in fact, can be applied to the development of IS/IT projects in general' (Ngai, Law & Wat 2008, p. 557). The current research concurs, and applies widely researched ERP critical success factors to information systems (IS) that produce information product.

Osman and Sahraoui (2019) reviewed a selection of 44 critical success factors from a requirements engineering perspective. They pre-suppose a set of requirement and project management processes, and model the relationship/applicability of 10 critical success factors as inputs that support the processes. The current research notes the view, and example, of how critical success factors may support project management processes.

Rabaa'i (2009), Rabaa'i, Bandara and Gable (2009) and Rabaa'i and Gammack (2016),

in a series of papers focused on the adoption of ERP systems in the university and higher education context, firstly identified 12 critical success factors by literature review; followed by descriptive case studies at the Queensland University of Technology (QUT), to provide a rich description of ERP adoption in higher education. They found that, 'One general feature of research on CSFs for ERPs is that case studies are necessarily localized and context dependent, and not all factors will apply to all organisations.' (Rabaa'i & Gammack 2016, p. 47). Furthermore, the current research notes the organisational interest in measuring impacts of information systems:

> QUT, like many other organisations, conducts no systematic evaluation of their systems, but recognise the value of this in general. Comments from the business managers of various applications confirmed that if a "well-defined approach" existed they would be keen to measure impacts. They tended to assume that if they didn't "hear complaints from (users)" the system was working well. (Rabaa'i & Gammack 2016, p. 57)

Rabaa'i and AlJamal (2015) published empirical research on ERP implementations, critical success factors, and organisation success in Jordan, as a developing country context. Public and private organisational contexts were compared. The survey, n = 116, included 62 public sector respondents from 28 organisations, and 54 private sector respondents from 20 organisations. Participants included project managers and team members. The survey included 9 items of perceived success, expected ERP benefits, such as improved business processes (the only statistically significant difference recorded), and increased customers' satisfaction. They found no significant difference in overall implementation success between the public sector and private sector in this study. 'Around 39% viewed the implementation as successful, 31% as fairly successful and 30% as unsuccessful' (Rabaa'i & AlJamal 2015, p. 92). Only 11% completed implementation on-time, and less than 9% completed within budget. In agreement with other studies in developing countries, the *excessive customisation* and *lack of fit* failure factors were seen to contribute to the low success rate, and low realised benefits. In addition, low ease of use was reported, and poor performance in the following use-related factors were also seen to negatively affect success: *empowered team members*, *effective communication*, *user involvement*, and *training*.

Ravasan and Mansouri (2014) dynamically modelled ERP implementation failure factors using Fuzzy Cognitive Maps (FCM) in an Iran context. They identified 23 failure factors by literature review. The model was then configured using the opinion of a heterogeneous

panel of experts, 10 people in size. They stated that simultaneous contribution of failure factors on the outcomes can be modelled using FCM, and that the model considered four modes of failure. That is, under performance in some factors may only cause partial mission failure, for example, a percentage over budget. However, as more sources of failure contribute, the likelihood and failure mode of mission failure increases, until complete failure is experienced. Limitations of the research were stated as being 'by no means comprehensive enough to address all issues related to ERP failure factors' (Ravasan & Mansouri 2014, p. 46), and the characteristics of a context are modelled, thus the ability to generalise is limited. The current research notes the failure factors, and the idea of simultaneous contribution of failure factors on outcomes. This appears to be an interesting area of research, however further consideration is beyond the scope of the current research.

Saygili, Ozturkoglu and Kocakulah (2017) researched critical success factors in ERP applications from the perspective of end users. The study was motivated by the fact that, 'end-users play a critical role in the success and quality of ERP applications at every stage' (Saygili, Ozturkoglu & Kocakulah 2017, p. 59). A set of 48 factors was selected by frequency reported in the 13 most cited papers found. The manufacturing industry in Turkey provided the context for a survey, n = 128 completed responses, from 21 organisations, and 14 departments. The survey asked users, excluding IT managers and senior managers, to rate which factors they considered most important to success. Following confirmatory factor analysis, they noted that end users did not identify *minimal customisation* as an important factor, and posit the interdependence of users preferring customisation rather than having to change their own processes. Overall, the results showed that users confirmed the importance of the factors they had awareness of, they were able to identify 29/48 factors as important, and approximately 70% of the factors confirmed as important related to organisational, cultural, and behavioural aspects. The current research notes the method of factor selection, this source of factors, and the importance and valuable contribution of users at every stage of information product delivery.

Seth, Goyal and Kiran (2015) proposed a model for successful supply chain management information systems. The automotive industry in India provided the context. Enterprise Resource Planning (ERP) focuses on integrating the information flow, and business processes, within the organisation, and then extends to trading partners. Extending outside the organisation, Customer Relationship Management (CRM) integrates the information of customers, and Supply Chain Management (SCM) integrates the information of goods

and services, raw materials, product delivery, and activities upstream and downstream of the organisation. Note that SCM is often a module of ERP systems (Seth, Goyal & Kiran 2015; Shaul & Tauber 2013). As such, Seth, Goyal and Kiran (2015) combined available ERP critical success factors, and sought expert opinion on the factors. They conducted a survey testing 18 factors, n = 127 responses. Following statistical analyses, the conceptual model was updated, Figure 2.9 and Figure 2.10, it is clear that many of the already proven information system critical success factors are supported, and that some factors are more precisely stated, for example *data security*. However, not all hypotheses were supported, and a contributing reason may be that the study was limited to responses from only executives of two automotive industry organisations, and their suppliers. The current research notes that, once again, empirical study shows that not all factors are supported by all respondents, in all contexts.

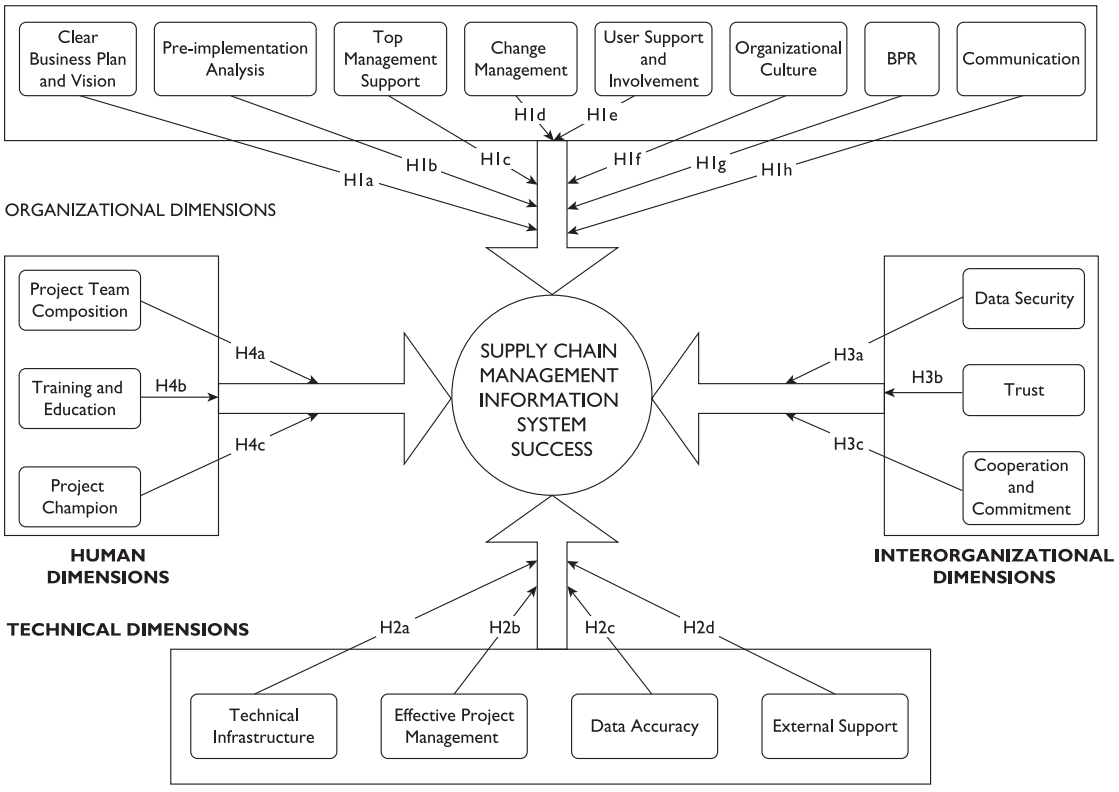

Figure 2.9: SCM IS Success Model (Seth, Goyal & Kiran 2015, p. 255)

Shaul and Tauber (2013) reviewed and performed mapping of ERP critical success factor literature from 1999 to early 2010. Their initial search yielded 341 articles, and 179 articles were listed in the appendix as critical success factor studies of ERP systems, along with the dimensional mapping of each study, for example: Study A – Organizational, Cultural, Vendor. Their review focused on providing a qualitative summary of research directions over the decade long time period, and included a listing of 94 critical success factors. The

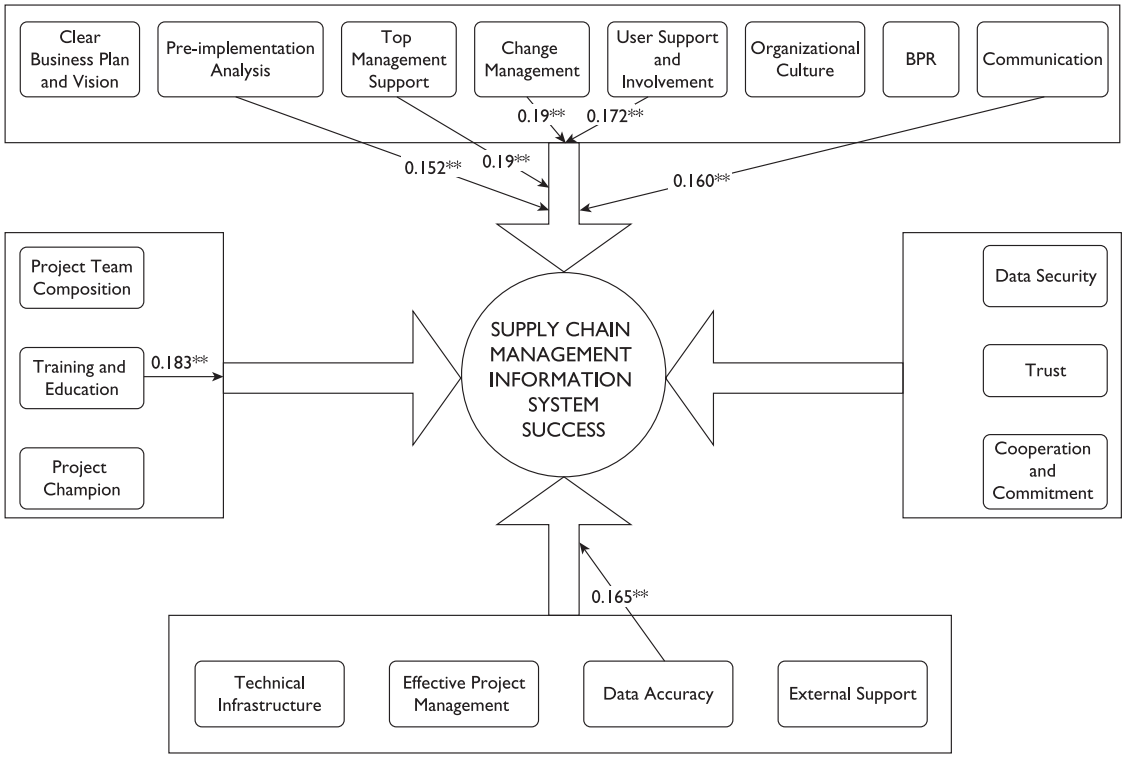

Figure 2.10: SCM IS Success Model with Result of Regression - Showing β Coefficients - **Only Significant Relationships Shown (Seth, Goyal & Kiran 2015, p. 257)

current research notes that, another decade further along in 2024, a manual search of Semantic Scholar using the search query *erp critical success factors* returns over 50,000 initial results. Furthermore, it is evident that the core ideas have continued to evolve and be updated through practice and research.

Shukor, Sheikhi and Nashir (2020) considered the issues and trends for ERP adaptation in the Agricultural industry in Malaysia as context. Their paper highlights again the challenges faced by developing countries wishing to improve their operations through the use of information technology. So significant is the lack of fit between packaged solutions and the context that it is viewed as 'adaptation' instead of 'adoption' - although it is possible that the word choice was an issue of language translation, it serves to highlight the point. The paper's top recommendation, rightly or wrongly, is to concentrate on finding software that is a functional fit, or can be reasonably adapted to fit the company. The current research notes the critical success factors of *fit*, and *minimum customisation* are observable here.

Finally, many of the papers reviewed in this section have cited project management and a project manager as critical success factors, often with implicit expectations of what

project management is, and what a project manager does; and regularly with conflicting or ambiguous descriptions. Explicit descriptions include the critical success factors of: *scope*, *cost*, and *time*; and certain management paradigms show an obsession with planning documents that in themselves were not found to be critical success factors. A project manager is a manager with a specific set of skills and competencies. The current research has already argued that the manager role, when the role is needed and relevant in a specific context, performs some, or all, of the management function of information delivery. In the critical success factor management paradigm, the function achieves successful delivery by focusing efforts on the critical success factors relevant to the specific context. Further, a case is made that the function should manage information product to maximise value. The current research recognises that the project manager role, and more specifically project management skills and competencies, are critical success factors with literature support, and therefore aims to support the function with a useful conceptual framework as presented by the Conceptual Framework in section 4.1.

2.6 Review of Methodology

Thiel (2014, p. 2) described engineering as 'the application of science to realistic systems which benefit humankind', and engineering research as research that is 'directed toward the practical application of science to products, services and infrastructure'. The current research applies the discipline of engineering, and the scientific method of inquiry and conceptual framework development, to the realistic systems of engineering management and information processing, and ultimately to the delivery of information product to professional engineers and engineering management to provide societal benefit.

Elsbach and van Knippenberg (2020, p. 1277) argued that 'integrative literature reviews are among the most useful vehicles for advancing knowledge and furthering research in a topic domain'. Indeed, several examples of integrative literature reviews were given that have become highly cited, with over 700 Google Scholar reported citations each, and were therefore considered to be high-impact literature contributing significantly to their fields. They argued that management research can be viewed as answering research questions in the management field, where individual studies provide pieces of the puzzle, and integrative work complements primary empirical research to provide understanding that aids in bringing the pieces together to solve the puzzle. The current

research works to answer the Research Question in section 1.3, and to advance the topic domain of information product management by integrating existing research to provide new conceptual understanding in line with the definition cited as:

> For example, Torraco (2005, p. 356) defines the integrative literature review as '... a form of research that reviews, critiques, and synthesizes representative literature on a topic in an integrated way such that new frameworks and perspectives on the topic are generated.' (Elsbach & van Knippenberg 2020, p. 1278)

Elsbach and van Knippenberg (2020), further, described integrative literature reviews as a distinct form of research in their own right, a form that generates novel results directly from broad literature review that allows concepts to emerge, such as a new conceptual framework, through critique and integration of existing literature that goes beyond simply describing the body of evidence. Additionally, an integrative literature review contains a methodology section that describes the systematic approach used, including why and how literature was selected, to enable replication of the review. The current research is an integrative literature review consistent with the above description, that critically analyses the research in the Literature Review of chapter 2, and documents the Methodology used in chapter 3, yielding the Conceptual Framework presented in the Results of chapter 4.

Elsbach and van Knippenberg (2020), finally, argued that integrative literature reviews have limitations that need to be acknowledged, primarily related to the available evidence in the studies reviewed, and need to strike a balance between generating new insight and treating the data provided by the underlying research papers. A clear evidence base provides support for generated concepts, while aspects with a relatively smaller evidence base create opportunities for future research work. The current research acknowledges these limitations, and aims to be clear and transparent, in particular about the empirical evidence supporting a concept. Where further work is indicated this is described in the Conclusions and Further Work of chapter 5.

Torraco (2016, p. 404) described the integrative literature review as 'research that uses existing literature to create new knowledge', and extended on how this is done through synthesis. It was identified, from their review of the literature on integrative literature reviews, that a review can: review, critique, and synthesise the literature; reconceptualise a topic; and answer research questions on the topic. They found that conceptual structuring of the review provided clarity on how the concepts come together, and that the creative

activity of synthesis stems from the author's deep understanding of the topic, and the relevant literature, to define a new conceptual model and to create the relationships between the ideas. The resulting conceptual model may range from relatively definitive to highly speculative in nature. They argued that the purpose, and perspective (neutral versus taking a point of view), should be explicitly stated by authors of integrative literature reviews. The current research works to answer the Research Question in section 1.3 by reconceptualising the relationships between the concepts of value, information product, and the critical success factors to synthesise the Information Product Success Model in section 4.2. It explicitly takes, and thereby provides, a point of view perspective. Conceptual structuring is used to organise this dissertation, and to logically progress the literature review and the synthesis of concepts and the relationships between them.

Russell (2005), similarly, provided an overview of the integrative literature review from the field of medical research. Notably, the term *systematic reviews* were also called *evidence summaries* and *integrative review*s in this paper, demonstrating variations in terminology use and research focus across research fields. In addition, literature reviews were argued to include: evaluating the body and strength of existing evidence; identifying areas in need of future research; and bridging between research areas. The current research takes note of the variation in use of terminology, and therefore reviews, and ultimately applies, reporting requirements for systematic literature reviews to systemise and strengthen the current integrative literature review. The current research bridges between the research areas of: value, information product, and critical success factors in delivery.

Page et al. (2021a,b) published the updated Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA 2020) checklist and guidelines. While originating from, and primarily designed for, health interventions in the medical field; as indicated by the over 55,000 citations to date (source: Google Scholar), these reporting guidelines have been widely adopted, and are being applied in engineering related fields of research (Albhirat et al. 2024; Bártová, Bína & Váchová 2022; Qiu et al. 2023). However, in a similar vein to that noted by Budgen et al. (2018), the current research notes that the application of PRISMA 2020 in engineering research and related fields is still improving. The PRISMA 2020 checklist includes 27 items, plus sub-items. The current research adopts this emerging practice in section 3.2, and reports according to the PRISMA 2020 checklist and guidelines, up to and including the declared limitations of the current research, to systemise and strengthen the current integrative literature review. The completed PRISMA

2020 Checklist (Page et al. 2021a) is presented in Table D.1 of appendix D.

Budgen et al. (2018) provided lessons in reporting systematic reviews in the information technology field. Their 12 lessons, and associated checklist of 8 items, are generally in agreement with the PRISMA 2020 checklist and reporting guidelines, however the PRISMA 2020 checklist is more comprehensive and contains additional items. Budgen et al. (2018) argued that the use of systematic reviews and reporting in this way is relatively new in the field, and in need of improvement for establishing provenance of review findings. Nevertheless, systematic reviews have started to become widely adopted in the field. They further argued for improved reporting of synthesis methods, and provided a list of the forms of synthesis that they identified in their review of systematic reviews, as shown in Table 2.3. It can be seen that the relatively well-used forms of synthesis in the field were: thematic analysis (14 uses), narrative (9 uses), and vote counting (9 uses). The current research uses integrative narrative synthesis to logically argue for combination of concepts, and content analysis to indicate that there is broad literature support for the listed critical success factors. Where no support or negative effect is found, any effort in this area is considered waste. This synthesis approach works well with critical success factors as a management paradigm, where critical success factors are those areas that performance is required to achieve the organisational goals. This paradigm uses a performance-based approach, hence the size of effect is not necessarily needed a priori. Knowing which areas need to be measured for performance, and the mechanisms that have effect in driving that performance, is already useful. Management adjustments then proceed based on actual measurement against target performance, in the specific context a posteriori.

Table 2.3: Forms of Synthesis Used, adapted from Budgen et al. (2018)

Form of Synthesis	Usage Count
Thematic Analysis	14
Narrative	9
Vote Counting	9
None Identifiable	4
Meta-Analysis	2
Grounded Theory	1
Case Survey	1
Content Analysis	1

Snyder (2019) provided an overview and guidelines for literature review as a research methodology. They summarised and contrasted the systematic and integrative approaches already discussed, as shown in Table 2.4. The current research combines the approaches, taking care to apply each approach for its specified contributions: an integrative literature review that uses systematic search strategies and reporting to strengthen the evidential support, and provenance, for conceptual framework generation, as shown in the current research methodological approach of Table 3.1: Literature Review Approach, adapted from Snyder (2019).

Table 2.4: Approaches to Literature Reviews (Snyder 2019) - Abridged

Approach	Systematic	Integrative
Typical purpose	Synthesise and compare evidence	Critique and synthesise theory
Search strategy	Systematic	Usually not systematic
Analysis & evaluation	Quantitative	Qualitative
Examples of contribution	Inform policy and practice	Theoretical model or framework

Wang (1998) developed and reported "A Product Perspective on Total Data Quality Management" using a theoretically-grounded form of theory development that introduced

foundational theoretical concepts which may be utilised in differing operational environments. The power of the theory developed is described as being derived from the combination of existing research from multiple disciplines, and broad practical experiences from a range of organisations. Similar to the current research, this approach produces practically implementable theory that may be supported or refuted by further empirical evidence.

Ali and Miller (2017) performed a systematic literature review of ERP system implementation in large enterprises. The methodology used followed a structured approach that reviewed and classified the literature using content analysis to identify patterns and critical success factors. White and Marsh (2006) published guidance on the methodology of content analysis. The current research adopts the content analysis methodology to extract critical success factor data as described in section 3.7.

Amid, Moalagh and Ravasan (2012) used Robust Exploratory Factor Analysis (Robust EFA) to classify failure factors identified through literature review and semi-structured interviews. Each factor is assigned to a single classification. Robust EFA generates classifications that are useful to research and understanding. The meaning and name of each classification is subject to interpretation, so expert opinion was used to name the classifications. The current research is especially interested in the practical application of critical success factors and does not consider such classification to be straightforward to directly apply in most practical contexts of information product delivery, so does not use the method to generate results.

Coşkun et al. (2022) published a systematic literature mapping (SLM) of ERP failure factors. With a team of five researchers, they manually coded 806 items in 72 primary studies that were selected by authors voting against set inclusion/exclusion criteria, from a candidate pool of 353 papers. They then manually extracted, mapped, performed qualitative coding, and presented a range of analyses based on the data. They note that the work required was difficult work, and the current researcher agrees. Clearly this method does not scale well. The current research is resourced by only one researcher, therefore other ways of working are required. Thus, the current research employs Bibliographic Coupling as described in section 3.6 to select 40 papers from a corpus of over 50,000 papers, manually applies quality criteria to yield 28 included papers, and has developed semi-automated scripts, that are driven by manually crafted translation rules, to extract data.

Coşkun et al. (2022), further, found that only 20 of the 72 articles in their pool ranked, or prioritised, factors. An array of ranking schemes was used. Moreover, they found that some articles had multiple ranking schemes within the one article for a range of reasons. Their systematic literature mapping (SLM) utilised a form of vote counting synthesis, where the top 5 factors, from each of the studies that provided ranking, were counted to rank 17 factor categories, from the highest total rank to the lowest total rank. The top factor category, unsurprisingly, presented as the catchall *project management problems*, even after a number of caveats had been applied that removed what might have been thought of as falling under the project management category. It becomes evident that this approach is not a clear success, and it misses many factors that have literature support in particular contexts. The current research found similar characteristics in the current data. However, with more conceptual development, it was determined that all factors with broad literature support should be included and made available to practitioners in a usable form.

Finney and Corbett (2007) used a content analysis methodology to identify critical success factors from 45/70 papers, following reviews of the paper abstracts. They used an inductive coding technique, open coding, to name and categorise critical success factors by the meaning of the words in the paper under analysis, resulting in 26 categories of critical success factors. For naming, they note that 'Strauss and Corbin (1990a) also warn, however, of the dangers of using borrowed terms and suggest that a researcher be precise about the meanings of the terms' (Finney & Corbett 2007, p. 334). Further, a frequency analysis is presented in their paper. However, care must be taken here, because the frequency represents how often a factor has been researched and therefore cited in the reviewed literature, rather than representing its criticality to success. Their research, not unlike the current research, included a large portion of secondary research papers, resulting in a key limitation, 'occurrence of duplication in the frequency analysis of the success factors' (Finney & Corbett 2007, p. 329). The current research avoids this limitation by translating all identified factors, and demonstrating broad literature support for each factor.

> Wood and Caldas (2001) argued that the implementation process is one that must be regarded as a complex process that takes a non-reductionist approach; therefore, they recommend that future research should place emphasis on the implementation process from a holistic perspective. (Finney & Corbett 2007, p. 343)

Chapter 3

Methodology

The aim of this chapter is to select suitable methodological tools, and to describe the academic rigour and methods applied to answer the research question. Literature review as a research methodology is presented, and the research approach articulated. The quality criteria applied to select papers for the research are detailed, along with a full search log, the data formats, and the software tools. Finally, the bibliographic coupling and content analysis methods are described.

3.1 Literature Review as a Research Methodology

To answer the Research Question in section 1.3 suitable tools are required. *Literature review as a research methodology* is a methodological tool that is able to assess the body of knowledge and evidence in one or more fields (Snyder 2019). This tool is able to bring to bear theory and evidence that already exist in the literature but have remained fragmented across disciplines and isolated within disciplines, to enable synthesis of new theoretical models and to assess the weight of the evidence (Snyder 2019).

A perspective, partly brought by the researcher and partly brought by the research selected, is expected and required to synthesise new theoretical models (Snyder 2019). Additionally, a method that incorporates methodological guidelines and academic rigour is required to guard against cherry-picking and confirmation bias, and to provide a solid foundation for theoretical development and evidence-based conclusions. The flowchart shown in Figure 3.1

provides an overview of how literature review as a research methodology is performed by the current research to generate results, and the details are covered in the sections that follow.

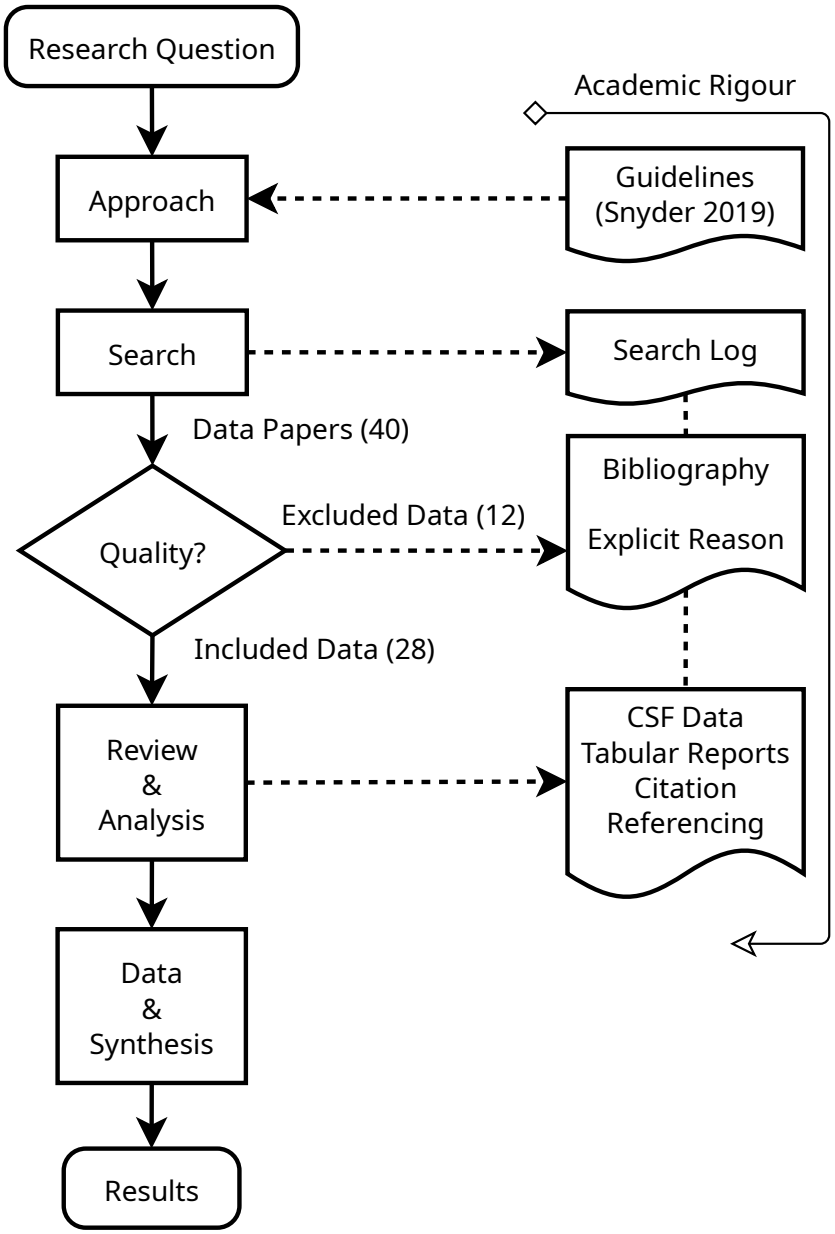

Figure 3.1: Research Method Overview Flowchart, adapted from PRISMA 2020 flow diagram Page et al. (2021a)

3.2 Academic Rigour

Academic rigour in search, selection, citation, referencing, and collating the ideas of others underpins the conceptual framework synthesis and argument in the current research. This

research aims to present a logical argument to the reader that is supported by the empirical evidence and research findings in the extant academic literature.

Research findings that are not transparent and repeatable have a risk of being, justifiably, criticised and the findings, either partially or in whole, not being accepted by practitioners and researchers. This risk is captured in the Risk Assessment of appendix B. The controls are to maintain and report a full search log as evidence of academic rigour, and to apply multiple techniques in seeking and synthesising empirical evidence.

As depicted in Figure 3.1, the academic rigour applied is to: follow the guidelines and Approach provided by Snyder (2019) as described in section 3.3; develop and use Quality Criteria for selection of research data and evidence as described in section 3.4; maintain and report a full search log, search log data, and resulting bibliography data as described in section 3.5; generate and provide tabular reports from the data throughout this dissertation; and perform in-text citation and referencing according to the *University of Southern Queensland Harvard AGPS Referencing Guide* (University of Southern Queensland 2020).

Furthermore, academic rigour in reporting is supported by reporting according to the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA 2020) checklist and guidelines (Page et al. 2021a,b). As discussed in the literature review in section 2.6 this is an emerging practice in engineering research and in integrative literature reviews. The completed PRISMA 2020 Checklist (Page et al. 2021a) is presented in Table D.1 of appendix D.

3.3 Approach

The current research is an *integrative literature review systematically performed and reported*, as summarised in Table 3.1. That is, the current research approach is an integrative literature review that follows a systematic search strategy and reporting, with systematic evidence selection, applying a qualitative synthesis of the evidence to generate a conceptual framework with evidential support that has a high degree of data provenance.

Table 3.1: Literature Review Approach, adapted from Snyder (2019)

Approach	Systematic	Integrative	Current Research
Typical purpose	Synthesise and compare evidence	Critique and synthesise theory	Critique and synthesise theory
Search strategy	Systematic	Usually not systematic	Systematically performed & reported
Analysis & evaluation	Quantitative	Qualitative	Qualitative
Examples of contribution	Inform policy and practice	Theoretical model or framework	Conceptual framework with evidential support to inform policy and practice

The *integrative approach* is selected for its suitability to conceptual model synthesis, analysis, and critique (Torraco 2016). Indeed, it may be considered imperative that an integrative review result in new theoretical model development and advancement of knowledge (Snyder 2019). The main risk of the approach is that it results in descriptive summaries, instead of transparent integrative model development. Therefore, in this research, the approach employs a qualitative analysis and evaluation with academic rigour.

The approach uses a systematic search strategy since the goal is to review literature that is logically related rather than a systematic review of the literature in an area. The search strategy is required to be systematic, reducing bias and increasing transparency. The Search Log & Bibliography Data in section 3.5 and the Bibliographic Coupling search described in section 3.6 are employed to collect data for the Content Analysis in section 3.7 leading to the Results in chapter 4.

The conceptual model synthesised in this research, using the integrative approach, is used to set the stage for understanding and the frame of reference in which critical success factors are applied. The results of this may be used to inform policy and practice updates.

3.4 Quality Criteria

Quality criteria for the selection of research *data and evidence* are set, as per Table 3.2, to enable the current research to build upon the most suitable and available information. Note that *theory* may be selected and presented from university publishers, books, textbooks, and industry standards; however the aim is to support the argument with data and empirical evidence that is uncovered and synthesised during the current research. The quality criteria are recorded, by the single current researcher working independently, against each entry of the Coded Bibliography Data in appendix F to provide the transparency and evidence of Academic Rigour as per section 3.2.

Table 3.2: Quality Criteria for Research Data and Evidence

Included	Excluded (explicit reason)
Peer Reviewed Journal Articles	Book (includes book chapters)
Peer Reviewed Conference Proceedings	Thesis/Dissertation
-	Notice of Retraction
Full Text Available to Researcher	Full Text Not Available to Researcher
English Language	Not English Language
Published Period as define by Approach	-
Relevance as define by Approach	Not Relevant

Note that the reasons for exclusion of a search result are explicitly recorded, along with an explicit 'Excluded' quality value. Further, the Scimago Journal Rank (SJR H-Index) is recorded as a quality indicator only, it should be noted that the published index value changes over time.

A discussion of the quality criteria follows. Peer reviewed papers are generally considered to be the most rigorous publication type (Thiel 2014, p. 37), and thus this is set as the primary quality criterion for literature providing data and evidence. Any paper that is found to have a notice of retraction issued by the journal or publisher is excluded. On the occasions when the full text of the search result is not available to the researcher, this is explicitly stated. The English language criterion is a limitation of the researcher. The published period is defined by each search approach, for example, the bibliographic

coupling search tool Connected Papers applies an automatic published period. A search approach seeking the latest research necessarily limits and sorts results by recency, while seminal publications may have been published in any period in the past and require a matching search approach. Relevance is also defined by the approach, an approach seeking to define a term or concept may only consider results that assist in defining that term or concept as relevant. In cases where the result is included the relevance is recorded, in cases where the result is not relevant this is recorded, along with an explicit 'Excluded' quality value.

3.5 Search Log & Bibliography Data

To support the Academic Rigour required by section 3.2, a full search log is reported in Table 3.3. The search log data, and the resulting bibliography data, are maintained as `.bib` files in the BibLaTeX file format as described in the `biblatex` package manual (Kime, Wemheuer & Lehman 2022). The files are standardised using BibTool software and the configuration in appendix J. The files are directly included in this dissertation as the Search Log Data in appendix E and the Coded Bibliography Data in appendix F. The full search log reported in Table 3.3 is generated from the data, with the help of the bibliography helper python script `bibhelper.py` included as Bibliography Helper Script in appendix G.

The search log fields are defined for each entry as:

- SearchLogKey (unique, surrogate key, format e.g. `SL002`)
- Approach (taken to develop the search, e.g. `Define` seeks definitions)
- Query (exact search query used, e.g. `"Information as a Product"`)
- SortedBy (sort type used, e.g. `Relevance`)
- LimitedBy (results limited by, e.g. `Any type, Top 10`)
- Date (of search, e.g. `2024-03-17`)
- Source (source or database used, e.g. `Google Scholar`)
- TotalResultCount (of the search, e.g. `2,270`)

The Coded Bibliography Data files are used for in-text citation, to build the reference list for the References, and to perform and report numerical analyses. Citation and referencing, along with document typesetting, is handled by LaTeX software using the *Harvard AGPS BibLaTeX Style* implementation by Kromhout (2024). The BibLaTeX format is extensible, and in addition to the typical fields (e.g. Author, Date, Title, Journal etc.), the following fields are defined to code each entry for the purposes of this research:

- SearchLogKey (key to the search log entry that produced this result e.g. `SL002`)
- SearchLogOrder (the order where this result appeared in the search)
- Relevance (whether and how this result is relevant to the current research)
- Field (research field)
- Quality (indication of the journal/paper quality, 'Excluded' indicator)

Table 3.3: Full Search Log

Search Log Key	Approach	Query	Sorted By	Limited By	Date	Source	Total Result Count
SL0001	Foundational Knowledge, Research Proposal	ENG4110: Engineering Research Methodology	Relevance	Course	2023-08-09	University of Southern Queensland	15
SL0002	Define, Significance	"Information as a Product"	Relevance	Any type, Top 10	2024-03-17	Google Scholar	2,270
SL0003	Define, Significance	"Sustainable Asset Management"	Relevance	Any type, Top 10	2024-03-18	Google Scholar	2,910
SL0004	Methodology, Bibliographic Coupling	"Bibliographic Coupling" peer review	Relevance	Any type, Top 2	2024-04-13	Google Scholar	17,000
SL0005	Data Papers from Bibliographic Coupling	ERP Issues and Challenges: A Research Synthesis	Bibliographic Coupling Strength	Automatic	2024-04-13	Connected Papers, Semantic Scholar	40
SL0006	Very similar research exists?	"Engineering Information Product Delivery with Critical Success Factors for Maximum Value"	Relevance	Any type	2024-05-26	Scopus	0
SL0007	Very similar research exists?	"Engineering Information Product Delivery with Critical Success Factors for Maximum Value"	Relevance	Any type	2024-05-26	Google Scholar	0

Table 3.3: *continued from previous page*

Search Log Key	Approach	Query	Sorted By	Limited By	Date	Source	Total Result Count
SL0008	Very similar research exists?	"Engineering Information Product Delivery with Critical Success Factors for Maximum Value"	Relevance	Any type	2024-05-26	ScienceDirect	0
SL0009	Very similar research exists?	"Engineering Information Product Delivery with Critical Success Factors for Maximum Value"	Relevance	Any type	2024-05-26	Semantic Scholar	0
SL0010	Very similar research exists?	"Engineering Information Product Delivery with Critical Success Factors for Maximum Value"	Relevance	Any type	2024-05-26	UniSQ Library Search	0
SL0011	Methodology, Reporting	reporting integrative literature reviews	Relevance	Any type, Top 4	2024-06-08	Google Scholar	736,000
SL0012	Methodology, Reporting	reporting systematic reviews	Relevance	Any type, Top 3	2024-06-19	Google Scholar	5,500,000
SL0013	Methodology, Reporting	engineering research PRISMA	Relevance	Any type, Top 3	2024-06-23	Google Scholar	68,300

Table 3.3: *continued from previous page*

Search Log Key	Approach	Query	Sorted By	Limited By	Date	Source	Total Result Count
SL0014	Foundational Knowledge	ENG3003: Engineering Management	Relevance	Course	2024-01-26	University of Southern Queensland	1
SL0015	Foundational Knowledge	MGT3203: Project Management Processes	Relevance	Course	2023-01-27	University of Southern Queensland	2
SL0016	Relevant Theory	DeLone and McLean IS Success Model	Relevance	Any type, Top 1	2024-08-20	Google Scholar	38,700
SL0017	Relevant Theory	Information Systems Success: The Quest for the Dependent Variable	Relevance	Any type, Top 1	2024-08-21	Google Scholar	263,000
SL0018	Methodology	systematic content analysis methodology	Relevance	Any type, Top 1	2024-09-08	Google Scholar	6,330,000

3.6 Bibliographic Coupling

As part of the *integrative approach* to literature review as a research methodology, the Connected Papers search and visualisation tool is utilised to select data papers. Connected Papers uses bibliographic coupling to propose similar papers to a researcher supplied *origin paper*, as shown in Figure 3.2. The analysis is performed over the Semantic Scholar academic database (Connected Papers 2024).

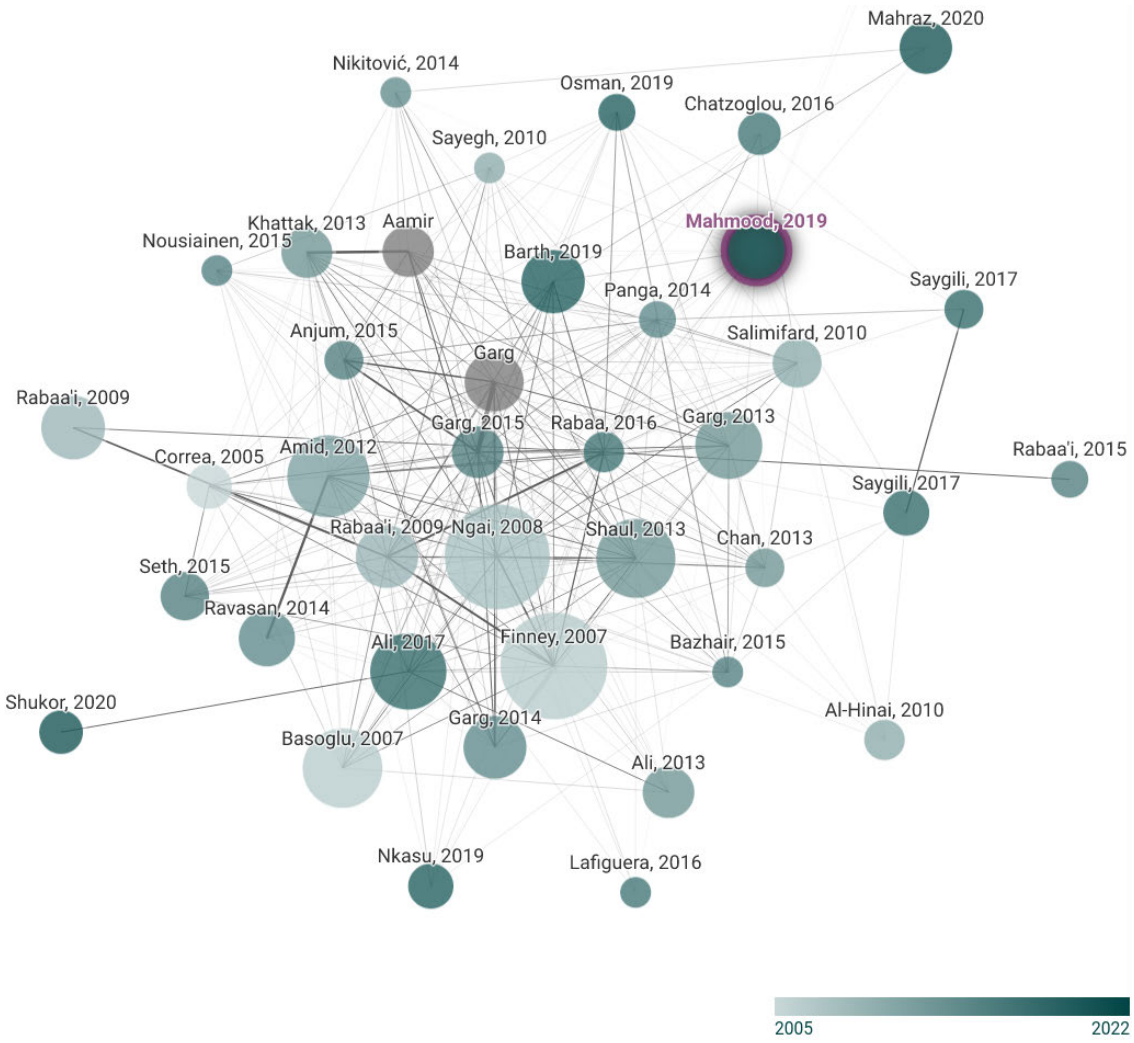

Figure 3.2: Bibliographically Coupled Graph of Papers using the Mahmood, AZ Khan and Bokhari (2020) paper, aka 'Mahmood, 2019' as the Origin Paper

Note that some academic databases, notably Semantic Scholar and Connected Papers, cite the Mahmood, AZ Khan and Bokhari (2020) paper by the *article* publication date (2019) instead of the *issue* publication date (2020), it is the same article and does not appear to affect the bibliographic coupling results since the title of the article is utilised: "ERP Issues and Challenges: A Research Synthesis".

The circular nodes in Figure 3.2 each represent a paper and are arranged by similarity. The node size is relative to the number of citations, and the colour gradient represents the published year, while the connecting lines represent the shortest relationship path between papers (Connected Papers 2024).

The Semantic Scholar database, at the time of writing, contains over 217 million papers in the scientific fields (Semantic Scholar 2024). Semantic Scholar describes itself as an artificial intelligence (AI)-driven search and discovery tool for academic research (Semantic Scholar 2024). However, bibliographic coupling analysis has been known, and indeed used, for some time (Martyn 1964; Weinberg 1974).

Bibliographic coupling is known to represent the probability of a relationship between two papers by analysing the bibliographic entries that two papers have in common (Martyn 1964). It is also known that literature review and theoretical papers couple strongly (Weinberg 1974), a likely benefit to the current research which is seeking a broad view of the literature and to discover the state of theory development. In sufficiently large datasets, a search using bibliographic coupling trades the fallibilities and biases of keyword search and relevance sorting, for the fallibilities and biases of citation patterns (Weinberg 1974). Again, this is a benefit to the current research as it limits and reduces the current researcher's biases that would be introduced by keyword selection and subsequent papers selection.

Connected Papers state that the tool works by analysing 'an order of ~50,000 papers', using bibliographic coupling and co-citation, and presents the few dozen papers with the strongest probability of being similar to the origin paper (Connected Papers 2024). The ~50,000 papers statement appears to be indicative of the number of papers that are typically analysed using the cited underlying Semantic Scholar literature graph which contains the properties of the papers in the academic database (i.e. titles, authors, citations, scientific concepts), properties which are added to the literature graph by way of natural language processing of the papers. Indeed, a manual search of Semantic Scholar using the search query *erp critical success factors* returned 50,300 results, confirming the order of the number of papers that are present in this vast area of literature. Finally, co-citation grants similarity strength to papers that are cited together, and therefore, co-citation may be considered to provide similar, possibly complimentary, results to bibliographic coupling (Weinberg 1974).

Due to recently increased data availability and computational capability, the analysis method provided by Connected Papers is now more accessible than ever before, and arguably exceeds what a typical research team can reasonably perform using manual analysis in terms of paper numbers analysed and finding the most relevant papers. However, as Martyn (1964) warns, one should not place too much emphasis on the unit value of the relationship strengths.

Taking the above into account, entering the title of the Mahmood, AZ Khan and Bokhari (2020) literature review paper "ERP Issues and Challenges: A Research Synthesis" into Connected Papers as the origin paper, yields the resulting graph as shown in Figure 3.2. The bibliographic coupling analysis results were found to be highly relevant to the current research. The results also provided a different set of papers to review than would a manual trace of the references in the origin paper reference list, which would result in a citation tree.

Published period is another point of difference. A manual citation trace from the origin paper is only able to lead to prior papers, so that secondary steps and tools are required to move forwards in time, while bibliographic coupling is able to automatically include new papers in the results, which is a benefit to the present study. The Mahmood, AZ Khan and Bokhari (2020) paper is stated to cover the published period 1999 to 2018, while Figure 3.2 shows that the results cover a period from 2005 to 2022.

Exporting the bibliographically coupled search results to a .bib file provides a total of 40 papers, exclusive of the origin paper. Applying the Quality Criteria of section 3.4 for the selection of research data and evidence, yields 28 papers to be included for literature review and content analysis as summarised in Table 3.4. The Content Analysis method is detailed in section 3.7, while the journals included, papers included, and papers excluded are presented in Table 3.5, Table 3.6, and Table 3.7 respectively.

Table 3.4: Summary of Bibliographically Coupled Papers using the Mahmood, AZ Khan and Bokhari (2020) paper as the Origin Paper with Quality Criteria Applied

Description	Count
Total	40
Excluded	12
Included	**28**

Table 3.5: Journals Included from Bibliographically Coupled Papers using the Mahmood, AZ Khan and Bokhari (2020) paper as the Origin Paper with Quality Criteria Applied

Journal	Quality
2016 Federated Conference on Computer Science and Information Systems (FedCSIS)	Peer Reviewed Conference, SJR H-Index 17
ACM Computing Surveys	Peer Reviewed Journal, SJR H-Index 213
Benchmarking: An International Journal	Peer Reviewed Journal, SJR H-Index 20
Business Process Management Journal	Peer Reviewed Journal, SJR H-Index 95
Computers in Industry	Peer Reviewed Journal, SJR H-Index 129
Data & Knowledge Engineering	Peer Reviewed Journal, SJR H-Index 94
Engineering Management Reviews	Peer Reviewed Journal, SJR Not Indexed
European Journal of Computer Science Information Technology	Peer Reviewed Journal, SJR Not Indexed
Industrial Management & Data Systems	Peer Reviewed Journal, SJR H-Index 125
Information Systems	Peer Reviewed Journal, SJR H-Index 96
International Journal of Computer Applications	Peer Reviewed Journal, SJR Not Indexed
International Journal of Engineering Science Invention	Peer Reviewed Journal, SJR Not Indexed
International Journal of Enterprise Information Systems	Peer Reviewed Journal, SJR H-Index 27
International Journal of Intercultural Information Management	Peer Reviewed Journal, SJR Not Indexed
Journal of Enterprise Information Management	Peer Reviewed Journal, SJR H-Index 82

Table 3.5: *continued from previous page*

Journal	Quality
Journal of Theoretical and Applied Information Technology	Peer Reviewed Journal, SJR H-Index 39
Proceedings of the 20th Australasian Conference on Information Systems	Peer Reviewed Conference, SJR H-Index 9
Proceedings of the 54th Hawaii International Conference on System Sciences	Peer Reviewed Conference, SJR H-Index 98
Research Journal of Applied Sciences, Engineering and Technology	Peer Reviewed Journal, SJR H-Index 38
The Journal of High Technology Management Research	Peer Reviewed Journal, SJR H-Index 55
Third International Symposium on Innovation in Information & Communication Technology	Peer Reviewed Conference, SJR Not Indexed
Vision	Peer Reviewed Journal, SJR H-Index 24

Table 3.6: Papers Included from Bibliographically Coupled Papers using the Mahmood, AZ Khan and Bokhari (2020) paper as the Origin Paper with Quality Criteria Applied

Paper (cited in lit. review)	Quality
Ali and Miller (2017)	Peer Reviewed Journal, SJR H-Index 82
Amid, Moalagh and Ravasan (2012)	Peer Reviewed Journal, SJR H-Index 96
Anjum and S Khan (2015)	Peer Reviewed Journal, SJR H-Index 38
Barth and Koch (2019)	Peer Reviewed Journal, SJR H-Index 125
Basoglu, Daim and Kerimoglu (2007)	Peer Reviewed Journal, SJR H-Index 55
Bazhair and Sandhu (2015)	Peer Reviewed Journal, SJR Not Indexed
Chan (2013)	Peer Reviewed Journal, SJR Not Indexed
Chatzoglou, Chatzoudes and Apostolopoulou (2016)	Peer Reviewed Conference, SJR H-Index 17
Coşkun et al. (2022)	Peer Reviewed Journal, SJR H-Index 94
Finney and Corbett (2007)	Peer Reviewed Journal, SJR H-Index 95
P Garg and A Garg (2013)	Peer Reviewed Journal, SJR H-Index 95

Table 3.6: *continued from previous page*

Paper (cited in lit. review)	Quality
P Garg and Agarwal (2014)	Peer Reviewed Journal, SJR H-Index 82
P Garg and A Garg (2014)	Peer Reviewed Journal, SJR H-Index 82
P Garg and Chauhan (2015)	Peer Reviewed Journal, SJR H-Index 20
Huang et al. (2021)	Peer Reviewed Conference, SJR H-Index 98
Khattak et al. (2013)	Peer Reviewed Journal, SJR H-Index 27
Mahraz, Benabbou and Berrado (2020)	Peer Reviewed Journal, SJR H-Index 27
Ngai, Law and Wat (2008)	Peer Reviewed Journal, SJR H-Index 129
Osman and Sahraoui (2019)	Peer Reviewed Journal, SJR Not Indexed
Rabaa'i (2009)	Peer Reviewed Conference, SJR Not Indexed
Rabaa'i, Bandara and Gable (2009)	Peer Reviewed Conference, SJR H-Index 9
Rabaa'i and AlJamal (2015)	Peer Reviewed Journal, SJR Not Indexed
Rabaa'i and Gammack (2016)	Peer Reviewed Journal, SJR Not Indexed
Ravasan and Mansouri (2014)	Peer Reviewed Journal, SJR H-Index 27
Saygili, Ozturkoglu and Kocakulah (2017)	Peer Reviewed Journal, SJR H-Index 27
Seth, Goyal and Kiran (2015)	Peer Reviewed Journal, SJR H-Index 24
Shaul and Tauber (2013)	Peer Reviewed Journal, SJR H-Index 213
Shukor, Sheikhi and Nashir (2020)	Peer Reviewed Journal, SJR H-Index 39

Table 3.7: Excluded Results from Bibliographically Coupled Papers using the Mahmood, AZ Khan and Bokhari (2020) paper as the Origin Paper with Quality Criteria Applied

Bibliography Data Key (not cited)	Quality
AamirEtAl2012ExaminCriticSucces	Journal Appears Defunct, SJR Not Indexed, Full Text Not Available to Researcher, Excluded
Al-HinaiEtAl2011PreparPeopleManage	Book, Full Text Not Available to Researcher, Excluded
AliEtAl2013DecisiSupporSystem	Book, Full Text Not Available to Researcher, Excluded

Table 3.7: *continued from previous page*

Bibliography Data Key (not cited)	Quality
CorreaEtAl2005Meta-ASobreImplan	Not English Language, Excluded
Lafiguera2016BigBangVersus	Thesis, Excluded
Nikitović2014Upravlkriticcimben	Thesis, Not English Language, Excluded
Nkasu2019InvestEffectCritic	Full Text Not Available to Researcher, Excluded
Nousiainen2015ToiminKäyttOton	Not English Language, Excluded
Panga2014FactorInflueImplem	Thesis, Full Text Not Available to Researcher, Excluded
SalimifardEtAl2010NoticeRetracInvest	Notice of Retraction, Excluded
Sayegh2010FactorAffectImplem	Dissertation, Excluded
SaygiliEtAl2017ContemIssuesEnterp	Book, Excluded

3.7 Content Analysis

Content analysis is used by the current research to analyse Critical Success Factor (CSF) information from the data papers obtained via the Bibliographic Coupling method described in section 3.6. The content analysis process used is shown in Figure 3.3, and the methodology and methods used are reported in this section. In all cases in this dissertation, literary work, including adapted work, is shown for the purpose of criticism or review, either of the work shown or of another work, and the current research aims to make 'sufficient acknowledgement of the work' as per section 41 of the *Copyright Act 1968* of Australia - compilation date 14 October 2024 - which allows for 'fair dealing' that 'does not constitute an infringement of the copyright in the work if it is for the purpose of criticism or review'.

White and Marsh (2006) described content analysis as a research method that can be used by itself or together with other methods. They characterised content analysis as: 'a systematic, rigorous approach to analyzing documents obtained or generated in the course of research' (White & Marsh 2006, p. 22). The current research has developed a semi-automated Content Analysis Script `contentanalysis.py` listing I.1 of appendix I.

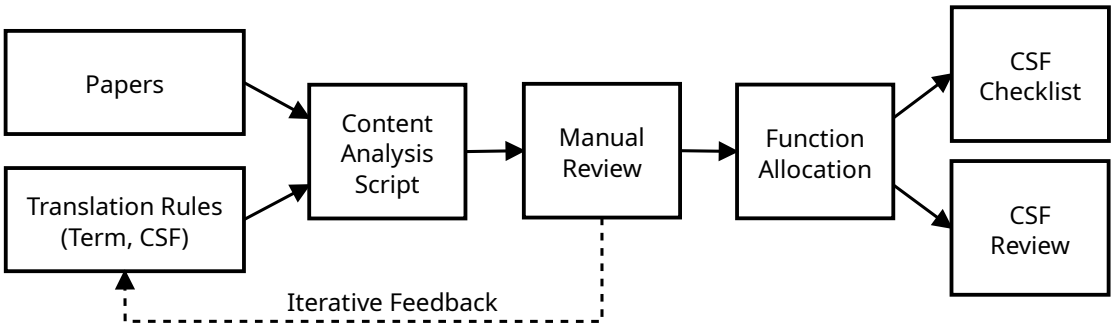

Figure 3.3: Content Analysis Process - Semi-Automated

Content analysis infers meaning from text (White & Marsh 2006). The rules of inference for the current research are captured in the Translation Rules File `TranslationRules.csv` listing I.2. Concepts are identified during the literature review, in this case critical success factors, and iteratively recorded in the Translation Rules File. The selected *sampling unit* is each *sentence* extracted from the data papers; this is determined by pragmatism (White & Marsh 2006). The *unit of analysis* is the *term* that is matched in the sentence; this is determined by the research question (White & Marsh 2006). Critical success factors are manually allocated to information product functions in the review working file. Finally, the Information Product CSF Checklist in section 4.3, and the Information Product CSF Review in appendix L, are automatically generated by the Content Analysis Script in appendix I with the help of the Bibliography Helper Script in appendix G, the LaTeX Helper Script in appendix H, and the Run Script in appendix K. The end-to-end information flow is processed automatically with each run of the Content Analysis Script `contentanalysis.py`. Thus, following the guidance of White and Marsh (2006, p. 34), the steps for qualitative content analysis are applied:

1. relevant sample text: data papers selected by Bibliographic Coupling;
2. unitise text: the text is unitised into sentences;
3. contextualise: extracting critical success factors from reviewed sample text;
4. inductive research question used: Research Question in section 1.3.

A functional description follows for the Content Analysis Script `contentanalysis.py` listing I.1 of appendix I. Referring to Figure 3.3, it can be seen that the Translation Rules File `TranslationRules.csv` in listing I.2 captures the concepts under investigation as Terms. These Terms are mapped to a uniform set of Critical Success Factors (CSFs).

The Content Analysis Script reads each of the included Papers, tokenises the Paper into sentences using natural language processing, and automatically finds explicit (exact) matches to the Terms, thus identifying the Critical Success Factor, Sentence, Paper, and Page number. This automation also reduces human error, such as passing over terms due to detection error or bias error. These matches are saved to the working file ContentAnalysis.csv so that manual review of the matches and manual allocation to information product functions may be performed. The CSF Checklist and the CSF Review outputs are then automatically generated from the reviewed content matches. Iterative feedback and repeated runs are used to refine and add Terms and CSFs to the Translation Rules File to improve the quality of the results. It should be noted that the Output File `CSFReview.csv` in listing I.13 represents the completed content analysis. The current research is made replicable and reproducible by copying this file to the working file ContentAnalysis.csv and running the Content Analysis Script `contentanalysis.py`. The original papers need to be independently sourced to run the content analysis.

During the content analysis process the researcher must take care to look for 'diversity of ideas, alternative perspectives, oppositional writings, and/or different uses of the texts, perhaps by different groups' (White & Marsh 2006, p. 37). The current research strives to be transparent by making this information available for inspection in the Information Product CSF Review in appendix L. Indeed, internal validity, or credibility in the case of qualitative content analysis, is demonstrated by translation consistency and by reflecting all important factors related to the research question in the data gathered (White & Marsh 2006). The automated application of the Translation Rules File `TranslationRules.csv` provides a level of translation consistency assurance. External validity, or transferability, is established by placing the findings within a relevant paradigm (White & Marsh 2006). In the case of the current research, Critical Success Factors as a Management Paradigm is established in section 2.1; transferability occurs from one information system context, enterprise resource planning (ERP) systems to the related context of information product. Furthermore, as is the case in the current research, transferability confidence is improved when findings are based on multiple data sources (White & Marsh 2006).

The content analysis process matched critical success factor terms in 6868 sentences. A single researcher was then able to systematically allocate 1282 sentences to information product functions. As a protocol, sentences were required to meet the following criteria: 1) be relevant to information product; 2) provide informative understanding; 3) demonstrate

provenance of the critical success factor; and 4) contain minimal errors. Positive/negative/neutral view of the sentence was not considered, all sentences meeting the criteria were allocated to functions following the protocol. The decision to stop allocation was made when at least 20 sentences had been allocated for a critical success factor, or the number of matched sentences had been exhausted. Following the process and protocol in this section yielded 49 critical success factors with broad literature support allocated across 4 information product functions as presented in the Results of chapter 4, the Information Product CSF Checklist of section 4.3, and the Information Product CSF Review in appendix L.

Chapter 4

Results

The aim of this chapter is to present the developed conceptual framework as a solution to the research question. The conceptual framework is outlined, and its parts set out in detail. A discussion follows to provide a more detailed understanding of the framework that includes the analyses and concept development, a critical review of the results, and an examination of the sources of error.

4.1 Conceptual Framework

The conceptual framework developed by the current research effort consists of 3 parts:

1. Information Product Success Model - a conceptual model of understanding;
2. Information Product CSF Checklist - a checklist for practitioners;
3. Information Product CSF Review - a detailed review for researcher and practitioner use.

4.2 Information Product Success Model

The Information Product Success Model is shown in Figure 4.1. By integrating the information product functions necessary for information product delivery success with

the Updated DeLone and McLean IS Success Model, Figure 4.2, this model provides a holistic, yet readily understandable, view of information product delivery. The success of an information product can be measured by the dimensions of the Updated DeLone and McLean IS Success Model. In addition, a clear understanding of the functions related to information product delivery is afforded by the model. Finally, the functions provide the link to the antecedents of *IS Success*, the critical success factors of information product delivery shown in section 4.3 and appendix L.

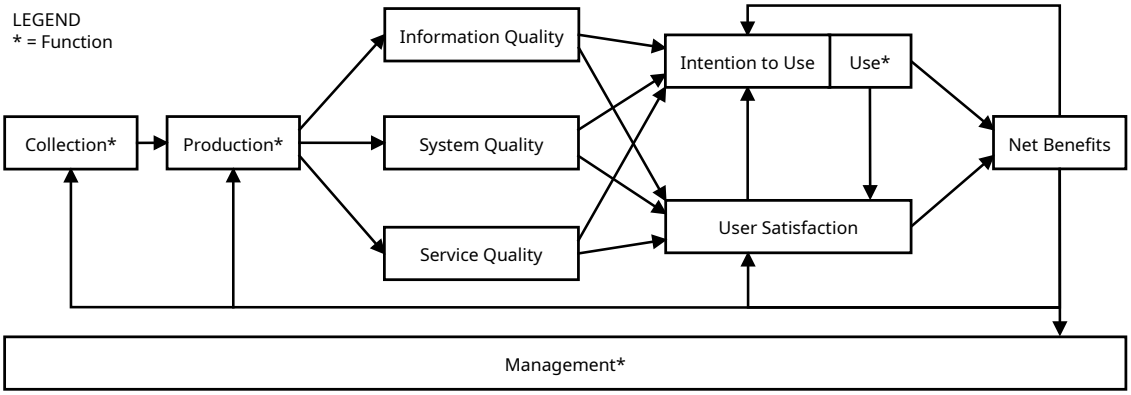

Figure 4.1: Information Product Success Model

The core of the Information Product Success Model is the Updated DeLone and McLean IS Success Model, shown in Figure 4.2. This is an extensively researched model for measuring Information System (IS) Success. Measurements need to be selected for each of the 6 dimensions, and the complex dependent variable *IS Success* is a function of these dimensions.

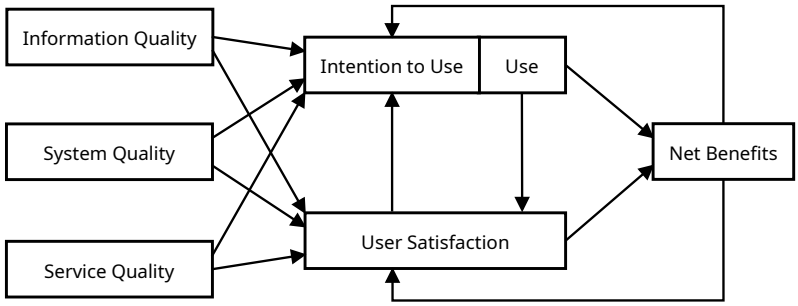

Figure 4.2: Updated DeLone and McLean IS Success Model (DeLone & McLean 2003, p. 24) - Redrawn

The current research integrates and conceptualises *Value* as:

$$Value = \frac{Net\,Benefits}{Cost\,of\,Functions} \tag{4.1}$$

Net Benefits as:

$$Net\,Benefits = Positive\,Impacts + Negative\,Impacts \tag{4.2}$$

Cost of Functions as:

$$\begin{aligned} Cost\,of\,Functions = {} & Management\,Cost \\ & + Collection\,Cost \\ & + Production\,Cost \\ & + Use\,Cost \end{aligned} \tag{4.3}$$

IS Success as a function f of the 6 dimensions:

$$\begin{aligned} IS\,Success = f(&Product\,Qualities, \\ &Use, User\,Satisfaction, \\ &Net\,Benefits) \end{aligned} \tag{4.4}$$

where *Product Qualities* represents *Information Quality*, *System Quality*, and *Service Quality*.

These are recognisable as the qualities of the information product that make the function of Use possible. However, note that *Product Qualities* are *not* extracted into an independent function equation because the quality dimensions are not considered to be treatable independently of the other *IS Success* dimensions. Note that Use is the function, while *Use* is the *IS Success* dimension that may be measured.

Finally, *Information Product Success* is postulated as a function f of the *IS Success* dimensions in conjunction with the remaining information product functions which are treated as dimensions for this purpose, Equation (4.5). In other words, it is postulated that the inclusion of the success dimensions of the information product functions, not their antecedents, may form a more complete understanding of *Information Product Success*,

possibly providing a replacement for *IS Success*. For example, safety and sustainability may be incorporated by the dimensions of *Collection*, *Production*, *Use*, and *Management* for a more complete understanding of *Information Product Success*. However, caution and further research are advised in regard to Equation (4.5), as this postulation sits on the scope limit of the current research:

$$\begin{aligned} Information\,Product\,Success = f(&Collection,\ Production,\ Management,\\ &Product\,Qualities,\\ &Use,\ User\,Satisfaction,\\ &Net\,Benefits) \end{aligned} \tag{4.5}$$

4.3 Information Product CSF Checklist

The Information Product Critical Success Factor (CSF) Checklist is designed to help practitioners to manage to the context. Its purpose is to provide possible management control variables in a usable format, such that the management function may control these independent variables with the goal of successfully delivering information product with the desired *Product Qualities*, and ultimately with the goal of achieving *IS Success*, or as postulated *Information Product Success*. Note well that *IS Success*, or as postulated *Information Product Success*, is considered to be the complex dependant variable, and successful outcomes are considered to be the results of managing the independent control variables successfully. It is the user's responsibility to determine relevance to their context, and to add/remove factors to/from the checklist as they deem necessary. This checklist makes no claim of being complete, and users are advised to refer to the Information Product CSF Review in appendix L for more detailed information, provenance of the listed critical success factors, and demonstrated broad literature support of the listed critical success factors. A description of the checklist and how it may be applied to a practical context follows.

The checklist provides a list of critical success factors that were found to have broad literature support. First, based on the literature review, it can be concluded that the ultimate determinant of whether a factor is a critical success factor appears to be the context of the specific situation. Thus, because the first determination that a practitioner must make is context relevance, the Relevant to Context Y/N column is to be checked

first. If a factor is assessed as not being relevant to the specific situation, there is no need to progress with that factor, reducing wasted effort. Second, when using Critical Success Factors as a Management Paradigm, section 2.1, the performance of factors is to be measured and managed. Thus, the second determination that a practitioner is responsible for is selecting and using suitable measures (measures are not provided by the current research). It follows that the Actual column is the actual measurement of the current situation. Third, performance management is not possible without a target, and once again the practitioner is responsible for setting and recording a suitable Target. Any factors assessed as meeting, or exceeding, their target level may require no further action, reducing wasted effort once again. Fourth, any critical success factors that are not meeting the target level need attention to bring their performance to the target level. Therefore, the Action column is made available to record any actions. Finally, each information product function has its own critical success factors necessary for information product delivery success, thus the factors are allocated to 4 tables - one for each of the information product functions:

- Table 4.1: Information Product CSF Checklist 1/4 - Management Function
- Table 4.2: Information Product CSF Checklist 2/4 - Collection Function
- Table 4.3: Information Product CSF Checklist 3/4 - Production Function
- Table 4.4: Information Product CSF Checklist 4/4 - Use Function

Note that the performance of all functions is necessary for *IS Success*, as conceptualised by the Figure 4.1: Information Product Success Model in section 4.2. The critical success factors of all functions are the necessary antecedents for *IS Success*, or as postulated *Information Product Success*, so each and every function must be managed for performance. Management as a function is responsible to manage all of the critical success factors in all functions. The management function may be delegated and distributed to a number of roles in the organisation, however, it is recommended that a complete and holistic view of how the relevant critical success factors are performing is maintained and regularly published to all stakeholders.

Direction of effect for factors is by default positive, that is having or doing should be expected to have a positive effect on success, while a (-) symbol indicates that having or doing should be expected to have a negative effect on success. The factors listed have been

reported by extant literature to be failure factors. That is, there exists a minimum level of performance to avoid mission failure, and an optimum level of performance that achieves maximum value, as discussed in Critical Success Factors as a Management Paradigm in section 2.1.

The four tables of the Information Product CSF Checklist follow; each table is intentionally placed on an otherwise clear page for ease of use. Furthermore, the tables are made available in appendix I as both LaTeX .tex, and .csv format files that may be viewed through a spreadsheet program as an alternative to viewing as a PDF, see listings I.8 to I.11.

Table 4.1: Information Product CSF Checklist 1/4 - Management Function

Critical Success Factor	Relevant to Context Y/N	Actual	Target	Action
Champion				
Collaboration				
Communication				
Consultant Support				
Cooperation				
Cost of Function				
Education & Training				
Empowered Decision-makers				
External Environment				
IT Infrastructure				
Leadership				
Legacy Systems (-)				
Management Changes (-)				
Morale & Motivation				
Organisational Change				
Organisational Culture				
Organisational Integration				
Organisational Structure				
Performance Measurement System				
Project Management Skills & Competencies				
Project Planning				
Realistic Expectations				
Regulatory & Statutory Compliance				
Scope: Features				
Short-term Thinking (-)				

Table 4.1: *continued from previous page*

Critical Success Factor	Relevant to Context Y/N	Actual	Target	Action
Steering Committee				
System Architecture				
Top Management Support				
Uncertainty Avoidance (-)				
Vendor Support				
Vision, Goals & Objectives				

Table 4.2: Information Product CSF Checklist 2/4 - Collection Function

Critical Success Factor	Relevant to Context Y/N	Actual	Target	Action
Business Process Reengineering				
Collaboration				
Communication				
Cooperation				
Cost of Function				
Data Input				
Education & Training				
Organisational Change				
Organisational Culture				
Organisational Integration				
Realistic Expectations				
User Involvement				

Table 4.3: Information Product CSF Checklist 3/4 - Production Function

Critical Success Factor	Relevant to Context Y/N	Actual	Target	Action
Business Analysis Skills & Competencies				
Collaboration				
Communication				
Cooperation				
Cost of Function				
Data Analysis & Conversion				
Education & Training				
Knowledge Transfer				
Morale & Motivation				
Organisational Change				
Organisational Culture				
Resource Availability				
Scope: Minimal Customisation				
Software & Hardware Configuration				
Software & Hardware Development				
System Integration				
System Security				
Team Knowledge, Skills & Competencies				
Technical Challenges				
Test Automation				
Testing				
Time				
Tools				

Table 4.4: Information Product CSF Checklist 4/4 - Use Function

Critical Success Factor	Relevant to Context Y/N	Actual	Target	Action
Business Process Reengineering				
Collaboration				
Communication				
Cooperation				
Cost of Function				
Education & Training				
Morale & Motivation				
Organisational Change				
Organisational Culture				
Organisational Integration				
Realistic Expectations				
User Involvement				

4.4 Discussion of Results

This section discusses and critically reviews the results of the current research effort, the conceptual framework presented in section 4.1, to form a more detailed understanding of the framework, sources of error, and the analysis applied to develop it. The conceptual framework presented provides a holistic management paradigm for information product delivery in response to the Research Question in section 1.3, and to the best of the current researcher's knowledge, achieves the research aim of making an original contribution to the research topic that advances the field.

The Information Product Success Model shown in Figure 4.1, henceforth the model, is part 1 of the conceptual framework. The first purpose of the model is, as a conceptual model, to aid understanding of information product delivery, and to help the practitioner and the researcher to form a holistic mental model of the phenomena involved in successful information product delivery. The second purpose of the model is to support the measurement of *Value*, Equation (4.1), *Net Benefits*, Equation (4.2), *Cost of Functions*, Equation (4.3), and *Information Product Success*, Equation (4.4) and Equation (4.5). Thus, the model starts to go beyond supporting information product delivery and begins to support the wider topic of product management. The current research takes the view that the success of information product may be measured by the six dimensions of the Updated DeLone and McLean IS Success Model that continue as the core of the Information Product Success Model, and postulates that this measurement be expanded to include the dimensions of *Collection*, *Production*, and *Management*. The current research advises caution and further research in this postulation, since it sits on the scope limit of the current research.

In agreement with Freiden et al.'s (1998) concept of a Type III product, discussed in section 1.1, the current research considers information product to consist of information, services, and hardware/software system. In the model this relates to the *Qualities* of: *Information Quality*, *Service Quality*, and *System Quality*. Thus, it can be seen that the dimensions of information product quality are captured by these 3 dimensions. Taking Wang's (1998) product perspective on total data quality management, it may be considered that information product with the aforementioned *Qualities* is produced by a Production function, as discussed in section 2.4. Moreover, from a process and understanding perspective production is required before a product can exist. Thus, the Production function is added to the model, and it can be seen that production success is

measured by the product dimensions of *Information Quality*, *System Quality*, and *Service Quality*.

Furthermore, it became apparent in the discussion in section 2.4 and section 2.5 that the Collection function is required to be performed to collect the raw data before the production of information product is possible. Thus, the Collection function is added to the model. From a causal perspective, insufficient performance of the Collection function should be expected to degrade the Production function resulting in degraded *Information Quality*, *System Quality*, and *Service Quality*. Therefore, the current research considers it necessary to manage the performance of the Collection function and the performance of the Production function. The remaining functions to be addressed are the Use function, without which there can be no *Net Benefits*, and the Management function that manages according to the critical success factors of all 4 functions to achieve *Information Product Success*.

In understanding the independent variables versus the dependent variables, 'It is essential that IS researchers distinguish between the management control variables and the desired results in terms of quality, use satisfaction, and impacts.' (DeLone & McLean 2003, p. 17). Two examples cited by DeLone and McLean are *user involvement* and *top management support*, and they state that 'these are clearly variables that may *cause* success rather than being a part *of* success' (DeLone & McLean 2003, p. 17). The current research is interested in providing management control variables within a framework and agrees that *user involvement* and *top management support* are two examples of factors that the management function may control (the independent variables) in anticipation of successfully delivering information product with the desired *Product Qualities* and achieving *IS Success* (the dependent variables). Thus, the management control variables are provided in the CSF Checklist Tables 4.1 to 4.4, and in the Information Product CSF Review in Table L.1.

The model functions provide the link to the necessary antecedents, the critical success factors for information product delivery, and ultimately for *Information Product Success*. Hence, the Information Product CSF Checklist and Information Product CSF Review in section 4.3 and appendix L, are part 2 and part 3 of the conceptual framework developed by the current research. It should be noted that 'necessary' indicates needed but not sufficient conditions. For example, the model does not depict how extended Management functions such as marketing affect *Information Product Success*. The Management function must certainly affect *Information Product Success* by working indirectly through the Collection,

Production, and Use functions. Neither does the model depict the effect of external influences on success. Both of these aspects present possible avenues for future research.

Using the Content Analysis method in section 3.7 the current research did not find broad literature support for document-heavy process-based management paradigms. The term 'documentation' was included in the content analysis Translation Rules File `TranslationRules.csv` in listing I.2, and only returned 5 sentences, none of which met the protocol criteria defined in the Content Analysis methodology in section 3.7. One of the matched sentences discussed organisational change, training, and communication. Direct review of the paper found two relevant suggestions with regard to a clear document for the project, and achieving organisational change when documentation that reflects the new organisation activities is applied. Thus, a management paradigm based on documentation is not supported by the reviewed literature, and excessive project documentation is identified as a likely waste factor in delivering information product. Communication, however, was extensively covered by the literature reviewed as shown in appendix L. The current research did find broad literature support for communication as a critical success factor of information product delivery. It must be noted that documentation is a form of communication, however, the current research finds that effective and efficient communication is the critical success factor that should be measured for this purpose.

Sources of error in the current research and in producing this dissertation, a form of information product, can be identified and traced by using the Information Product Success Model in Figure 4.1. By studying the model it can be conceptually understood that errors in this product are introduced directly by both the Collection function and by the Production function, indirectly by the Management function, and by feedback from the Use function to the other functions. Management errors, in this case, are introduced by the selection of research methodology, approach, methods and techniques that the Collection and Production functions apply, underscoring the importance of the Methodology bases in chapter 3. Collection errors include not collecting the right papers in terms of relevance, timeframe, evidence, and objectivity; substantiating the importance of the Quality Criteria in section 3.4 and the systematic search and selection of data papers to guard against bias errors. Despite every effort applied in the course of the current research, errors from not discovering all relevant papers and information are likely given size of the literature corpus and the researcher not having access to some literature; this is a practical limitation and is to be managed as and when it becomes known. In addition, the Collection function

introduces errors that are inherited from the underlying extant literature which is used as the source material; this is a limitation of literature review as a research methodology as stated in the Limitations in section 5.3. Production errors are introduced by a lack of understanding, thus the importance of the Literature Review in chapter 2 to build understanding, and by human errors such as detection error and author biases, thus the importance of the Content Analysis method in section 3.7 to reduce these errors. Human error, slips and lapses, are introduced during the content analysis process when manual allocation to information product functions is performed. System errors are introduced by the software failing to extract and process the content correctly.

There are further sources of error that stem from the Use function. Use of information that becomes included in the dissertation introduces data and information handling errors from section to section. Thus, iterative review and alignment are applied during the research and writing process of the Production function, and the Production function has enhanced the production *System Quality* by automation and scripting of report items to reduce errors in the *Information Quality* of the information product (this dissertation). For example, generation of the Full Search Log in Table 3.3, generation of the Included Papers in Table 3.6 from Search Log Data recorded in appendix E, and Coded Bibliography Data recorded in appendix F. Additional examples include the use of LaTeX software to automate building and cross-referencing within the dissertation, using the *Harvard AGPS BibLaTeX Style* implementation by Kromhout (2024) for in-text citation and generating the References, and generation of the CSF Checklist Tables 4.1 to 4.4 and Information Product CSF Review in Table L.1 by the scripts in appendices G to K.

Chapter 5

Conclusions and Further Work

The aim of this chapter is to discuss how the results of the research meet the research objectives, and achieve the research aims to provide an original contribution to the research topic that advances the field. The outcomes are discussed, limitations are made explicit, and directions for further work are recommended.

5.1 Conclusions

The results of the current research provide a Conceptual Framework in section 4.1 that contributes a holistic management paradigm for information product delivery in response to the Research Question in section 1.3. The research aim of making an original contribution to the research topic that advances the field has been achieved, to the best of the current researcher's knowledge. A critical review and interpretation of results is presented in the Discussion of Results in section 4.4.

The research objectives have been addressed as follows:

1. **Boundaries and Timeline** The Review of Delivery in section 2.4 establishes and develops the boundaries of information product delivery as the information product functions: Management, Collection, Production, and Use. The timeline starting point is taken as the point immediately after the decision is made to begin delivery of an information product, and the end point of delivery is when delivery stops. This timeline includes items such as upgrades that are traditionally excluded.

2. **Value** The Information Product Success Model in section 4.2, and specifically Equation (4.1) define *Value* and how it may be usefully measured with regard to information product delivery. *Value* is defined as the ratio of *Net Benefits* to *Cost of Functions*.

3. **Critical Success Factors** The Content Analysis in section 3.7 determines the Critical Success Factors (CSFs) likely to contribute to achieving the greatest value, through an extensive review of relevant literature as shown by the Information Product CSF Review in appendix L. This research finds broad literature support for 49 critical success factors relevant to delivering information product. Likely waste factors and processes that detract from value are identified in the Discussion of Results in section 4.4.

4. **Conceptual Framework** The Conceptual Framework proposed in section 4.1 includes the Information Product Success Model in section 4.2 which integrates the information product functions that link to the critical success factors necessary for information product delivery success and maximising value. The Information Product CSF Checklist in section 4.3 provides a practical way for managers to apply the Critical Success Factors as a Management Paradigm, discussed in section 2.1. The Information Product Success Model in section 4.2 suggests a path for future research to incorporate safety and sustainability into *Information Product Success*.

The current research endeavours to make an original contribution to the field in the following ways. The developed Conceptual Framework provides a holistic management paradigm for information product delivery. The integration of product functions into the Updated DeLone and McLean IS Success Model is designed to support a more complete understanding of information product delivery. The rigour of the research methodology establishes a high degree of data provenance for the identified critical success factors, and a link is made between the critical success factors and the developed Information Product Success Model through the product functions. Therefore, the critical success factors have been placed into a value framework.

5.2 Further Work

The current research develops and reports a conceptual framework; bringing together concepts, their relationships to each other, and providing their provenance. Further research may wish to examine more deeply the mechanisms of how the critical success factors work within the value framework by reviewing and tracing in more detail the source papers, thus further refining and evolving the conceptual framework.

The current research extensively utilises literature review papers as a data source in the content analysis. Taking a deductive approach, further research might wish to use the conceptual framework provided by the current research to investigate the empirical evidence in the underlying studies more closely. Avenues could include further clarifying where the evidence is in strong support, uncovering refuting evidence, determining strength of effect, or highlighting where further empirical studies are needed.

The current research suggests that well-tuned natural language processing and machine learning could extend the content analysis methodology presented in this dissertation to thousands of extant published papers.

As part of the Information Product Success Model it is postulated by the current research that *Information Product Success*, Equation (4.5), may be a replacement candidate for *IS Success*, and further work is advised.

Safety and sustainability were not able to be adequately investigated by the current research. As outlined in the Challenges section 1.2 these considerations urgently require further research attention. In the Conclusions in section 5.1, it is mentioned that the Information Product Success Model developed by the current research may provide a way to further investigate safety and sustainability in information product delivery.

5.3 Limitations

As with all practical endeavours, the current research was subject to certain limitations. To enhance transparency, and to provide the opportunity for future improvements, limitations are identified and reported. The current research reported according to the PRISMA 2020 checklist and guidelines. The PRISMA 2020 Checklist in appendix D presents the

reporting location of each item in this dissertation. Items that are reported as 'n/c' are not complete due to limitations of the current research that are made explicit below.

PRISMA 2020 Checklist Item #24 Registration and protocol, pre-registration of the literature review protocol was not completed due to limitations of time, the type of research, how the research was initialised, and how the research direction developed; research practices for integrative literature reviews in the engineering field are still improving in this area. Ideally, there would be a clear path - a best practice - for future integrative literature reviews to improve on this, and to follow ever stronger scientific practices.

Literature review as a research methodology is limited by the inherent quality, and strength of the empirical evidence in the underlying extant research. The current research endeavours to be as transparent as possible in its review and use of this information by reporting items identified and by providing provenance of information.

Despite every effort applied in the course of the current research, errors from not discovering all relevant papers and information are likely given size of the literature corpus. This is a practical limitation and is to be managed as and when it becomes known.

A limitation of the current research is that the review was performed by a single researcher, working independently. Peer review was limited to research supervisor feedback. Thus, this research represents a single author's perspective of the literature reviewed, analysed, synthesised, and reported.

5.4 Support

The sources of financial and non-financial support are reported here, as per PRISMA 2020 Checklist Item #25 Support. The employer of the author provided study assistance support, in the form of 80% reimbursement of university course fees. The employer held no other role or involvement in the current research.

5.5 Competing Interests

Literature review authors are to declare any real, or perceived, competing interests as per PRISMA 2020 Checklist Item #26 Competing interests. The author of the current research is/was employed as a Senior Performance Analyst in an engineering and physical asset intensive sector. The author is/was completing an engineering degree, electrical and electronic major, with a minor study in engineering management, towards which the current research was a requirement. The author is/was pursuing a relevant, related career.

References

Albhirat, MM, Rashid, A, Rasheed, R, Rasool, S, Zulkiffli, SNA, Zia-ul-Haq, HM & Mohammad, AM 2024, 'The PRISMA statement in enviropreneurship study: a systematic literature and a research agenda', *Cleaner Engineering and Technology*, vol. 18, no. 100721, pp. 1–12.

Ali, M & Miller, L 2017, 'ERP system implementation in large enterprises - a systematic literature review', *Journal of Enterprise Information Management*, vol. 30, no. 4, pp. 666–692.

Amid, A, Moalagh, M & Ravasan, AZ 2012, 'Identification and classification of ERP critical failure factors in Iranian industries', *Information Systems*, vol. 37, pp. 227–237.

Anjum, MJ & Khan, S 2015, 'Factors manipulate ERP implementation: an experiential study from Pakistan', *Research Journal of Applied Sciences, Engineering and Technology*, vol. 9, no. 8, pp. 628–636.

Barth, C & Koch, S 2019, 'Critical success factors in ERP upgrade projects', *Industrial Management & Data Systems*, vol. 119, no. 3, pp. 656–675.

Bártová, B, Bína, V & Váchová, L 2022, 'A PRISMA-driven systematic review of data mining methods used for defects detection and classification in the manufacturing industry', *Production*, vol. 32, pp. 1–17.

Basoglu, N, Daim, T & Kerimoglu, O 2007, 'Organizational adoption of enterprise resource planning systems: a conceptual framework', *The Journal of High Technology Management Research*, vol. 18, pp. 73–97.

Bazhair, A & Sandhu, K 2015, 'Factors of change management and perceived ease of use affecting ERP acceptance and financial performance of Saudi Arabia listed companies', *European Journal of Computer Science Information Technology*, vol. 3, no. 2, pp. 41–55.

Budgen, D, Brereton, P, Drummond, S & Williams, N 2018, 'Reporting systematic reviews: some lessons from a tertiary study', *Information and Software Technology*, vol. 95, pp. 62–74.

Chan, E 2013, 'Australian quantity surveyors utilize ICT and ERP system to improve efficiency', *Engineering Management Reviews*, vol. 2, no. 4, pp. 103–114.

Chatzoglou, P, Chatzoudes, D & Apostolopoulou, G 2016, 'Antecedents and outcomes of ERP implementation success', *2016 Federated Conference on Computer Science and Information Systems (FedCSIS)*, pp. 1253–1262.

Connected Papers 2024, *About*, viewed 17 April 2024, <https://www.connectedpapers.com/about>.

Coşkun, E, Gezici, B, Aydos, M, Tarhan, A & Garousi, V 2022, 'ERP failure: a systematic mapping of the literature', *Data & Knowledge Engineering*, vol. 142, pp. 1–23.

Daniel, DR 1961, 'Management information crisis', *Harvard Business Review*, vol. 39, pp. 111–121.

DeLone, WH & McLean, ER 1992, 'Information systems success: the quest for the dependent variable', *Information Systems Research*, vol. 3, no. 1, pp. 60–95.

——2003, 'The DeLone and McLean model of information systems success: a ten-year update', *Journal of Management Information Systems*, vol. 19, no. 4, pp. 9–30.

Elsbach, KD & van Knippenberg, D 2020, 'Creating high-impact literature reviews: an argument for 'integrative reviews'', *Journal of Management Studies*, vol. 57, no. 6, pp. 1277–1289.

Fallon, C 1961, 'Value engineering and product engineering', *I.R.E. Transactions on Product Engineering and Production*, vol. 5, no. 2, pp. 93–97.

Finney, S & Corbett, M 2007, 'ERP implementation: a compilation and analysis of critical success factors', *Business Process Management Journal*, vol. 13, no. 3, pp. 329–347.

Freiden, J, Goldsmith, R, Takacs, S & Hofacker, C 1998, 'Information as a product, not goods, not services', *Marketing Intelligence & Planning*, vol. 16, no. 3, pp. 210–220.

Garg, P & Agarwal, D 2014, 'Critical success factors for ERP implementation in a Fortis hospital: an empirical investigation', *Journal of Enterprise Information Management*, vol. 27, no. 4, pp. 402–423.

Garg, P & Chauhan, A 2015, 'Factors affecting the ERP implementation in Indian retail sector: a structural equation modelling approach', *Benchmarking: An International Journal*, vol. 22, no. 7, pp. 1315–1340.

Garg, P & Garg, A 2013, 'An empirical study on critical failure factors for enterprise resource planning implementation in Indian retail sector', *Business Process Management Journal*, vol. 19, no. 3, pp. 496–514.

——2014, 'Factors influencing ERP implementation in retail sector: an empirical study from India', *Journal of Enterprise Information Management*, vol. 27, no. 4, pp. 424–448.

Hamilton, A 2002, 'Considering value during early project development: a product case study', *International Journal of Project Management*, vol. 20, no. 2, pp. 131–136.

Huang, Q, Rahim, M, Foster, S & Anwar, M 2021, 'Critical success factors affecting implementation of cloud ERP systems: a systematic literature review with future research possibilities', *Proceedings of the 54th Hawaii International Conference on System Sciences*, pp. 4683–4692.

Khattak, MAO, She, Y, Memon, Z, Syed, N, Hussain, S & Irfan, M 2013, 'Investigating critical success factors affecting ERP implementation in Chinese and Pakistani enterprises', *International Journal of Enterprise Information Systems*, vol. 9, no. 3, pp. 39–76.

Kime, P, Wemheuer, M & Lehman, P 2022, *The biblatex package*, 3.18b 12 July 2022 version, viewed 16 March 2024, <https://ctan.org/pkg/biblatex>.

Kromhout, G 2023, *Research proposal: engineering information product delivery with critical success factors*, unpublished manuscript, ENG4110: Engineering Research Methodology, University of Southern Queensland, Toowoomba.

——2024, *Harvard AGPS BibLaTeX style*, viewed 17 April 2024, <https://github.com/harvardagps/HarvardAGPS>.

Mahmood, F, Khan, AZ & Bokhari, RH 2020, 'ERP issues and challenges: a research synthesis', *Kybernetes*, vol. 49, no. 3, pp. 629–659.

Mahraz, MI, Benabbou, L & Berrado, A 2020, 'A compilation and analysis of critical success factors for the ERP implementation', *International Journal of Enterprise Information Systems*, vol. 16, no. 2, pp. 107–133.

Martyn, J 1964, 'Bibliographic coupling', *Journal of Documentation*, vol. 20, no. 4, pp. 236–236.

Ngai, E, Law, CCH & Wat, F 2008, 'Examining the critical success factors in the adoption of enterprise resource planning', *Computers in Industry*, vol. 59, pp. 548–564.

Nimmer, RT & Krauthaus, PA 1992, 'Information as a commodity: new imperatives of commercial law', *Law and Contemporary Problems*, vol. 55, no. 3, pp. 103–130.

Osman, N & Sahraoui, A 2019, 'ERP critical success factors: software system engineering perspective', *International Journal of Computer Applications*, vol. 182, no. 42, pp. 35–42.

Page, MJ, McKenzie, JE, Bossuyt, PM, Boutron, I, Hoffmann, TC, Mulrow, CD, Shamseer, L, Tetzlaff, JM, Akl, EA, Brennan, SE, Chou, R, Glanville, J, Grimshaw, JM, Hróbjartsson, A, Lalu, MM, Li, T, Loder, EW, Mayo-Wilson, E, McDonald, S, McGuinness, LA, Stewart, LA, Thomas, J, Tricco, AC, Welch, VA, Whiting, P & Moher, D 2021a, 'The PRISMA 2020 statement: an updated guideline for reporting systematic reviews', *The BMJ*, vol. 372, no. 71, pp. 1–9.

Page, MJ, McKenzie, JE, Bossuyt, PM, Boutron, I, Hoffmann, TC, Mulrow, CD, Shamseer, L, Tetzlaff, JM & Moher, D 2021b, 'Updating guidance for reporting systematic reviews: development of the PRISMA 2020 statement', *Journal of Clinical Epidemiology*, vol. 134, pp. 103–112.

Project Management Institute 2008, *A guide to the project management body of knowledge (PMBOK Guide)*, 4th edn, Project Management Institute, Newtown Square, Pa.

——2017, *A guide to the project management body of knowledge (PMBOK Guide) - sixth edition and agile practice guide (English)*, Project Management Institute, Pennsylvania.

——2021, *The standard for project management and a guide to the project management body of knowledge (PMBOK Guide)*, 7th edn, Project Management Institute, Pennsylvania.

Qiu, B, Zhang, Y, Shen, H, Zhou, J & Chu, L 2023, 'Ergonomic researches in agricultural machinery - a systematic review using the PRISMA method', *International Journal of Industrial Ergonomics*, vol. 95, no. 103446.

Rabaa'i, AA 2009, 'Identifying critical success factors of ERP systems at the higher education sector', *Third International Symposium on Innovation in Information & Communication Technology*, pp. 1–16.

Rabaa'i, AA & AlJamal, E 2015, 'Cultural perspectives on ERP implementation in Jordan: a comparison between public and private sectors', *International Journal of Intercultural Information Management*, vol. 5, pp. 83–102.

Rabaa'i, AA, Bandara, W & Gable, G 2009, 'ERP systems in the higher education sector: a descriptive case study', *Proceedings of the 20th Australasian Conference on Information Systems*, pp. 456–470.

Rabaa'i, AA & Gammack, J 2016, 'Success factors for enterprise systems in the higher education sector: a case study', *International Journal of Engineering Science Invention*, pp. 46–61.

Ravasan, AZ & Mansouri, T 2014, 'A FCM-based dynamic modeling of ERP implementation critical failure factors', *International Journal of Enterprise Information Systems*, vol. 10, pp. 32–52.

Rockart, JF 1979, 'Chief executives define their own data needs', *Harvard Business Review*, vol. 57, no. 2, pp. 81–93.

Russell, CL 2005, 'An overview of the integrative research review', *Progress in Transplantation*, vol. 15, no. 1, pp. 8–13.

Saygili, EE, Ozturkoglu, Y & Kocakulah, MC 2017, 'End users' perceptions of critical success factors in ERP applications', *International Journal of Enterprise Information Systems*, vol. 13, no. 4, pp. 58–75.

Schermerhorn, JR, Bachrach, DG, Woods, P, Junaid, F, McKeown, T & Co, MJ 2022, *Exploring management*, 1st (Asia-Pacific), Wiley, Melbourne.

Semantic Scholar 2024, *A free, AI-powered research tool for scientific literature*, viewed 17 April 2024, <https://www.semanticscholar.org/>.

Seth, M, Goyal, D & Kiran, R 2015, 'Development of a model for successful implementation of supply chain management information system in Indian automotive industry', *Vision*, vol. 19, no. 3, pp. 248–262.

Shaul, L & Tauber, D 2013, 'Critical success factors in enterprise resource planning systems: review of the last decade', *ACM Computing Surveys*, vol. 45, no. 4, pp. 1–39.

Shukor, SA, Sheikhi, A & Nashir, AHM 2020, 'Enterprise resource planning (ERP) adaptation in malaysia agricultural SME: issues and trends', *Journal of Theoretical and Applied Information Technology*, vol. 98, no. 12, pp. 2046–2062.

Snyder, H 2019, 'Literature review as a research methodology: an overview and guidelines', *Journal of Business Research*, vol. 104, pp. 333–339.

Thiel, DV 2014, *Research methods for engineers*, Cambridge University Press.

Thorpe, D, Aghili, N & Neuren, C van 2021, 'Managing sustainable asset networks using advanced information systems', *2021 International Conference on Maintenance and Intelligent Asset Management (ICMIAM)*, pp. 1–6.

Torraco, RJ 2016, 'Writing integrative literature reviews: using the past and present to explore the future', *Human Resource Development Review*, vol. 15, no. 4, pp. 404–428.

University of Southern Queensland 2020, *Harvard AGPS referencing guide*, PDF version, Toowoomba, viewed 16 February 2024, <https://www.unisq.edu.au/library/%20referencing/harvard-agps-referencing-guide>.

Wang, RY 1998, 'A product perspective on total data quality management', *Communications of the ACM*, vol. 41, no. 2, pp. 58–65.

Wang, RY, Lee, YW, Pipino, LL & Strong, DM 1998, 'Manage your information as a product', *MIT Sloan Management Review*, vol. 39, no. 4, pp. 95–105.

Weinberg, BH 1974, 'Bibliographic coupling: a review', *Information Storage and Retrieval*, vol. 10, no. 5-6, pp. 189–196.

White, MD & Marsh, EE 2006, 'Content analysis: a flexible methodology', *Library Trends*, vol. 55, no. 1, pp. 22–45.

Zwikael, O 2009, 'The relative importance of the PMBOK Guide's nine knowledge areas during project planning', *Project Management Journal*, vol. 40, no. 4, pp. 94–103.

Appendix A

Project Specification & Work Plan

ENP4111 Professional Engineer Research Project

Project Specification & Work Plan

For:	Gavin Kromhout
Topic:	Engineering Information Product Delivery with Critical Success Factors for Maximum Value: An Integrative Literature Review
Supervisor:	Dr David Thorpe
Sponsorship:	None required
Research Aims:	The current research aims to review the available literature, to identify, analyse, and report, the critical success factors that are needed to set up information product delivery efforts for the greatest likelihood of success in terms of delivering maximum value, safely and sustainably, on-time and within budget. This research aims to review delivery efforts through the lens of the critical information product that professional engineers and engineering management require to perform their function, and to synthesise concepts from multiple research fields, to provide researchers and practitioners with a model of understanding that places the critical success factors needed for delivering information product within a value framework, and thereby providing an original contribution to the research topic that advances the field.

The research aims and research objectives here should be read in the following context. In this research, information product delivery is to be viewed through the lens of the critical information and software applications that professional engineers and engineering management, as customers of information product, require to perform their roles (Thorpe, Aghili & Neuren 2021). This includes, and goes beyond, information such as: physical asset condition and service risk; maintenance and project work scope, resources, and cost (actual vs budget vs forecast); work status and work management; work safety information (e.g. risk controls); and information about the natural environment, the built environment, and infrastructure information as found in equipment registers and building information systems (BIM). This information is digitally collected, stored, and processed by specialist software applications, advanced information systems, and solutions including enterprise resource planning (ERP), enterprise asset management (EAM), geographic information systems (GIS), machine learning (ML), artificial intelligence (AI), advanced

and predictive analytics. A full end-to-end example might encompass the following: mobile applications for field data collection, data storage in a core EAM system, data transferred to lakehouse/warehouse storage, and information modelled and presented for use through an analytics platform. The successful management and delivery of information product to customers such as professional engineers and engineering management remains a challenge for many organisations (Mahmood, Khan & Bokhari 2020; Wang et al. 1998; Zwikael 2009). Mahmood, Khan and Bokhari (2020) identified 31 issues/challenges, assessed their criticality, then ranked and categorised them through a systematic literature review of ERP studies. This prior research, however, did not progress these challenges to critical success factors as did previous research, nor were the results placed within a value framework; this is the primary research gap that the proposed research intends to address. Indeed, the proposed research is further work and builds upon the Mahmood, Khan and Bokhari (2020) study, and many other areas of the literature. The proposed research intends to raise the level of understanding through conceptual model synthesis, and to progress the known challenges to critical success factors and place them within a framework for maximising value.

Research Objectives, refined from Kromhout (2023, p. 6):

1. develop the boundaries and timeline view of information product delivery;
2. define value and how it may be usefully measured with regard to information product delivery;
3. determine the critical success factors that are likely to contribute to achieving greatest value, and identify likely waste factors and processes that detract from value;
4. propose a conceptual framework for how the critical success factors may be safely applied to achieve greatest value.

Expected Outcomes:

The primary intended outcome of this research is the identification of the critical success factors evident in delivering essential information product to professional engineers and engineering management. Application of these critical success factors by practitioners and organisations in policy and practice updates is anticipated to improve the likelihood of: safer, more sustainable, and more satisfying work for delivery teams and managers;

greater value realisation for organisations and customers of information product; improved on-time delivery of information product; and improved delivery of information product within budget.

Further, for both researchers and practitioners, the intention is to provide an improved conceptual model of understanding and supporting evidence as an outcome, which may be used to empower practitioners and to enable researchers to perform further research. This will be provided in the form of the timeline view of information product delivery, a definition of value in the context of information product delivery, and the full literature search log database and the resulting linked bibliography database.

Timeline:

The timeline view shown in Figure A.1 corresponds with the final dissertation due date. The project milestones and approach are designed to support and track progress towards the successful completion and on-time submission of the final dissertation. The main literature review and analysis follow an iterative and integrative process over 18 weeks while working towards the clearly defined research aims and objectives. Weekly student effort against the schedule is to average 10 hours per week, over 41 weeks, for an estimated effort of 410 hours.

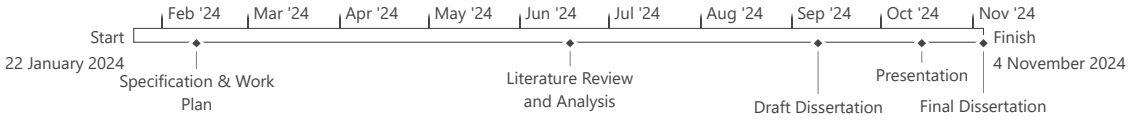

Figure A.1: Research Project Specification Timeline

Resources:

The human resources required are the student, supervisor, and course facilitator as provisioned by the university standard course arrangements. Hardware resources required and provided by the student are: sit-to-stand desk, ergonomic office chair, ergonomically shaped mouse, mechanical keyboard, external display monitor, internet access, and a suitable laptop. The required academic literature access is provided by the university library; while Google Scholar, Scopus, and Science Direct are also expected to be used.

Risk Management:

The risk assessment and risk management plan are attached as appendix B. The plan is to be carefully followed by the student and all controls implemented. Further, the plan is to be reviewed by the student on a monthly basis to confirm that the risks have not changed and that the controls remain effective.

Versions:

Student Name:	Gavin Kromhout
Date:	12 February 2024 (A1), 2 April 2024 (A2), 20 May 2024 (A3), 09 September 2024 (A4), 04 November 2024 (V01)
Supervisor Name:	Dr David Thorpe
Date:	12 February 2024 (A1), 2 April 2024 (A2), 20 May 2024 (A3), 09 September 2024 (A4), 04 November 2024 (V01)

References:

Kromhout, G 2023, *Research proposal: engineering information product delivery with critical success factors*, unpublished manuscript, ENG4110: Engineering Research Methodology, University of Southern Queensland, Toowoomba.

Mahmood, F, Khan, AZ & Bokhari, RH 2020, 'ERP issues and challenges: a research synthesis', *Kybernetes*, vol. 49, no. 3, pp. 629–659.

Thorpe, D, Aghili, N & Neuren, C van 2021, 'Managing sustainable asset networks using advanced information systems', *2021 International Conference on Maintenance and Intelligent Asset Management (ICMIAM)*, pp. 1–6.

Wang, RY, Lee, YW, Pipino, LL & Strong, DM 1998, 'Manage your information as a product', *MIT Sloan Management Review*, vol. 39, no. 4, pp. 95–105.

Zwikael, O 2009, 'The relative importance of the PMBOK Guide's nine knowledge areas during project planning', *Project Management Journal*, vol. 40, no. 4, pp. 94–103.

Appendix B

Risk Assessment

NUMBER	RISK DESCRIPTION	TREND	CURRENT	RESIDUAL
3829	ENP4111 - Professional Engineer Research Project - Gavin Kromhout		High	Medium

DOCUMENTS REFERENCED
None

RISK OWNER	RISK IDENTIFIED ON	LAST REVIEWED ON	NEXT SCHEDULED REVIEW
Gavin Kromhout	01/02/2024	27/10/2024	None - Complete

RISK FACTOR(S)	EXISTING CONTROL(S)	PROPOSED CONTROL(S)	OWNER	DUE DATE
Sitting at a computer for extended periods. Physical and mental health deterioration from lack of exercise and socialisation.	**Control:** Take regular breaks to move and get exercise. Take time to visit and talk with others.	**Control:** Enforce breaks every 40 minutes, or more if required. Engage in additional exercise. Perform regular meditation. Take longer break periods to attend social events.		01/02/2024
Sitting at a computer for extended periods. Repetitive strain injury. Musculoskeletal injury.	**Control:** Take regular breaks to move and get exercise. Follow standard ergonomic setup guidelines for workstation.	**Control:** Sit-to-stand desk. Mechanical keyboard. Ergonomically shaped mouse. Ergonomic office chair.		01/02/2024
Laptop failure, or loss of files. Loss of all work to that point in time.	**Control:** Off-site backups of any changed files daily.			
Research findings not accepted. Failure to graduate, failure to contribute to the body of knowledge.	**Control:** Maintain a full search log. Apply multiple techniques to provide empirical evidence.			

Appendix C

Ethical Clearance

There are no Ethical Clearances applicable to this project.

Appendix D

PRISMA 2020 Checklist

Table D.1 shows the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA 2020) checklist published by Page et al. (2021), complete with the reporting location of each item in the current research dissertation. Note, 'nil' explicitly reports that there are none, and 'n/c' indicates that an item is not complete due to a limitation of the current research.

Table D.1: PRISMA 2020 Checklist (Page et al. 2021)

Section and topic	Item #	Checklist item	Location where item is reported
Title			
Title	1	Identify the report as a systematic review.	Title
Abstract			
Abstract	2	See the PRISMA 2020 for Abstracts checklist.	Abstract
Introduction			
Rationale	3	Describe the rationale for the review in the context of existing knowledge.	1.1 Background & 1.2 Challenges
Objectives	4	Provide an explicit statement of the objective(s) or question(s) the review addresses.	1.3 Research Question, 1.4 Research Aims & 1.5 Research Objectives
Methods			
Eligibility criteria	5	Specify the inclusion and exclusion criteria for the review and how studies were grouped for the syntheses.	3.4 Quality Criteria & Table 3.2: Quality Criteria for Research Data and Evidence
Information sources	6	Specify all databases, registers, websites, organisations, reference lists and other sources searched or consulted to identify studies. Specify the date when each source was last searched or consulted.	Table 3.3: Full Search Log
Search strategy	7	Present the full search strategies for all databases, registers and websites, including any filters and limits used.	Table 3.3: Full Search Log
Selection process	8	Specify the methods used to decide whether a study met the inclusion criteria of the review, including how many reviewers screened each record and each report retrieved, whether they worked independently, and if applicable, details of automation tools used in the process.	3.4 Quality Criteria

Table D.1: *continued from previous page*

Section and Topic	Item #	Checklist item	Location where item is reported
Data collection process	9	Specify the methods used to collect data from reports, including how many reviewers collected data from each report, whether they worked independently, any processes for obtaining or confirming data from study investigators, and if applicable, details of automation tools used in the process.	3.7 Content Analysis
Data items	10a	List and define all outcomes for which data were sought. Specify whether all results that were compatible with each outcome domain in each study were sought (e.g. for all measures, time points, analyses), and if not, the methods used to decide which results to collect.	3.7 Content Analysis
	10b	List and define all other variables for which data were sought (e.g. participant and intervention characteristics, funding sources). Describe any assumptions made about any missing or unclear information.	3.7 Content Analysis
Study risk of bias assessment	11	Specify the methods used to assess risk of bias in the included studies, including details of the tool(s) used, how many reviewers assessed each study and whether they worked independently, and if applicable, details of automation tools used in the process.	nil
Effect measures	12	Specify for each outcome the effect measure(s) (e.g. risk ratio, mean difference) used in the synthesis or presentation of results.	nil
Synthesis methods	13a	Describe the processes used to decide which studies were eligible for each synthesis (e.g. tabulating the study intervention characteristics and comparing against the planned groups for each synthesis (item #5)).	3.6 Bibliographic Coupling
	13b	Describe any methods required to prepare the data for presentation or synthesis, such as handling of missing summary statistics, or data conversions.	3.7 Content Analysis
	13c	Describe any methods used to tabulate or visually display results of individual studies and syntheses.	3.7 Content Analysis
	13d	Describe any methods used to synthesise results and provide a rationale for the choice(s). If meta-analysis was performed, describe the model(s), method(s) to identify the presence and extent of statistical heterogeneity, and software package(s) used.	3.3 Approach

Table D.1: *continued from previous page*

Section and Topic	Item #	Checklist item	Location where item is reported
	13e	Describe any methods used to explore possible causes of heterogeneity among study results (e.g. subgroup analysis, meta-regression).	nil
	13f	Describe any sensitivity analyses conducted to assess robustness of the synthesised results.	nil
Reporting bias assessment	14	Describe any methods used to assess risk of bias due to missing results in a synthesis (arising from reporting biases).	nil
Certainty assessment	15	Describe any methods used to assess certainty (or confidence) in the body of evidence for an outcome.	2.5 Review of Critical Success Factors
Results			
Study selection	16a	Describe the results of the search and selection process, from the number of records identified in the search to the number of studies included in the review, ideally using a flow diagram.	Figure 3.1: Research Method Overview Flowchart, adapted from PRISMA 2020 flow diagram Page et al. (2021)
	16b	Cite studies that might appear to meet the inclusion criteria, but which were excluded, and explain why they were excluded.	Table 3.7: Excluded Results from Bibliographically Coupled Papers using the Mahmood, Khan and Bokhari (2020) paper as the Origin Paper with Quality Criteria Applied
Study characteristics	17	Cite each included study and present its characteristics.	2.5 Review of Critical Success Factors
Risk of bias in studies	18	Present assessments of risk of bias for each included study.	nil
Results of individual studies	19	For all outcomes, present, for each study: (a) summary statistics for each group (where appropriate) and (b) an effect estimate and its precision (e.g. confidence/credible interval), ideally using structured tables or plots.	nil

Table D.1: *continued from previous page*

Section and Topic	Item #	Checklist item	Location where item is reported
Results of syntheses	20a	For each synthesis, briefly summarise the characteristics and risk of bias among contributing studies.	nil
	20b	Present results of all statistical syntheses conducted. If meta-analysis was done, present for each the summary estimate and its precision (e.g. confidence/credible interval) and measures of statistical heterogeneity. If comparing groups, describe the direction of the effect.	nil
	20c	Present results of all investigations of possible causes of heterogeneity among study results.	nil
	20d	Present results of all sensitivity analyses conducted to assess the robustness of the synthesised results.	nil
Reporting biases	21	Present assessments of risk of bias due to missing results (arising from reporting biases) for each synthesis assessed.	nil
Certainty of evidence	22	Present assessments of certainty (or confidence) in the body of evidence for each outcome assessed.	nil
Discussion			
Discussion	23a	Provide a general interpretation of the results in the context of other evidence.	4.4 Discussion of Results
	23b	Discuss any limitations of the evidence included in the review.	5.3 Limitations
	23c	Discuss any limitations of the review processes used.	5.3 Limitations
	23d	Discuss implications of the results for practice, policy, and future research.	5.1 Conclusions & 5.2 Further Work
Other information			
Registration and protocol	24a	Provide registration information for the review, including register name and registration number, or state that the review was not registered.	n/c - 5.3 Limitations
	24b	Indicate where the review protocol can be accessed, or state that a protocol was not prepared.	3.7 Content Analysis
	24c	Describe and explain any amendments to information provided at registration or in the protocol.	n/c - 5.3 Limitations
Support	25	Describe sources of financial or non-financial support for the review, and the role of the funders or sponsors in the review.	5.4 Support

Table D.1: *continued from previous page*

Section and Topic	Item #	Checklist item	Location where item is reported
Competing interests	26	Declare any competing interests of review authors.	5.5 Competing Interests
Availability of data, code, and other materials	27	Report which of the following are publicly available and where they can be found: template data collection forms; data extracted from included studies; data used for all analyses; analytic code; any other materials used in the review.	All included in dissertation main & appendices.

References

Mahmood, F, Khan, AZ & Bokhari, RH 2020, 'ERP issues and challenges: a research synthesis', *Kybernetes*, vol. 49, no. 3, pp. 629–659.

Page, MJ, McKenzie, JE, Bossuyt, PM, Boutron, I, Hoffmann, TC, Mulrow, CD, Shamseer, L, Tetzlaff, JM, Akl, EA, Brennan, SE, Chou, R, Glanville, J, Grimshaw, JM, Hróbjartsson, A, Lalu, MM, Li, T, Loder, EW, Mayo-Wilson, E, McDonald, S, McGuinness, LA, Stewart, LA, Thomas, J, Tricco, AC, Welch, VA, Whiting, P & Moher, D 2021, 'The PRISMA 2020 statement: an updated guideline for reporting systematic reviews', *The BMJ*, vol. 372, no. 71, pp. 1–9.

Appendix E

Search Log Data

The search log and resulting coded bibliography are BibLaTeX format databases.

Listing E.1: Search Log File `SearchLog.bib`

```
@Search{            SL0001,
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  Query            = {ENG4110: Engineering Research Methodology},
  SortedBy         = {Relevance},
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  SortedBy         = {Relevance},
  LimitedBy        = {Any type, Top 10},
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  Source           = {Google Scholar},
  TotalResultCount = {2,910}
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  Query            = {"Bibliographic Coupling" peer review},
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  LimitedBy        = {Any type, Top 2},
  Date             = {2024-04-13},
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  LimitedBy        = {Automatic},
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  Query             = {reporting integrative literature reviews},
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  LimitedBy         = {Any type, Top 4},
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  Source            = {Google Scholar},
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}

@Search{            SL0012,
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  Query             = {reporting systematic reviews},
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  LimitedBy         = {Any type, Top 3},
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@Search{            SL0013,
  Approach          = {Methodology, Reporting},
  Query             = {engineering research PRISMA},
  SortedBy          = {Relevance},
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  Date              = {2024-06-23},
  Source            = {Google Scholar},
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  Query             = {ENG3003: Engineering Management},
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  LimitedBy         = {Course},
  Date              = {2024-01-26},
  Source            = {University of Southern Queensland},
  TotalResultCount  = {1}
}

@Search{            SL0015,
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  Query             = {MGT3203: Project Management Processes},
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  Date              = {2023-01-27},
  Source            = {University of Southern Queensland},
  TotalResultCount  = {2}
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  Date             = {2024-08-20},
  Source           = {Google Scholar},
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  Date             = {2024-08-21},
  Source           = {Google Scholar},
  TotalResultCount = {263,000}
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  Query            = {systematic content analysis methodology},
  SortedBy         = {Relevance},
  LimitedBy        = {Any type, Top 1},
  Date             = {2024-09-08},
  Source           = {Google Scholar},
  TotalResultCount = {6,330,000}
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Appendix F

Coded Bibliography Data

The search log and resulting coded bibliography are BibLaTeX format databases.

Listing F.1: Coded Bibliography File `Bibliography.bib`

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@Article{          AbbottEtAl2007BuildiConditAssess,
  Author         = {Abbott, GR and McDuling, JJ and Parsons, SA and Schoeman,
                    JC},
  Date           = {2007},
  Title          = {Building Condition Assessment: A Performance Evaluation
                    Tool Towards Sustainable Asset Management},
  Journal        = {CIB World Building Congress},
  JournalTitleAddon={Cape Town},
  Pages          = {14},
  SearchLogKey   = {SL0003},
  SearchLogOrder = {7},
  Relevance      = {Unknown},
  Field          = {Engineering},
  Quality        = {Not Checked},
  ReadStatus     = {Unread}
}

@Article{          Abd-MalekEtAl2018SustaiAssetManage,
  Author         = {bin Abd Malek, Ir Mohamad Adzizulrohim and Teknikal,
                    Ketua Penolong Setiausaha and Malaysia, Kementerian
                    Kewangan},
  Date           = {2018},
  Title          = {Sustainable Asset Management on Decision Making Factors
                    of Building Retrofitting},
  Journal        = {Kandungan},
  Pages          = {33},
  SearchLogKey   = {SL0003},
  SearchLogOrder = {9},
  Relevance      = {Unknown},
  Field          = {Engineering},
  Quality        = {Not Checked},
  ReadStatus     = {Unread}
}

@Article{          AbdiEtAl2019SustaiAssetManage,
  Author         = {Abdi, Abdollah and Taghipour, Sharareh},
  Date           = {2019},
  Title          = {Sustainable Asset Management: A Repair-Replacement
                    Decision Model Considering Environmental Impacts,
                    Maintenance Quality, and Risk},
  Journal        = {Computers \& Industrial Engineering},
  Publisher      = {Elsevier},
  Volume         = {136},
  Pages          = {117-134},
  SearchLogKey   = {SL0003},
  SearchLogOrder = {8},
  Relevance      = {Unknown},
  Field          = {Engineering},
  Quality        = {Not Checked},
  ReadStatus     = {Unread}
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@Article{          AlbhiratEtAl2024PRISMAStatemEnviro,
  Author         = {Albhirat, Muath Maqbool and Rashid, Aamir and Rasheed,
                    Rizwana and Rasool, Shahid and Zulkiffli, Siti Nur Atikah
                    and Zia-ul-Haq, Hafiz Muhammad and Mohammad, Al Montaser},
  Date           = {2024},
  Title          = {The {PRISMA} Statement in Enviropreneurship Study: A
                    Systematic Literature and a Research Agenda},
  Journal        = {Cleaner Engineering and Technology},
  Publisher      = {Elsevier},
  Volume         = {18},
  Number         = {100721},
  Pages          = {1-12},
  SearchLogKey   = {SL0013},
  SearchLogOrder = {1},
  Relevance      = {Engineering research using PRISMA},
  Field          = {Multidisciplinary},
  Quality        = {Peer Reviewed Journal, SJR H-Index 31}
}

@Article{          BadurdeenEtAl2012RiskModeliAnalys,
  Author         = {Badurdeen, Fazleena and Shuaib, Mohannad and Liyanage,
                    Jayantha P},
  Date           = {2012},
  Title          = {Risk Modeling and Analysis for Sustainable Asset
                    Management},
  Journal        = {Engineering Asset Management and Infrastructure
                    Sustainability: Proceedings of the 5th World Congress on
                    Engineering Asset Management (WCEAM 2010)},
  Pages          = {61-75},
  SearchLogKey   = {SL0003},
  SearchLogOrder = {6},
  Relevance      = {Unknown},
  Field          = {Engineering},
  Quality        = {Not Checked},
  ReadStatus     = {Unread}
}

@Article{          BudgenEtAl2018ReportSystemReview,
  Author         = {Budgen, David and Brereton, Pearl and Drummond, Sarah and
                    Williams, Nikki},
  Date           = {2018},
  Title          = {Reporting Systematic Reviews: Some Lessons from a
                    Tertiary Study},
  Journal        = {Information and Software Technology},
  Publisher      = {Elsevier},
  Volume         = {95},
  Pages          = {62-74},
  SearchLogKey   = {SL0012},
  SearchLogOrder = {3},
  Relevance      = {Paper about lit. reviews},
  Field          = {Information Technology},
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  Quality        = {Peer Reviewed Journal, SJR H-Index 123}
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@Article{          BártováEtAl2022PRISMASystemReview,
  Author         = {Bártová, Blanka and Bína, Vladislav and Váchová,
                    Lucie},
  Date           = {2022},
  Title          = {A {PRISMA}-Driven Systematic Review of Data Mining
                    Methods Used for Defects Detection and Classification in
                    the Manufacturing Industry},
  Journal        = {Production},
  Publisher      = {SciELO Brasil},
  Volume         = {32},
  Pages          = {1-17},
  SearchLogKey   = {SL0013},
  SearchLogOrder = {3},
  Relevance      = {Engineering research using PRISMA},
  Field          = {Multidisciplinary},
  Quality        = {Peer Reviewed Journal, SJR H-Index 24}
}

@InCollection{     CherringtonEtAl2020DeepLearniDecisi,
  Author         = {Cherrington, Marianne and Lu, Zhongyu and Xu, Qiang and
                    Airehrour, David and Madanian, Samaneh and Dyrkacz,
                    Andrea},
  Date           = {2020},
  Title          = {Deep Learning Decision Support for Sustainable Asset
                    Management},
  BookTitle      = {Advances in Asset Management and Condition Monitoring:
                    COMADEM 2019},
  Publisher      = {Springer},
  Pages          = {537-547},
  SearchLogKey   = {SL0003},
  SearchLogOrder = {1},
  Relevance      = {Unknown},
  Field          = {Data Science},
  Quality        = {Not Checked},
  ReadStatus     = {Unread}
}

@Article{          CherringtonEtAl2021DeepLearniSustai,
  Author         = {Cherrington, Marianne and Lu, Joan and Xu, Qiang and
                    Airehrour, David and Wade, Stephen},
  Date           = {2021},
  Title          = {Deep Learning for Sustainable Asset Management
                    Decision-Making},
  Journal        = {International Journal of COMADEM},
  Volume         = {24},
  Number         = {2},
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  Quality        = {Not Checked},
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@Online{           ConnectedPapers2024About,
  Author         = {{Connected Papers}},
  Date           = {2024},
  Title          = {About},
  URL            = {https://www.connectedpapers.com/about},
  URLDate        = {2024-04-17},
  SearchLogKey   = {SL0001},
  SearchLogOrder = {8},
  Relevance      = {Research Methodology},
  Field          = {Multidisciplinary},
  Quality        = {Bibliographic Coupling}
}

@Article{          Daniel1961ManageInformCrisis,
  Author         = {Daniel, D Ronald},
  Date           = {1961},
  Title          = {Management Information Crisis},
  Journal        = {Harvard Business Review},
  Publisher      = {Harvard University Graduate School of Business
                    Administration},
  Volume         = {39},
  Pages          = {111-121},
  SearchLogKey   = {SL0001},
  SearchLogOrder = {12},
  Relevance      = {Foundational Knowledge},
  Field          = {Management},
  Quality        = {Magazine, SJR H-Index 206}
}

@Article{          DeLoneEtAl1992InformSystemSucces,
  Author         = {DeLone, William H and McLean, Ephraim R},
  Date           = {1992},
  Title          = {Information Systems Success: The Quest for the Dependent
                    Variable},
  Journal        = {Information Systems Research},
  Volume         = {3},
  Number         = {1},
  Pages          = {60-95},
  SearchLogKey   = {SL0017},
  SearchLogOrder = {1},
  Relevance      = {Relevant Theory},
  Field          = {Information Technology},
  Quality        = {Peer Reviewed Journal, SJR H-Index 185}
}

@Article{          DeLoneEtAl2003DeLoneMcLeanModel,
  Author         = {DeLone, William H and McLean, Ephraim R},
  Date           = {2003},
  Title          = {The {DeLone} and {McLean} Model of Information Systems
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                  Success: A Ten-Year Update},
  Journal        = {Journal of Management Information Systems},
  Volume         = {19},
  Number         = {4},
  Pages          = {9-30},
  SearchLogKey   = {SL0016},
  SearchLogOrder = {1},
  Relevance      = {Relevant Theory},
  Field          = {Information Technology},
  Quality        = {Peer Reviewed Journal, SJR H-Index 170}
}

@Article{          ElsbachEtAl2020CreatiHigh-ILitera,
  Options        = {useprefix=true},
  Author         = {Elsbach, Kimberly D and van Knippenberg, Daan},
  Date           = {2020},
  Title          = {Creating High-Impact Literature Reviews: An Argument for
                  `Integrative Reviews'},
  Journal        = {Journal of Management Studies},
  Volume         = {57},
  Number         = {6},
  Pages          = {1277-1289},
  SearchLogKey   = {SL0011},
  SearchLogOrder = {4},
  Relevance      = {Paper about lit. reviews},
  Field          = {Management},
  Quality        = {Peer Reviewed Journal, SJR H-Index 221}
}

@Article{          Fallon1961ValueEngineProduc,
  Author         = {Fallon, C.},
  Date           = {1961},
  Title          = {Value Engineering and Product Engineering},
  Journal        = {{I.R.E.} Transactions on Product Engineering and
                  Production},
  Volume         = {5},
  Number         = {2},
  Pages          = {93-97},
  SearchLogKey   = {SL0001},
  SearchLogOrder = {14},
  Relevance      = {Research Proposal, Value},
  Field          = {Technology Management},
  Quality        = {Peer Reviewed Journal, SJR Not Indexed}
}

@Article{          FreidenEtAl1998InformProducNot,
  Author         = {Freiden, Jon and Goldsmith, Ronald and Takacs, Scott and
                  Hofacker, Charles},
  Date           = {1998},
  Title          = {Information as a Product, Not Goods, Not Services},
  Journal        = {Marketing Intelligence \& Planning},
  Volume         = {16},
  Number         = {3},
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  Pages          = {210-220},
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  SearchLogOrder = {3},
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  Field          = {Marketing, Business},
  Quality        = {Peer Reviewed Journal, SJR H-Index 80}
}

@Article{          Hamilton2002ConsidValueduring,
  Author         = {Albert Hamilton},
  Date           = {2002},
  Title          = {Considering Value during Early Project Development: A
                    Product Case Study},
  Journal        = {International Journal of Project Management},
  Volume         = {20},
  Number         = {2},
  Pages          = {131-136},
  SearchLogKey   = {SL0001},
  SearchLogOrder = {15},
  Relevance      = {Research Proposal, Value},
  Field          = {Technology Management},
  Quality        = {Peer Reviewed Journal, SJR H-Index 179}
}

@Article{          HojjatiEtAl2016SustaiAssetManage,
  Author         = {Hojjati, Aryan and Jefferson, Ian and Metje, Nicole and
                    Rogers, CDF},
  Date           = {2016},
  Title          = {Sustainable Asset Management for Utility Streetworks},
  Journal        = {Transforming the Future of Infrastructure through Smarter
                    Information: Proceedings of the International Conference
                    on Smart Infrastructure and ConstructionConstruction,
                    27--29 June 2016},
  Pages          = {669-674},
  SearchLogKey   = {SL0003},
  SearchLogOrder = {10},
  Relevance      = {Unknown},
  Field          = {Engineering},
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  ReadStatus     = {Unread}
}

@Manual{           KimeEtAl2022biblatPackag,
  Author         = {Philip Kime and Moritz Wemheuer and Philipp Lehman},
  Date           = {2022},
  Title          = {The {biblatex} Package},
  Edition        = {3.18b 12 July 2022 version},
  URL            = {https://ctan.org/pkg/biblatex},
  URLDate        = {2024-03-16},
  SearchLogKey   = {SL0001},
  SearchLogOrder = {10},
  Relevance      = {Foundational Knowledge},
  Field          = {Engineering},
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  Quality        = {Original Author, Manual}
}

@Book{             Kromhout2023ResearProposEngine,
  Author         = {Kromhout, Gavin},
  Date           = {2023},
  Title          = {Research Proposal: Engineering Information Product
                    Delivery with Critical Success Factors},
  Publisher      = {University of Southern Queensland},
  Address        = {Toowoomba},
  TitleAddOn     = {unpublished manuscript, ENG4110: Engineering Research
                    Methodology},
  SearchLogKey   = {SL0001},
  SearchLogOrder = {2},
  Relevance      = {Research Proposal},
  Field          = {Engineering},
  Quality        = {University Coursework}
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@Online{           Kromhout2024HarvarAGPSBibLaT,
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  Date           = {2024},
  Title          = {{Harvard} {AGPS} {BibLaTeX} Style},
  URL            = {https://github.com/harvardagps/HarvardAGPS},
  URLDate        = {2024-04-17},
  SearchLogKey   = {SL0001},
  SearchLogOrder = {11},
  Relevance      = {Foundational Knowledge},
  Field          = {Engineering},
  Quality        = {Original Author, Manual}
}

@Book{             Lutchman2006SustaiAssetManage,
  Author         = {Lutchman, Roopchan},
  Date           = {2006},
  Title          = {Sustainable Asset Management: Linking Assets, People, and
                    Processes for Results},
  Publisher      = {DEStech Publications, Inc},
  SearchLogKey   = {SL0003},
  SearchLogOrder = {3},
  Relevance      = {Unknown},
  Field          = {Engineering},
  Quality        = {Not Checked},
  ReadStatus     = {Unread}
}

@Article{          MahmoodEtAl2020ERPIssuesChalle,
  Author         = {Mahmood, Faisal and Khan, Abdul Zahid and Bokhari, Rahat
                    Hussain},
  Date           = {2020},
  Title          = {{ERP} Issues and Challenges: A Research Synthesis},
  Journal        = {Kybernetes},
  Volume         = {49},
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  Number         = {3},
  Pages          = {629-659},
  SearchLogKey   = {SL0001},
  SearchLogOrder = {5},
  Relevance      = {Research Proposal, Challenges},
  Field          = {Technology Management},
  Quality        = {Peer Reviewed Journal, SJR H-Index 47}
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@Article{          Martyn1964BiblioCoupli,
  Author         = {Martyn, John},
  Date           = {1964},
  Title          = {Bibliographic Coupling},
  Journal        = {Journal of Documentation},
  Volume         = {20},
  Number         = {4},
  Pages          = {236-236},
  SearchLogKey   = {SL0004},
  SearchLogOrder = {1},
  Relevance      = {Research Methodology},
  Field          = {Information Science},
  Quality        = {Peer Reviewed Journal, SJR H-Index 72}
}

@Article{          Mitrovic2016InformProducNecess,
  Author         = {Mitrovic, Biljana},
  Date           = {2016},
  Title          = {Information as a Product, Necessity and Prerogative in
                   Digital Environment: The Case of Virtual Worlds},
  Journal        = {Media Dialogues},
  Volume         = {14},
  Number         = {3},
  Pages          = {35-50},
  SearchLogKey   = {SL0002},
  SearchLogOrder = {7},
  Relevance      = {Define, Significance},
  Field          = {Unspecified},
  Quality        = {Not Checked},
  ReadStatus     = {Unread}
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@Article{          NiekampEtAl2015Multi-DecisiSuppor,
  Author         = {Niekamp, Stefanie and Bharadwaj, Ujjwal R and Sadhukhan,
                   Jhuma and Chryssanthopoulos, Marios K},
  Date           = {2015},
  Title          = {A Multi-Criteria Decision Support Framework for
                   Sustainable Asset Management and Challenges in Its
                   Application},
  Journal        = {Journal of Industrial and Production Engineering},
  Publisher      = {Taylor \& Francis},
  Volume         = {32},
  Number         = {1},
  Pages          = {23-36},
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  SearchLogKey   = {SL0003},
  SearchLogOrder = {4},
  Relevance      = {Unknown},
  Field          = {Engineering},
  Quality        = {Not Checked},
  ReadStatus     = {Unread}
}

@Article{          NimmerEtAl1992InformCommodNew,
  Author         = {Nimmer, Raymond T and Krauthaus, Patricia Ann},
  Date           = {1992},
  Title          = {Information as a Commodity: New Imperatives of Commercial
                   Law},
  Journal        = {Law and Contemporary Problems},
  Publisher      = {Duke University School of Law},
  Volume         = {55},
  Number         = {3},
  Pages          = {103-130},
  SearchLogKey   = {SL0002},
  SearchLogOrder = {8},
  Relevance      = {Define, Significance},
  Field          = {Law},
  Quality        = {University Journal, SJR H-Index 42}
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@Article{          PageEtAl2021PRISMA2020Statem,
  Author         = {Page, Matthew J and McKenzie, Joanne E and Bossuyt,
                   Patrick M and Boutron, Isabelle and Hoffmann, Tammy C and
                   Mulrow, Cynthia D and Shamseer, Larissa and Tetzlaff,
                   Jennifer M and Akl, Elie A and Brennan, Sue E and Chou,
                   Roger and Glanville, Julie and Grimshaw, Jeremy M and
                   Hróbjartsson, Asbjørn and Lalu, Manoj M and Li, Tianjing
                   and Loder, Elizabeth W and Mayo-Wilson, Evan and McDonald,
                   Steve and McGuinness, Luke A and Stewart, Lesley A and
                   Thomas, James and Tricco, Andrea C and Welch, Vivian A and
                   Whiting, Penny and Moher, David},
  Date           = {2021},
  Title          = {The {PRISMA} 2020 Statement: An Updated Guideline for
                   Reporting Systematic Reviews},
  Journal        = {The BMJ},
  Volume         = {372},
  Number         = {71},
  Pages          = {1-9},
  SearchLogKey   = {SL0012},
  SearchLogOrder = {1},
  Relevance      = {Paper about lit. reviews},
  Field          = {Medical},
  Quality        = {Peer Reviewed Journal, SJR H-Index 497}
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                  Mulrow, Cynthia D and Shamseer, Larissa and Tetzlaff,
                  Jennifer M and Moher, David},
  Date           = {2021},
  Title          = {Updating Guidance for Reporting Systematic Reviews:
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  Journal        = {Journal of Clinical Epidemiology},
  Publisher      = {Elsevier},
  Volume         = {134},
  Pages          = {103-112},
  SearchLogKey   = {SL0012},
  SearchLogOrder = {2},
  Relevance      = {Paper about lit. reviews},
  Field          = {Medical},
  Quality        = {Peer Reviewed Journal, SJR H-Index 251}
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@Book{             ProjectManagementInstitute2008GuideProjecManage,
  IDs            = {PMI2008PMBOKGuide},
  Author         = {{Project Management Institute}},
  Date           = {2008},
  Title          = {A Guide to the Project Management Body of Knowledge
                  ({PMBOK} {Guide})},
  Publisher      = {Project Management Institute},
  Address        = {Newtown Square, Pa},
  Edition        = {4},
  SearchLogKey   = {SL0001},
  SearchLogOrder = {4},
  Relevance      = {Define, Significance},
  Field          = {Project Management},
  Quality        = {Industry Standard, Book}
}

@Book{             ProjectManagementInstitute2017GuideProjecManage,
  IDs            = {PMI2017PMBOKGuide},
  Author         = {{Project Management Institute}},
  Date           = {2017},
  Title          = {A Guide to the Project Management Body of Knowledge
                  ({PMBOK} {Guide}) - Sixth Edition and Agile Practice Guide
                  ({English})},
  Publisher      = {Project Management Institute},
  Address        = {Pennsylvania},
  SearchLogKey   = {SL0015},
  SearchLogOrder = {1},
  Relevance      = {Foundational Knowledge},
  Field          = {Project Management},
  Quality        = {Industry Standard, Book}
}

@Book{             ProjectManagementInstitute2021StandaProjecManage,
  IDs            = {PMI2021PMBOKGuide},
  Author         = {{Project Management Institute}},
  Date           = {2021},
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  Title          = {The Standard for Project Management and a Guide to the
                    Project Management Body of Knowledge ({PMBOK} {Guide})},
  Publisher      = {Project Management Institute},
  Address        = {Pennsylvania},
  Edition        = {7},
  SearchLogKey   = {SL0015},
  SearchLogOrder = {2},
  Relevance      = {Foundational Knowledge},
  Field          = {Project Management},
  Quality        = {Industry Standard, Book}
}

@Article{          QiuEtAl2023ErgonoResearAgricu,
  Author         = {Qiu, Bianbian and Zhang, Yongfu and Shen, Hui and Zhou,
                    Jiping and Chu, Lei},
  Date           = {2023},
  Title          = {Ergonomic Researches in Agricultural Machinery - A
                    Systematic Review Using the {PRISMA} Method},
  Journal        = {International Journal of Industrial Ergonomics},
  Publisher      = {Elsevier},
  Volume         = {95},
  Number         = {103446},
  SearchLogKey   = {SL0013},
  SearchLogOrder = {2},
  Relevance      = {Engineering research using PRISMA},
  Field          = {Engineering},
  Quality        = {Peer Reviewed Journal, SJR H-Index 95}
}

@Article{          Reutiman2012DefectInformShould,
  Author         = {Reutiman, Joseph L},
  Date           = {2012},
  Title          = {Defective Information: Should Information Be a Product
                    Subject to Products Liability Claims},
  Journal        = {Cornell Journal of Law and Public Policy},
  Volume         = {22},
  Pages          = {181},
  SearchLogKey   = {SL0002},
  SearchLogOrder = {10},
  Relevance      = {Define, Significance},
  Field          = {Legal},
  Quality        = {Not Checked},
  ReadStatus     = {Unread}
}

@Article{          Rockart1979ChiefExecutDefine,
  Author         = {Rockart, J. F.},
  Date           = {1979},
  Title          = {Chief Executives Define Their Own Data Needs},
  Journal        = {Harvard Business Review},
  Volume         = {57},
  Number         = {2},
  Pages          = {81-93},
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  SearchLogKey   = {SL0001},
  SearchLogOrder = {11},
  Relevance      = {Foundational Knowledge},
  Field          = {Management},
  Quality        = {Magazine, SJR H-Index 206}
}

@Article{          Russell2005OverviIntegrResear,
  Author         = {Russell, Cynthia L},
  Date           = {2005},
  Title          = {An Overview of the Integrative Research Review},
  Journal        = {Progress in Transplantation},
  Volume         = {15},
  Number         = {1},
  Pages          = {8-13},
  SearchLogKey   = {SL0011},
  SearchLogOrder = {3},
  Relevance      = {Paper about lit. reviews},
  Field          = {Medical},
  Quality        = {Peer Reviewed Journal, SJR H-Index 46}
}

@Book{             SchermerhornEtAl2022ExplorManage,
  Author         = {Schermerhorn, John R. and Bachrach, Daniel G. and Woods,
                    Peter and Junaid, Fatima and McKeown, Tui and Co, Mary
                    Jessalyn},
  Date           = {2022},
  Title          = {Exploring Management},
  Publisher      = {Wiley},
  Address        = {Melbourne},
  Edition        = {1st (Asia-Pacific)},
  SearchLogKey   = {SL0014},
  SearchLogOrder = {1},
  Relevance      = {Foundational Knowledge},
  Field          = {Management},
  Quality        = {University Textbook}
}

@Online{           SemanticScholar2024FreeAI-PowResear,
  Author         = {{Semantic Scholar}},
  Date           = {2024},
  Title          = {A Free, {AI}-Powered Research Tool for Scientific
                    Literature},
  URL            = {https://www.semanticscholar.org/},
  URLDate        = {2024-04-17},
  SearchLogKey   = {SL0001},
  SearchLogOrder = {7},
  Relevance      = {Research Methodology},
  Field          = {Multidisciplinary},
  Quality        = {Academic Database}
}

@Article{          Snyder2019LiteraReviewResear,
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  Author         = {Hannah Snyder},
  Date           = {2019},
  Title          = {Literature Review as a Research Methodology: An Overview
                   and Guidelines},
  Journal        = {Journal of Business Research},
  Volume         = {104},
  Pages          = {333-339},
  SearchLogKey   = {SL0001},
  SearchLogOrder = {6},
  Relevance      = {Research Methodology},
  Field          = {Business Research},
  Quality        = {Peer Reviewed Journal, SJR H-Index 265}
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@InCollection{     StrongEtAl2014TeachiLearniCurric,
  Author         = {Strong, Diane M and Fisher, Craig and Feinstein, David L
                   and Longenecker, Herbert E},
  Date           = {2014},
  Title          = {Teaching, Learning, and Curriculum Development to Support
                   Managing Information as a Product},
  BookTitle      = {Information Quality},
  Publisher      = {Routledge},
  Pages          = {217-229},
  SearchLogKey   = {SL0002},
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  Field          = {Management},
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@Book{             Thiel2014ResearMethodEngine,
  Author         = {Thiel, David V.},
  Date           = {2014},
  Title          = {Research Methods for Engineers},
  Publisher      = {Cambridge University Press},
  SearchLogKey   = {SL0001},
  SearchLogOrder = {1},
  Relevance      = {Foundational Knowledge},
  Field          = {Engineering},
  Quality        = {University Textbook}
}

@Article{          ThorpeEtAl2021ManagiSustaiAsset,
  Author         = {Thorpe, David and Aghili, Nasim and van Neuren, Craig},
  Date           = {2021},
  Title          = {Managing Sustainable Asset Networks Using Advanced
                   Information Systems},
  Journal        = {2021 International Conference on Maintenance and
                   Intelligent Asset Management (ICMIAM)},
  Publisher      = {IEEE Xplore},
  Pages          = {1-6},
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  SearchLogOrder = {5},
  Relevance      = {Define, Significance},
  Field          = {Engineering},
  Quality        = {Peer Reviewed Conference}
}

@Article{          Torraco2016WritinIntegrLitera,
  Author         = {Torraco, Richard J},
  Date           = {2016},
  Title          = {Writing Integrative Literature Reviews: Using the Past
                   and Present to Explore the Future},
  Journal        = {Human Resource Development Review},
  Volume         = {15},
  Number         = {4},
  Pages          = {404-428},
  SearchLogKey   = {SL0011},
  SearchLogOrder = {2},
  Relevance      = {Paper about lit. reviews},
  Field          = {Human Resources},
  Quality        = {Peer Reviewed Journal, SJR H-Index 62}
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@Manual{           UniversityofSouthernQueensland2020HarvarAGPSRefere,
  IDs            = {UniSouthernQld2020HarvarAGPSRefere,UniSQ2020HarvarAGPSRefere},
  Author         = {{University of Southern Queensland}},
  Date           = {2020},
  Title          = {Harvard {AGPS} Referencing Guide},
  Address        = {Toowoomba},
  Edition        = {PDF version},
  URL            = {https://www.unisq.edu.au/library/
                   referencing/harvard-agps-referencing-guide},
  URLDate        = {2024-02-16},
  SearchLogKey   = {SL0001},
  SearchLogOrder = {9},
  Relevance      = {Foundational Knowledge},
  Field          = {Engineering},
  Quality        = {University Policy and Guide}
}

@Article{          Wang1998ProducPerspeon,
  Author         = {Wang, Richard Y},
  Date           = {1998},
  Title          = {A Product Perspective on Total Data Quality Management},
  Journal        = {Communications of the ACM},
  Publisher      = {Association for Computing Machinery},
  Address        = {New York},
  Volume         = {41},
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  SearchLogKey   = {SL0002},
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  Field          = {Management},
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  Quality        = {Journal, SJR H-Index 241}
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@Article{          WangEtAl1998ManageYourInform,
  Author         = {Wang, Richard Y and Lee, Yang W and Pipino, Leo L and
                    Strong, Diane M},
  Date           = {1998},
  Title          = {Manage Your Information as a Product},
  Journal        = {MIT Sloan Management Review},
  Volume         = {39},
  Number         = {4},
  Pages          = {95-105},
  SearchLogKey   = {SL0002},
  SearchLogOrder = {1},
  Relevance      = {Define, Significance},
  Field          = {Management},
  Quality        = {Journal, SJR H-Index 113}
}

@InCollection{     WangEtAl2002InformProducApproa,
  Author         = {Wang, Richard Y and Allen, Thomas J and Harris, Wesley
                    and Madnick, Stuart},
  Date           = {2002},
  Title          = {An Information Product Approach for Total Information
                    Awareness},
  Publisher      = {MIT Sloan School of Management},
  SearchLogKey   = {SL0002},
  SearchLogOrder = {4},
  Relevance      = {Define, Significance},
  Field          = {Management},
  Quality        = {Not Checked, University Press, Working Paper},
  ReadStatus     = {Unread}
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@Article{          Weinberg1974BiblioCoupliReview,
  Author         = {Weinberg, Bella Hass},
  Date           = {1974},
  Title          = {Bibliographic Coupling: A Review},
  Journal        = {Information Storage and Retrieval},
  Volume         = {10},
  Number         = {5-6},
  Pages          = {189-196},
  SearchLogKey   = {SL0004},
  SearchLogOrder = {2},
  Relevance      = {Research Methodology},
  Field          = {Information Science},
  Quality        = {Peer Reviewed Journal, SJR H-Index 123},
  ReadStatus     = {Read},
  NoteNoPrint    = {Journal continued as Information Processing and
                    Management from 1975}
}

@Article{          WhiteEtAl2006ContenAnalysFlexib,
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  Author         = {White, Marilyn Domas and Marsh, Emily E},
  Date           = {2006},
  Title          = {Content Analysis: A Flexible Methodology},
  Journal        = {Library Trends},
  Publisher      = {Johns Hopkins University Press},
  Volume         = {55},
  Number         = {1},
  Pages          = {22-45},
  SearchLogKey   = {SL0018},
  SearchLogOrder = {1},
  Relevance      = {Research Methodology},
  Field          = {Project Management},
  Quality        = {Peer Reviewed Journal, SJR H-Index 55}
}

@Article{          WooEtAl2021NursesExperiVolunt,
  Author         = {Woo, Ming Wei Jeffrey and Avery, Mark James},
  Date           = {2021},
  Title          = {Nurses' Experiences in Voluntary Error Reporting: An
                   Integrative Literature Review},
  Journal        = {International Journal of Nursing Sciences},
  Volume         = {8},
  Number         = {4},
  Pages          = {453-469},
  SearchLogKey   = {SL0011},
  SearchLogOrder = {1},
  Relevance      = {Not a paper about lit. reviews},
  Field          = {Medical},
  Quality        = {Not Relevant, Excluded}
}

@Article{          Zhebit2021InformProducCollap,
  Author         = {Zhebit, V. A.},
  Date           = {2021},
  Title          = {Information as a Product of Collapsing Consciousness
                   (Quantum Model)},
  Journal        = {Automatic Documentation and Mathematical Linguistics},
  Volume         = {55},
  Number         = {6},
  Pages          = {243-248},
  SearchLogKey   = {SL0002},
  SearchLogOrder = {9},
  Relevance      = {Not Relevant, Excluded},
  Field          = {Physics},
  Quality        = {Unknown}
}

@Article{          Zielińska2016InformMarketProduc,
  Author         = {Zielińska, Anetta},
  Date           = {2016},
  Title          = {Information as a Market Product and Information Markets},
  Journal        = {Czech Journal of Social Sciences Business and Economics},
  Volume         = {5},
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  Number         = {4},
  Pages          = {31-39},
  SearchLogKey   = {SL0002},
  SearchLogOrder = {2},
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  Field          = {Economics},
  Quality        = {Not Checked},
  ReadStatus     = {Unread}
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@Article{          Zwikael2009RelatiImportPMBOK,
  Author         = {Ofer Zwikael},
  Date           = {2009},
  Title          = {The Relative Importance of the {PMBOK} {Guide's} Nine
                   Knowledge Areas During Project Planning},
  Journal        = {Project Management Journal},
  Volume         = {40},
  Number         = {4},
  Pages          = {94-103},
  SearchLogKey   = {SL0001},
  SearchLogOrder = {3},
  Relevance      = {Define, Significance},
  Field          = {Project Management},
  Quality        = {Peer Reviewed Journal, SJR H-Index 55}
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@Article{          AamirEtAl2012ExaminCriticSucces,
  Author         = {M. Aamir and Obaid-Ur-Rehman Khattak and Yuanguan She and
                    M. Irfan and Riffat Aasmah Khattak and M. Shoaib and M.
                    Khattak},
  Date           = {2012},
  Title          = {Examining Critical Success Factors Affecting {ERP}
                    Implementations in Enterprises of {Pakistan}},
  Journal        = {Interdisciplinary Journal of Contemporary Research in
                    Business},
  URLSS          = {https://www.semanticscholar.org/paper/
                    0e7507831d45d19a620b5bc32149c18dd62b0d28},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Unknown},
  Field          = {Unknown},
  Quality        = {Journal Appears Defunct, SJR Not Indexed, Full Text Not
                    Available to Researcher, Excluded}
}

@Book{             Al-HinaiEtAl2011PreparPeopleManage,
  Author         = {H. Al-Hinai and H. Edwards},
  Date           = {2011},
  Title          = {Preparing People to Manage, Support and Use Enterprise
                    Systems in an {Arabian} {Gulf} Context},
  URLSS          = {https://www.semanticscholar.org/paper/
                    456992db02f94e6390b25f206ee4f9339356594e},
  DOISS          = {10.4018/978-1-60960-048-8.CH008},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Unknown},
  Field          = {Unknown},
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}

@Book{             AliEtAl2013DecisiSupporSystem,
  Author         = {Mahmood Ali and Yingfa Xie and J. Cullinane},
  Date           = {2013},
  Title          = {A Decision Support System for {ERP} Implementation In
                    Small and Medium-Sized Enterprises},
  URLSS          = {https://www.semanticscholar.org/paper/
                    2c2386aeb21a36d80356d8d61ff1794eccdd0262},
  DOISS          = {10.4018/978-1-4666-3664-4.CH007},
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  Quality        = {Book, Full Text Not Available to Researcher, Excluded}
}

@Article{          AliEtAl2017ERPSystemImplem,
  Author         = {Mahmood Ali and Lloyd Miller},
  Date           = {2017},
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  Title          = {{ERP} System Implementation in Large Enterprises - A
                    Systematic Literature Review},
  Journal        = {Journal of Enterprise Information Management},
  Volume         = {30},
  Number         = {4},
  Pages          = {666-692},
  URLSS          = {https://www.semanticscholar.org/paper/
                    0f75ccc0d233e625a3bcbd9e047230cfb07fd075},
  DOISS          = {10.1108/JEIM-07-2014-0071},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Information Product Delivery},
  Field          = {Information Management},
  Quality        = {Peer Reviewed Journal, SJR H-Index 82}
}

@Article{          AmidEtAl2012IdentiClassiERP,
  Author         = {Amin Amid and Morteza Moalagh and Ahad Zare Ravasan},
  Date           = {2012},
  Title          = {Identification and Classification of {ERP} Critical
                    Failure Factors in {Iranian} Industries},
  Journal        = {Information Systems},
  Volume         = {37},
  Pages          = {227-237},
  URLSS          = {https://www.semanticscholar.org/paper/
                    59749d927b6257ef4fbd44c7964f4299851d41d6},
  DOISS          = {10.1016/j.is.2011.10.010},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Information Product Delivery},
  Field          = {Information Management},
  Quality        = {Peer Reviewed Journal, SJR H-Index 96}
}

@Article{          AnjumEtAl2015FactorManipuERP,
  Author         = {Muhammad Jamil Anjum and Saif Khan},
  Date           = {2015},
  Title          = {Factors Manipulate {ERP} Implementation: An Experiential
                    Study From {Pakistan}},
  Journal        = {Research Journal of Applied Sciences, Engineering and
                    Technology},
  Volume         = {9},
  Number         = {8},
  Pages          = {628-636},
  URLSS          = {https://www.semanticscholar.org/paper/
                    943364b0bcf9acebc0af4aabf15fda1a90d7cf2d},
  DOISS          = {10.19026/RJASET.9.1447},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Information Product Delivery},
  Field          = {Management and Human Resource Development},
  Quality        = {Peer Reviewed Journal, SJR H-Index 38}
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@Article{          BarthEtAl2019CriticSuccesFactor,
  Author         = {Christian Barth and S. Koch},
  Date           = {2019},
  Title          = {Critical Success Factors in {ERP} Upgrade Projects},
  Journal        = {Industrial Management \& Data Systems},
  Volume         = {119},
  Number         = {3},
  Pages          = {656-675},
  URLSS          = {https://www.semanticscholar.org/paper/
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  DOISS          = {10.1108/IMDS-01-2018-0016},
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  SearchLogOrder = {No Sort Order},
  Relevance      = {Information Product Delivery},
  Field          = {Information Engineering},
  Quality        = {Peer Reviewed Journal, SJR H-Index 125}
}

@Article{          BasogluEtAl2007OrganiAdoptiEnterp,
  Author         = {N. Basoglu and T. Daim and O. Kerimoglu},
  Date           = {2007},
  Title          = {Organizational Adoption of Enterprise Resource Planning
                    Systems: A Conceptual Framework},
  Journal        = {The Journal of High Technology Management Research},
  Volume         = {18},
  Pages          = {73-97},
  URLSS          = {https://www.semanticscholar.org/paper/
                    1e0a46f19337f79af20f91792c8886240895147d},
  DOISS          = {10.1016/J.HITECH.2007.03.005},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Information Product Delivery},
  Field          = {Technology Management},
  Quality        = {Peer Reviewed Journal, SJR H-Index 55}
}

@Article{          BazhairEtAl2015FactorChangeManage,
  Author         = {A. Bazhair and K. Sandhu},
  Date           = {2015},
  Title          = {Factors of Change Management and Perceived Ease of Use
                    Affecting {ERP} Acceptance and Financial Performance of
                    {Saudi} {Arabia} Listed Companies},
  Journal        = {European Journal of Computer Science Information
                    Technology},
  Volume         = {3},
  Number         = {2},
  Pages          = {41-55},
  URLSS          = {https://www.semanticscholar.org/paper/
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  Field          = {Business},
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@Article{          Chan2013AustraQuantiSurvey,
  Author         = {Chan, Eric},
  Date           = {2013},
  Title          = {Australian Quantity Surveyors Utilize {ICT} and {ERP}
                   System to Improve Efficiency},
  Journal        = {Engineering Management Reviews},
  Volume         = {2},
  Number         = {4},
  Pages          = {103-114},
  URLSS          = {https://www.semanticscholar.org/paper/
                   686c5961e8d04ef2e42cd697f6a8277a8128fdec},
  SearchLogKey   = {SL0005},
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  Relevance      = {Information Product Delivery},
  Field          = {Engineering Management},
  Quality        = {Peer Reviewed Journal, SJR Not Indexed}
}

@Article{          ChatzoglouEtAl2016AnteceOutcomERP,
  Author         = {Chatzoglou, Prodromos and Chatzoudes, Dimitrios and
                   Apostolopoulou, Georgia},
  Date           = {2016},
  Title          = {Antecedents and Outcomes of {ERP} Implementation
                   Success},
  Journal        = {2016 Federated Conference on Computer Science and
                   Information Systems (FedCSIS)},
  Pages          = {1253-1262},
  URLSS          = {https://www.semanticscholar.org/paper/
                   12deea329af66763942f5876a1aaae4b4ed9f9fc},
  DOISS          = {10.15439/2016F1},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Information Product Delivery},
  Field          = {Management Engineering},
  Quality        = {Peer Reviewed Conference, SJR H-Index 17}
}

@Article{          CorreaEtAl2005Meta-ASobreImplan,
  Author         = {P. R. Correa and R. G. Cruz},
  Date           = {2005},
  Title          = {Meta-Análisis Sobre La Implantacion De Sistemas De
                   Planificación De Recursos Empresariales ({ERP})},
  Journal        = {Journal of Information Systems and Technology
                   Management},
  Volume         = {2},
  Pages          = {245-273},
  URLSS          = {https://www.semanticscholar.org/paper/
                   dad386c6a87224a8d53a183343912a0727895eb8},
  DOISS          = {10.1590/S1807-17752005000300002},
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  Relevance      = {Unknown},
  Field          = {Unknown},
  Quality        = {Not English Language, Excluded}
}

@Article{          CoşkunEtAl2022ERPFailurSystem,
  Author         = {Evren Coşkun and Bahar Gezici and Murat Aydos and A.
                    Tarhan and V. Garousi},
  Date           = {2022},
  Title          = {{ERP} Failure: A Systematic Mapping of the Literature},
  Journal        = {Data \& Knowledge Engineering},
  Volume         = {142},
  Pages          = {1-23},
  URLSS          = {https://www.semanticscholar.org/paper/
                    c26b88fbfddf8f9e2d5906b96b4e3c38c130ea59},
  DOISS          = {10.1016/j.datak.2022.102090},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Information Product Delivery},
  Field          = {Computer Engineering},
  Quality        = {Peer Reviewed Journal, SJR H-Index 94}
}

@Article{          FinneyEtAl2007ERPImplemCompil,
  Author         = {Sherry Finney and Martin Corbett},
  Date           = {2007},
  Title          = {{ERP} Implementation: A Compilation and Analysis of
                    Critical Success Factors},
  Journal        = {Business Process Management Journal},
  Volume         = {13},
  Number         = {3},
  Pages          = {329-347},
  URLSS          = {https://www.semanticscholar.org/paper/
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  DOISS          = {10.1108/14637150710752272},
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  Relevance      = {Information Product Delivery},
  Field          = {Organisational Management},
  Quality        = {Peer Reviewed Journal, SJR H-Index 95}
}

@Article{          GargEtAl2013EmpiriStudyon,
  Author         = {Poonam Garg and Atul Garg},
  Date           = {2013},
  Title          = {An Empirical Study on Critical Failure Factors For
                    Enterprise Resource Planning Implementation in {Indian}
                    Retail Sector},
  Journal        = {Business Process Management Journal},
  Volume         = {19},
  Number         = {3},
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  Pages          = {496-514},
  URLSS          = {https://www.semanticscholar.org/paper/
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  SearchLogOrder = {No Sort Order},
  Relevance      = {Information Product Delivery},
  Field          = {Information Technology},
  Quality        = {Peer Reviewed Journal, SJR H-Index 95}
}

@Article{          GargEtAl2014CriticSuccesFactor,
  Author         = {Poonam Garg and Divya Agarwal},
  Date           = {2014},
  Title          = {Critical Success Factors for {ERP} Implementation in a
                    {Fortis} Hospital: An Empirical Investigation},
  Journal        = {Journal of Enterprise Information Management},
  Volume         = {27},
  Number         = {4},
  Pages          = {402-423},
  URLSS          = {https://www.semanticscholar.org/paper/
                    06ffc7c826aec11b0abf4af634f10e65987a729c},
  DOISS          = {10.1108/JEIM-06-2012-0027},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Information Product Delivery},
  Field          = {Information Technology},
  Quality        = {Peer Reviewed Journal, SJR H-Index 82}
}

@Article{          GargEtAl2014FactorInflueERP,
  Author         = {Poonam Garg and Atul Garg},
  Date           = {2014},
  Title          = {Factors Influencing {ERP} Implementation in Retail
                    Sector: An Empirical Study From {India}},
  Journal        = {Journal of Enterprise Information Management},
  Volume         = {27},
  Number         = {4},
  Pages          = {424-448},
  URLSS          = {https://www.semanticscholar.org/paper/
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  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Information Product Delivery},
  Field          = {Information Technology},
  Quality        = {Peer Reviewed Journal, SJR H-Index 82}
}

@Article{          GargEtAl2015FactorAffectERP,
  Author         = {Poonam Garg and A. Chauhan},
  Date           = {2015},
  Title          = {Factors Affecting the {ERP} Implementation in {Indian}
                    Retail Sector: A Structural Equation Modelling Approach},
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  Journal        = {Benchmarking: An International Journal},
  Volume         = {22},
  Number         = {7},
  Pages          = {1315-1340},
  URLSS          = {https://www.semanticscholar.org/paper/
                   fe70ffec25e54d9004fcebe8b91231c22c19c69f},
  DOISS          = {10.1108/BIJ-11-2013-0104},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Information Product Delivery},
  Field          = {Information Technology},
  Quality        = {Peer Reviewed Journal, SJR H-Index 20}
}

@Article{          HuangEtAl2021CriticSuccesFactor,
  Author         = {Qian Huang and M. Rahim and Susan Foster and Misita
                   Anwar},
  Date           = {2021},
  Title          = {Critical Success Factors Affecting Implementation of
                   Cloud {ERP} Systems: A Systematic Literature Review With
                   Future Research Possibilities},
  Journal        = {Proceedings of the 54th Hawaii International Conference
                   on System Sciences},
  Pages          = {4683-4692},
  URLSS          = {https://www.semanticscholar.org/paper/
                   8eec7bd6a17487260553b58d6d9fcadd33df66b1},
  DOISS          = {10.24251/HICSS.2021.569},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Information Product Delivery},
  Field          = {Information Technology},
  Quality        = {Peer Reviewed Conference, SJR H-Index 98}
}

@Article{          KhattakEtAl2013InvestCriticSucces,
  Author         = {Muhammad Aamir Obaid Khattak and Yuanguan She and Z.
                   Memon and Nausheen Syed and Shariq Hussain and M. Irfan},
  Date           = {2013},
  Title          = {Investigating Critical Success Factors Affecting {ERP}
                   Implementation in {Chinese} and {Pakistani} Enterprises},
  Journal        = {International Journal of Enterprise Information Systems},
  Volume         = {9},
  Number         = {3},
  Pages          = {39-76},
  URLSS          = {https://www.semanticscholar.org/paper/
                   4ba49f30c8b67c991480bbd3ec798d6b216a28f9},
  DOISS          = {10.4018/jeis.2013070103},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Information Product Delivery},
  Field          = {Management},
  Quality        = {Peer Reviewed Journal, SJR H-Index 27}
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@Article{          Lafiguera2016BigBangVersus,
  Author         = {George B Lafiguera},
  Date           = {2016},
  Title          = {A Big Bang Versus a Small Bang Approach: A Case Study Of
                    the Expeditionary Combat Support System ({ECSS}) and The
                    Maintenance, Repair, and Overhaul Initiative ({MROi})},
  URLSS          = {https://www.semanticscholar.org/paper/
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  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Unknown},
  Field          = {Unknown},
  Quality        = {Thesis, Excluded}
}

@Article{          MahrazEtAl2020CompilAnalysCritic,
  Author         = {Mohamed-Iliasse Mahraz and L. Benabbou and A. Berrado},
  Date           = {2020},
  Title          = {A Compilation and Analysis of Critical Success Factors
                    for the {ERP} Implementation},
  Journal        = {International Journal of Enterprise Information Systems},
  Volume         = {16},
  Number         = {2},
  Pages          = {107-133},
  URLSS          = {https://www.semanticscholar.org/paper/
                    f0638f4281d7e2d81e84b2dd9076e54659c1d3b2},
  DOISS          = {10.4018/ijeis.2020040107},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Information Product Delivery},
  Field          = {Engineering Management},
  Quality        = {Peer Reviewed Journal, SJR H-Index 27}
}

@Article{          NgaiEtAl2008ExaminCriticSucces,
  Author         = {E. Ngai and Chuck C. H. Law and F.K.T. Wat},
  Date           = {2008},
  Title          = {Examining the Critical Success Factors in the Adoption Of
                    Enterprise Resource Planning},
  Journal        = {Computers in Industry},
  Volume         = {59},
  Pages          = {548-564},
  URLSS          = {https://www.semanticscholar.org/paper/
                    b7ec80b305ee1705a107989b4a56a24801084dbd},
  DOISS          = {10.1016/j.compind.2007.12.001},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Information Product Delivery},
  Field          = {Marketing Management},
  Quality        = {Peer Reviewed Journal, SJR H-Index 129}
}
```

```
@Article{          Nikitović2014Upravlkriticcimben,
  Author         = {Milorad Nikitović},
  Date           = {2014},
  ShortTitle     = {Upravljanje kriti\v{c}nim \v{c}imbenicima uspje\v{s}nosti
                    primjene {ERP} sustava pomo\'{c}u Bayesovih mre\v{z}a
                    vjerojatnosti},
  Title          = {Upravljanje kritičnim čimbenicima uspješnosti primjene
                    {ERP} sustava pomoću Bayesovih mreža vjerojatnosti},
  URLSS          = {https://www.semanticscholar.org/paper/
                    88e5b77e474ccaac56ad1a90144847ccaaa65bd6},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Unknown},
  Field          = {Unknown},
  Quality        = {Thesis, Not English Language, Excluded}
}

@Article{          Nkasu2019InvestEffectCritic,
  Author         = {Michael M. Nkasu},
  Date           = {2019},
  Title          = {Investigation of the Effects of Critical Success Factors
                    on Enterprise Resource Planning ({ERP}) Systems
                    Implementation in the {United} {Arab} {Emirates}},
  Journal        = {Smart Intelligent Computing and Applications},
  URLSS          = {https://www.semanticscholar.org/paper/
                    95f55d666b2d28fc44e3f7bd11fa497518987863},
  DOISS          = {10.1007/978-981-13-9282-5_58},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Unknown},
  Field          = {Unknown},
  Quality        = {Full Text Not Available to Researcher, Excluded}
}

@Article{          Nousiainen2015ToiminKäyttOton,
  Author         = {Riku Nousiainen},
  Date           = {2015},
  Title          = {Toiminnanohjausjärjestelmän Käyttöön- Oton
                    Ongelmat},
  URLSS          = {https://www.semanticscholar.org/paper/
                    e0ce98d0c4c41839a7c91bab9ebe9941762d9655},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Unknown},
  Field          = {Unknown},
  Quality        = {Not English Language, Excluded}
}

@Article{          OsmanEtAl2019ERPCriticSucces,
  Author         = {Nafisa Osman and A. Sahraoui},
  Date           = {2019},
  Title          = {{ERP} Critical Success Factors: Software System
                    Engineering Perspective},
```

```
  Journal        = {International Journal of Computer Applications},
  Volume         = {182},
  Number         = {42},
  Pages          = {35-42},
  URLSS          = {https://www.semanticscholar.org/paper/
                    f9a77244adfe0c677c720d6e674d95ce469239e7},
  DOISS          = {10.5120/ijca2019918501},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Information Product Delivery},
  Field          = {Information Technology},
  Quality        = {Peer Reviewed Journal, SJR Not Indexed}
}

@Article{          Panga2014FactorInflueImplem,
  Author         = {Albert L Panga},
  Date           = {2014},
  Title          = {Factors Influencing Implementation of Enterprise Resource
                    Planning in Firms: A Case of Geothermal Development
                    Company in {Nairobi}, {Kenya}},
  URLSS          = {https://www.semanticscholar.org/paper/
                    13d2b00c2fdefc9488252d752d9a85fbf445c84f},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Unknown},
  Field          = {Unknown},
  Quality        = {Thesis, Full Text Not Available to Researcher, Excluded}
}

@Article{          Rabaai2009IdentiCriticSucces,
  Author         = {Ahmad A. Rabaa'i},
  Date           = {2009},
  Title          = {Identifying Critical Success Factors of {ERP} Systems at
                    the Higher Education Sector},
  Journal        = {Third International Symposium on Innovation in
                    Information \& Communication Technology},
  Pages          = {1-16},
  URLSS          = {https://www.semanticscholar.org/paper/
                    3d225b83482fb5f4985c64a965e14d9d4a4793a1},
  DOISS          = {10.14236/EWIC/ISIICT2009.12},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Information Product Delivery},
  Field          = {Information Technology},
  Quality        = {Peer Reviewed Conference, SJR Not Indexed}
}

@Article{          RabaaiEtAl2009ERPSystemHigher,
  Author         = {Ahmad A. Rabaa'i and W. Bandara and G. Gable},
  Date           = {2009},
  Title          = {{ERP} Systems in the Higher Education Sector: A
                    Descriptive Case Study},
  Journal        = {Proceedings of the 20th Australasian Conference on
```

```
                  Information Systems},
  Pages           = {456-470},
  URLSS           = {https://www.semanticscholar.org/paper/
                  7f73be78b9e6b225e4fe35070bcd003365c69224},
  SearchLogKey    = {SL0005},
  SearchLogOrder  = {No Sort Order},
  Relevance       = {Information Product Delivery},
  Field           = {Information Technology},
  Quality         = {Peer Reviewed Conference, SJR H-Index 9}
}

@Article{         RabaaiEtAl2015CulturPerspeon,
  Author          = {Ahmad A. Rabaa'i and Enas AlJamal},
  Date            = {2015},
  Title           = {Cultural Perspectives on {ERP} Implementation in
                  {Jordan}: A Comparison Between Public and Private
                  Sectors},
  Journal         = {International Journal of Intercultural Information
                  Management},
  Volume          = {5},
  Pages           = {83-102},
  URLSS           = {https://www.semanticscholar.org/paper/
                  4aa2321467bf2d5c3fc5456fa3942b1aa90ec75e},
  DOISS           = {10.1504/ijiim.2015.072545},
  SearchLogKey    = {SL0005},
  SearchLogOrder  = {No Sort Order},
  Relevance       = {Information Product Delivery},
  Field           = {Information Technology},
  Quality         = {Peer Reviewed Journal, SJR Not Indexed}
}

@Article{         RabaaiEtAl2016SuccesFactorEnterp,
  Author          = {Ahmad A. Rabaa'i and J. Gammack},
  Date            = {2016},
  Title           = {Success Factors for Enterprise Systems in the Higher
                  Education Sector: A Case Study},
  Journal         = {International Journal of Engineering Science Invention},
  Pages           = {46-61},
  URLSS           = {https://www.semanticscholar.org/paper/
                  f745508bddf899e80508f34f629670f13530c689},
  SearchLogKey    = {SL0005},
  SearchLogOrder  = {No Sort Order},
  Relevance       = {Information Product Delivery},
  Field           = {Information Technology},
  Quality         = {Peer Reviewed Journal, SJR Not Indexed}
}

@Article{         RavasanEtAl2014FCM-BaDynamiModeli,
  Author          = {Ahad Zare Ravasan and Taha Mansouri},
  Date            = {2014},
  Title           = {A {FCM}-Based Dynamic Modeling of {ERP} Implementation
                  Critical Failure Factors},
  Journal         = {International Journal of Enterprise Information Systems},
```

```
  Volume         = {10},
  Pages          = {32-52},
  URLSS          = {https://www.semanticscholar.org/paper/
                   c754509a47cdf90092610e0b0d76312b9a382615},
  DOISS          = {10.4018/ijeis.2014010103},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Information Product Delivery},
  Field          = {Information Technology Management},
  Quality        = {Peer Reviewed Journal, SJR H-Index 27}
}

@Article{          SalimifardEtAl2010NoticeRetracInvest,
  Author         = {K. Salimifard and M. Ebrahimi and M. Abbaszadeh},
  Date           = {2010},
  Title          = {Notice of Retraction: Investigating Critical Success
                   Factors in {ERP} Implementation Projects},
  Journal        = {2010 IEEE International Conference on Advanced Management
                   Science (ICAMS 2010)},
  Volume         = {3},
  Pages          = {82-86},
  URLSS          = {https://www.semanticscholar.org/paper/
                   7d5c2c6b8cbbfdaf8183b2e73be17b5493ab1d1d},
  DOISS          = {10.1109/ICAMS.2010.5553281},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Unknown},
  Field          = {Unknown},
  Quality        = {Notice of Retraction, Excluded}
}

@Article{          Sayegh2010FactorAffectImplem,
  Author         = {Deema Raouf Sayegh},
  Date           = {2010},
  Title          = {Factors Affecting the Implementation of {ERP} Systems In
                   Organisations in the {U.A.E.}},
  URLSS          = {https://www.semanticscholar.org/paper/
                   418d3aa5908e85468b205717e07b1d6a7d1484a6},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Unknown},
  Field          = {Unknown},
  Quality        = {Dissertation, Excluded}
}

@InBook{           SaygiliEtAl2017ContemIssuesEnterp,
  Author         = {Ebru E. Saygili and Arikan Tarik Saygili},
  Editor         = {Tavana, M.},
  Date           = {2017},
  Title          = {Contemporary Issues in Enterprise Information Systems: A
                   Critical Review of {CSFs} in {ERP} Implementations},
  BookTitle      = {Enterprise Information Systems and the Digitalization of
                   Business Functions},
```

```
  Pages          = {120-136},
  URLSS          = {https://www.semanticscholar.org/paper/
                    8878310bee17090a190837465a497e15a59d3a1c},
  DOISS          = {10.4018/978-1-5225-2382-6.CH006},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Unknown},
  Field          = {Unknown},
  Quality        = {Book, Excluded}
}

@Article{          SaygiliEtAl2017EndUsersPercep,
  Author         = {Saygili, Ebru E and Ozturkoglu, Yucel and Kocakulah,
                    Mehmet C},
  Date           = {2017},
  Title          = {End Users' Perceptions of Critical Success Factors In
                    {ERP} Applications},
  Journal        = {International Journal of Enterprise Information Systems},
  Volume         = {13},
  Number         = {4},
  Pages          = {58-75},
  URLSS          = {https://www.semanticscholar.org/paper/
                    364db0794c3c967f785c3e1ab45883b2bded08e5},
  DOISS          = {10.4018/IJEIS.2017100104},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Information Product Delivery},
  Field          = {Business Administration},
  Quality        = {Peer Reviewed Journal, SJR H-Index 27}
}

@Article{          SethEtAl2015DeveloModelSucces,
  Author         = {Manisha Seth and D. Goyal and R. Kiran},
  Date           = {2015},
  Title          = {Development of a Model for Successful Implementation Of
                    Supply Chain Management Information System in {Indian}
                    Automotive Industry},
  Journal        = {Vision},
  Volume         = {19},
  Number         = {3},
  Pages          = {248-262},
  URLSS          = {https://www.semanticscholar.org/paper/
                    6d2d30ce6479a2b778c74885eac3752949391082},
  DOISS          = {10.1177/0972262915599465},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Information Product Delivery},
  Field          = {Business Management},
  Quality        = {Peer Reviewed Journal, SJR H-Index 24}
}

@Article{          ShaulEtAl2013CriticSuccesFactor,
  Author         = {Levi Shaul and Doron Tauber},
```

```
  Date           = {2013},
  Title          = {Critical Success Factors in Enterprise Resource Planning
                    Systems: Review of the Last Decade},
  Journal        = {ACM Computing Surveys},
  Volume         = {45},
  Number         = {4},
  Pages          = {1-39},
  URLSS          = {https://www.semanticscholar.org/paper/
                    bf3d0000a24e81b3f5e76e404354cd5d836b22ec},
  DOISS          = {10.1145/2501654.2501669},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Information Product Delivery},
  Field          = {Information Technology},
  Quality        = {Peer Reviewed Journal, SJR H-Index 213}
}

@Article{          ShukorEtAl2020EnterpResourPlanni,
  Author         = {S. A. Shukor and Aida Sheikhi and Amni Husna Mohd
                    Nashir},
  Date           = {2020},
  Title          = {Enterprise Resource Planning ({ERP}) Adaptation In
                    Malaysia Agricultural {SME}: Issues and Trends},
  Journal        = {Journal of Theoretical and Applied Information
                    Technology},
  Volume         = {98},
  Number         = {12},
  Pages          = {2046-2062},
  URLSS          = {https://www.semanticscholar.org/paper/
                    fddb34df6537166ff5d6a72b2dd4b00f5dfd4632},
  SearchLogKey   = {SL0005},
  SearchLogOrder = {No Sort Order},
  Relevance      = {Information Product Delivery},
  Field          = {Information Technology},
  Quality        = {Peer Reviewed Journal, SJR H-Index 39}
}
```

Appendix G

Bibliography Helper Script

The bibhelper python script and its output listings.

Listing G.1: Bibliography Helper Script `bibhelper.py`

```
#!/usr/bin/env python3

"""A bibliography helper (bibhelper) python script.

This script primarily generates information, statistics, and LaTeX table rows
from *.bib input files; and writes the results to *Report.txt and *TableRows.tex
files of matching names. Moreover, this script also contains functions to
manipulate .bib files.

Setup (bash):
    $ chmod +x bibhelper.py

Usage (bash):
    $ ./bibhelper.py Bibliography.bib
    $ ./bibhelper.py --help
"""

import os
import sys
import argparse
import re
import textwrap
import bibtexparser
import bibtexparser.model
import titlecase as tc


def writeToFile(fileName: str, text: str, overwrite=False):
    """Write text to fileName.

    Use (optional) overwrite=True to truncate an existing file, typically at the
    start of operations, otherwise the default is to append. Exits on failure.
    """

    # Set mode to overwrite "w", else append "a".
    if overwrite:
        mode = "w"
    else:
        mode = "a"

    # Try to create file and write text.
    # The file is automatically closed.
    # If the operation fails the application exits with status = 1.
    try:
        with open(fileName, mode=mode, encoding="UTF-8") as f:
            f.write(text + "\n")
    except IOError:
        print(f"Error: could not write file: {fileName}")
        print("Exiting.")
        sys.exit(1)
```

```
def reportSuccessFailBlocks(library: bibtexparser.Library, reportFileName: str):
    """Report success/failed block parsing."""

    if library.failed_blocks:
        text = (
            "Status: Some blocks failed to parse. See command line warnings.\n"
        )
    else:
        text = "Status: All blocks parsed successfully.\n"

    writeToFile(reportFileName, text)


def reportGeneralStats(library: bibtexparser.Library, reportFileName: str):
    """Report general statistics."""

    text = (
        f"Parsed {len(library.blocks)} blocks, including:\n"
        f"\t{len(library.entries)} entries\n"
        f"\t{len(library.comments)} comments\n"
        f"\t{len(library.strings)} strings\n"
        f"\t{len(library.preambles)} preambles\n"
    )

    writeToFile(reportFileName, text)


def reportKeysAsCSV(library: bibtexparser.Library, reportFileName: str):
    """Report entry keys as CSV."""

    keys = [entry.key for entry in library.entries]
    csv = ", ".join(keys)

    text = f"Entry keys as CSV:\n{csv}\n"

    writeToFile(reportFileName, text)


def reportKeysAsLines(library: bibtexparser.Library, reportFileName: str):
    """Report entry keys as lines."""

    keys = [entry.key for entry in library.entries]
    lines = "\n".join(keys)

    text = f"Entry keys:\n{lines}\n"

    writeToFile(reportFileName, text)


def getIncludedExcludedEntryLists(library: bibtexparser.Library):
    """Determine and return included and excluded entry lists."""
```

```
    # Build included and excluded lists.
    # Based on: Quality field contains "Excluded".
    includedList = []
    includedJPList = []
    excludedList = []
    for entry in library.entries:
        q = entry.fields_dict["Quality"].value
        if "Excluded" in q:
            excludedList.append(entry)
        else:
            includedList.append(entry)
            if "Journal" in entry:
                includedJPList.append(entry)

    # Sort included journal paper list by journal.
    includedJPList = sorted(includedJPList, key=lambda d: d["Journal"])
    # Unique journal.
    includedJPList = list({e["Journal"]: e for e in includedJPList}.values())

    return includedList, includedJPList, excludedList


def reportQuality(
    library: bibtexparser.Library, reportFileName: str, fileStemName: str
):
    """Report on quality of the entries, requires Quality field."""

    rowsFileNameSuffix = "TableRows.tex"
    inclRowsFileName = fileStemName + "Incl" + rowsFileNameSuffix
    exclRowsFileName = fileStemName + "Excl" + rowsFileNameSuffix
    inclJPRowsFileName = fileStemName + "InclJP" + rowsFileNameSuffix

    # Get included and excluded entry lists.
    includedList, includedJPList, excludedList = getIncludedExcludedEntryLists(
        library
    )

    # Rewrap journal.
    for e in includedJPList:
        # unwrap
        e.fields_dict["Journal"].value = re.sub(
            r"\s+", " ", e.fields_dict["Journal"].value
        )
        # wrap
        e.fields_dict["Journal"].value = textwrap.fill(
            e.fields_dict["Journal"].value, width=50, subsequent_indent=" " * 4
        )

    # Build the journal table headers.
    inclJPTableRows = ""
    if includedJPList:
        inclJPTableHeaders = "Journal & Quality \\\\\n"
```

```
    for entry in includedJPList:
        inclJPTableRows += (
            f"{entry.fields_dict['Journal'].value} & "
            f"{entry.fields_dict['Quality'].value} \\\\\n"
        )
else:
    inclJPTableHeaders = "No included journals found.\n"

#  Build the included papers table headers.
inclTableRows = ""
if includedList:
    inclTableHeaders = "Paper (cited in lit. review) & Quality \\\\\n"
    for entry in includedList:
        inclTableRows += (
            f"\\textcite{{{entry.key}}} & "
            f"{entry.fields_dict['Quality'].value} \\\\\n"
        )
else:
    inclTableHeaders = "No included entries found.\n"

#  Build the excluded papers table headers.
exclTableRows = ""
if excludedList:
    exclTableHeaders = "Bibliography Data Key (not cited) & Quality \\\\\n"
    for entry in excludedList:
        exclTableRows += (
            f"{entry.key} & {entry.fields_dict['Quality'].value} \\\\\n"
        )
else:
    exclTableHeaders = "No excluded entries found.\n"

# Build the report text.
text = (
    f"Quality summary:\n"
    f"\tIncluded count = {len(includedList)}\n"
    f"\tExcluded count = {len(excludedList)}\n"
    f"\tTotal count = {len(includedList) + len(excludedList)}\n\n"
    f"Generating LaTeX table(s).\n\n"
    "Usage:\n"
    "1. In a LaTeX document, create a table with the provided headers.\n"
    "2. For the rows use: \\input{rowsFileName}\n\n"
    f"Included Journal table (count = {len(includedJPList)}).\n"
    f"Headers:\n{inclJPTableHeaders}"
    f"Rows file:\n{inclJPRowsFileName}\n\n"
    f"Included table (count = {len(includedList)}).\n"
    f"Headers:\n{inclTableHeaders}"
    f"Rows file:\n{inclRowsFileName}\n\n"
    f"Excluded table (count = {len(excludedList)}).\n"
    f"Headers:\n{exclTableHeaders}"
    f"Rows file:\n{exclRowsFileName}\n"
)

# Write table rows to file.
```

```
    print(f"Writing table rows to file: {inclJPRowsFileName}")
    writeToFile(inclJPRowsFileName, inclJPTableRows, overwrite=True)
    print(f"Writing table rows to file: {inclRowsFileName}")
    writeToFile(inclRowsFileName, inclTableRows, overwrite=True)
    print(f"Writing table rows to file: {exclRowsFileName}")
    writeToFile(exclRowsFileName, exclTableRows, overwrite=True)

    # Write report text.
    writeToFile(reportFileName, text)


def reportSearchLog(library: bibtexparser.Library, reportFileName: str):
    """Report on a SearchLog.bib library."""

    rowsFileName = "SearchLogTableRows.tex"

    #  Build the SearchLog table headers.
    tableHeaders = (
        "Search Log Key & Approach & Query & Sorted By & Limited By & "
        "Date & Source & Total Result Count \\\\\n"
    )
    # Wrap text.
    tableHeaders = (
        textwrap.fill(tableHeaders, width=80, subsequent_indent=" " * 4) + "\n"
    )

    # Build the report text.
    text = (
        f"Generating LaTeX table.\n\n"
        "Usage:\n"
        "1. In a LaTeX document, create a table with the provided headers.\n"
        "2. For the rows use: \\input{SearchLogTableRows}\n\n"
        f"Headers:\n{tableHeaders}"
        f"Rows file:\n{rowsFileName}\n"
    )

    # Write table rows to file.
    writeSearchLogTableRows(library, rowsFileName)

    # Write report text.
    writeToFile(reportFileName, text)


def writeSearchLogTableRows(library: bibtexparser.Library, rowsFileName: str):
    """Write the search log table rows, in LaTeX format, to file."""

    #  Build the SearchLog table rows.
    searchLogTableRows = ""
    for entry in library.entries:
        # Wrap double quotes in Query with ttfamily font.
        q = re.sub(r'"', r'{\\ttfamily"}', entry.fields_dict["Query"].value)
        # Build table row.
        row = (
```

```
            f"{entry.key} & "
            f"{entry.fields_dict['Approach'].value} & "
            f"{q} & "
            f"{entry.fields_dict['SortedBy'].value} & "
            f"{entry.fields_dict['LimitedBy'].value} & "
            f"{entry.fields_dict['Date'].value} & "
            f"{entry.fields_dict['Source'].value} & "
            f"{entry.fields_dict['TotalResultCount'].value} \\\\"
        )
        # Wrap text.
        row = textwrap.fill(row, width=80, subsequent_indent=" " * 4) + "\n"
        # Append row to the table.
        searchLogTableRows += row

    # Write table rows to file.
    print(f"Writing table rows to file: {rowsFileName}")
    writeToFile(rowsFileName, searchLogTableRows, overwrite=True)


def titlesToTitleCase(library: bibtexparser.Library, fileName: str):
    """Change entry Titles to Title Case, OVERWRITES fileName."""

    for entry in library.entries:
        t = entry.fields_dict["Title"].value
        entry.fields_dict["Title"].value = tc.titlecase(t)

    bibtexparser.write_file(fileName, library)


def getPageStart(entry: bibtexparser.model.Entry):
    """Get the start page recorded in the entry, return as integer."""

    pages = entry.fields_dict["Pages"].value
    pageStartStr = pages.split("-", maxsplit=1)[0]
    return int(pageStartStr)


def parseArgs():
    """Parse command line arguments, returns args."""

    # Create the command line argument parser.
    # Use module docstring as the description in help.
    # Use RawDescriptionHelpFormatter to retain line spacing.
    parser = argparse.ArgumentParser(
        description=__doc__,
        formatter_class=argparse.RawDescriptionHelpFormatter,
    )

    # Required positional argument for the bibliography file to process.
    # The file variable will be: args.file.
    parser.add_argument(
        "file",
        help="File path to process, example: Bibliography.bib",
```

```
        type=argparse.FileType("r"),
    )

    # Optional argument (flag) for reporting entry keys as CSV.
    # If flag given then: args.csv = True.
    parser.add_argument(
        "-csv",
        help="Report entry keys as CSV.",
        action="store_true",
    )

    # Optional argument (flag) for reporting on a SearchLog.bib file.
    # If flag given then: args.search_log = True.
    parser.add_argument(
        "-s",
        "--search-log",
        help="Report on a SearchLog.bib file.",
        action="store_true",
    )

    # Optional argument (flag) for changing entry titles to title case (tc).
    # If flag given then: args.titles_to_title_case = True.
    parser.add_argument(
        "-tc",
        "--titles-to-title-case",
        help="Change entry titles to title case, and OVERWRITE file.",
        action="store_true",
    )

    # Parse command line args as specified above.
    # If any arguments are not valid, then
    # an appropriate error message is printed to the command line
    # and the application exits.
    args = parser.parse_args()

    # Close file, file argument has been given,
    # and the file is confirmed to exist by parse_args().
    args.file.close()

    # Success
    return args


def main():
    """The main function that runs when script is called as an application."""

    # Parse command line arguments.
    args = parseArgs()

    # Print to command line.
    print("Starting...")

    # Print file found message.
```

```
    fileName = args.file.name
    print(f"File found: {fileName}, encoding = '{args.file.encoding}'")

    # Parse the .bib file.
    # On failure prints stack trace, error/warning messages, and exits if fatal.
    library = bibtexparser.parse_file(fileName)

    # Build report file name.
    fileBaseName = os.path.basename(fileName)
    fileStemName = fileBaseName.split(".")[0]
    reportFileName = fileStemName + "Report.txt"

    print(f"Writing report to file: {reportFileName}")

    if not args.search_log:
        header = "# Bibliography Report\n"
    else:
        header = "# Search Log Report\n"

    # Write the report file header information.
    writeToFile(
        reportFileName,
        header,
        overwrite=True,
    )
    writeToFile(reportFileName, f"Processing: {fileName}")

    # Run the reporting functions.
    reportSuccessFailBlocks(library, reportFileName)
    reportGeneralStats(library, reportFileName)
    if args.csv:
        reportKeysAsCSV(library, reportFileName)
    reportKeysAsLines(library, reportFileName)
    if not args.search_log:
        reportQuality(library, reportFileName, fileStemName)
    else:
        reportSearchLog(library, reportFileName)
    writeToFile(reportFileName, "# End of Report")

    # Convert entry titles to title case, if flag is set.
    if args.titles_to_title_case:
        print(f"Overwrite file: {fileName}.")
        titlesToTitleCase(library, fileName)


# Run this script as an application if called directly, otherwise
# allow this script to be imported as a module, then
# functions are defined but not executed.
if __name__ == "__main__":
    sys.exit(main())
```

Listing G.2: Output File `SearchLogReport.txt`

```
# Search Log Report

Processing: SearchLog.bib
Status: All blocks parsed successfully.

Parsed 18 blocks, including:
        18 entries
        0 comments
        0 strings
        0 preambles

Entry keys:
SL0001
SL0002
SL0003
SL0004
SL0005
SL0006
SL0007
SL0008
SL0009
SL0010
SL0011
SL0012
SL0013
SL0014
SL0015
SL0016
SL0017
SL0018

Generating LaTeX table.

Usage:
1. In a LaTeX document, create a table with the provided headers.
2. For the rows use: \input{SearchLogTableRows}

Headers:
Search Log Key & Approach & Query & Sorted By & Limited By & Date & Source &
    Total Result Count \\
Rows file:
SearchLogTableRows.tex

# End of Report
```

Listing G.3: Output File SearchLogTableRows.tex

```
SL0001 & Foundational Knowledge, Research Proposal & ENG4110: Engineering
    Research Methodology & Relevance & Course & 2023-08-09 & University of
    Southern Queensland & 15 \\
SL0002 & Define, Significance & {\ttfamily"}Information as a Product{\ttfamily"}
    & Relevance & Any type, Top 10 & 2024-03-17 & Google Scholar & 2,270 \\
SL0003 & Define, Significance & {\ttfamily"}Sustainable Asset
    Management{\ttfamily"} & Relevance & Any type, Top 10 & 2024-03-18 & Google
    Scholar & 2,910 \\
SL0004 & Methodology, Bibliographic Coupling & {\ttfamily"}Bibliographic
    Coupling{\ttfamily"} peer review & Relevance & Any type, Top 2 & 2024-04-13
    & Google Scholar & 17,000 \\
SL0005 & Data Papers from Bibliographic Coupling & ERP Issues and Challenges: A
    Research Synthesis & Bibliographic Coupling Strength & Automatic &
    2024-04-13 & Connected Papers, Semantic Scholar & 40 \\
SL0006 & Very similar research exists? & {\ttfamily"}Engineering Information
    Product Delivery with Critical                      Success Factors for
    Maximum Value{\ttfamily"} & Relevance & Any type & 2024-05-26 & Scopus & 0
    \\
SL0007 & Very similar research exists? & {\ttfamily"}Engineering Information
    Product Delivery with Critical                      Success Factors for
    Maximum Value{\ttfamily"} & Relevance & Any type & 2024-05-26 & Google
    Scholar & 0 \\
SL0008 & Very similar research exists? & {\ttfamily"}Engineering Information
    Product Delivery with Critical                      Success Factors for
    Maximum Value{\ttfamily"} & Relevance & Any type & 2024-05-26 &
    ScienceDirect & 0 \\
SL0009 & Very similar research exists? & {\ttfamily"}Engineering Information
    Product Delivery with Critical                      Success Factors for
    Maximum Value{\ttfamily"} & Relevance & Any type & 2024-05-26 & Semantic
    Scholar & 0 \\
SL0010 & Very similar research exists? & {\ttfamily"}Engineering Information
    Product Delivery with Critical                      Success Factors for
    Maximum Value{\ttfamily"} & Relevance & Any type & 2024-05-26 & UniSQ
    Library Search & 0 \\
SL0011 & Methodology, Reporting & reporting integrative literature reviews &
    Relevance & Any type, Top 4 & 2024-06-08 & Google Scholar & 736,000 \\
SL0012 & Methodology, Reporting & reporting systematic reviews & Relevance & Any
    type, Top 3 & 2024-06-19 & Google Scholar & 5,500,000 \\
SL0013 & Methodology, Reporting & engineering research PRISMA & Relevance & Any
    type, Top 3 & 2024-06-23 & Google Scholar & 68,300 \\
SL0014 & Foundational Knowledge & ENG3003: Engineering Management & Relevance &
    Course & 2024-01-26 & University of Southern Queensland & 1 \\
SL0015 & Foundational Knowledge & MGT3203: Project Management Processes &
    Relevance & Course & 2023-01-27 & University of Southern Queensland & 2 \\
SL0016 & Relevant Theory & DeLone and McLean IS Success Model & Relevance & Any
    type, Top 1 & 2024-08-20 & Google Scholar & 38,700 \\
SL0017 & Relevant Theory & Information Systems Success: The Quest for the
    Dependent                       Variable & Relevance & Any type, Top 1 &
    2024-08-21 & Google Scholar & 263,000 \\
SL0018 & Methodology & systematic content analysis methodology & Relevance & Any
    type, Top 1 & 2024-09-08 & Google Scholar & 6,330,000 \\
```

Listing G.4: Output File `BibliographyReport.txt`

```
# Bibliography Report

Processing: Bibliography.bib
Status: All blocks parsed successfully.

Parsed 53 blocks, including:
        53 entries
        0 comments
        0 strings
        0 preambles

Entry keys:
AbbottEtAl2007BuildiConditAssess
Abd-MalekEtAl2018SustaiAssetManage
AbdiEtAl2019SustaiAssetManage
AlbhiratEtAl2024PRISMAStatemEnviro
BadurdeenEtAl2012RiskModeliAnalys
BudgenEtAl2018ReportSystemReview
BártováEtAl2022PRISMASystemReview
CherringtonEtAl2020DeepLearniDecisi
CherringtonEtAl2021DeepLearniSustai
ConnectedPapers2024About
Daniel1961ManageInformCrisis
DeLoneEtAl1992InformSystemSucces
DeLoneEtAl2003DeLoneMcLeanModel
ElsbachEtAl2020CreatiHigh-ILitera
Fallon1961ValueEngineProduc
FreidenEtAl1998InformProducNot
Hamilton2002ConsidValueduring
HojjatiEtAl2016SustaiAssetManage
KimeEtAl2022biblatPackag
Kromhout2023ResearProposEngine
Kromhout2024HarvarAGPSBibLaT
Lutchman2006SustaiAssetManage
MahmoodEtAl2020ERPIssuesChalle
Martyn1964BiblioCoupli
Mitrovic2016InformProducNecess
NiekampEtAl2015Multi-DecisiSuppor
NimmerEtAl1992InformCommodNew
PageEtAl2021PRISMA2020Statem
PageEtAl2021UpdatiGuidanReport
ProjectManagementInstitute2008GuideProjecManage
ProjectManagementInstitute2017GuideProjecManage
ProjectManagementInstitute2021StandaProjecManage
QiuEtAl2023ErgonoResearAgricu
Reutiman2012DefectInformShould
Rockart1979ChiefExecutDefine
Russell2005OverviIntegrResear
SchermerhornEtAl2022ExplorManage
SemanticScholar2024FreeAI-PowResear
Snyder2019LiteraReviewResear
StrongEtAl2014TeachiLearniCurric
Thiel2014ResearMethodEngine
ThorpeEtAl2021ManagiSustaiAsset
Torraco2016WritinIntegrLitera
UniversityofSouthernQueensland2020HarvarAGPSRefere
Wang1998ProducPerspeon
```

```
WangEtAl1998ManageYourInform
WangEtAl2002InformProducApproa
Weinberg1974BiblioCoupliReview
WhiteEtAl2006ContenAnalysFlexib
WooEtAl2021NursesExperiVolunt
Zhebit2021InformProducCollap
Zielińska2016InformMarketProduc
Zwikael2009RelatiImportPMBOK

Quality summary:
        Included count = 52
        Excluded count = 1
        Total count = 53

Generating LaTeX table(s).

Usage:
1. In a LaTeX document, create a table with the provided headers.
2. For the rows use: \input{rowsFileName}

Included Journal table (count = 36).
Headers:
Journal & Quality \\
Rows file:
BibliographyInclJPTableRows.tex

Included table (count = 52).
Headers:
Paper (cited in lit. review) & Quality \\
Rows file:
BibliographyInclTableRows.tex

Excluded table (count = 1).
Headers:
Bibliography Data Key (not cited) & Quality \\
Rows file:
BibliographyExclTableRows.tex

# End of Report
```

Listing G.5: Output File `BibliographyInclJPTableRows.tex`

```
2021 International Conference on Maintenance and
    Intelligent Asset Management (ICMIAM) & Peer Reviewed Conference \\
Automatic Documentation and Mathematical
    Linguistics & Unknown \\
CIB World Building Congress & Not Checked \\
Cleaner Engineering and Technology & Peer Reviewed Journal, SJR H-Index 31 \\
Communications of the ACM & Journal, SJR H-Index 241 \\
Computers \& Industrial Engineering & Not Checked \\
Cornell Journal of Law and Public Policy & Not Checked \\
Czech Journal of Social Sciences Business and
    Economics & Not Checked \\
Engineering Asset Management and Infrastructure
    Sustainability: Proceedings of the 5th World
    Congress on Engineering Asset Management
    (WCEAM 2010) & Not Checked \\
Harvard Business Review & Magazine, SJR H-Index 206 \\
Human Resource Development Review & Peer Reviewed Journal, SJR H-Index 62 \\
Information Storage and Retrieval & Peer Reviewed Journal, SJR H-Index 123 \\
Information Systems Research & Peer Reviewed Journal, SJR H-Index 185 \\
Information and Software Technology & Peer Reviewed Journal, SJR H-Index 123 \\
International Journal of COMADEM & Not Checked \\
International Journal of Industrial Ergonomics & Peer Reviewed Journal, SJR H-Index 95 \\
International Journal of Project Management & Peer Reviewed Journal, SJR H-Index 179 \\
Journal of Business Research & Peer Reviewed Journal, SJR H-Index 265 \\
Journal of Clinical Epidemiology & Peer Reviewed Journal, SJR H-Index 251 \\
Journal of Documentation & Peer Reviewed Journal, SJR H-Index 72 \\
Journal of Industrial and Production Engineering & Not Checked \\
Journal of Management Information Systems & Peer Reviewed Journal, SJR H-Index 170 \\
Journal of Management Studies & Peer Reviewed Journal, SJR H-Index 221 \\
Kandungan & Not Checked \\
Kybernetes & Peer Reviewed Journal, SJR H-Index 47 \\
Law and Contemporary Problems & University Journal, SJR H-Index 42 \\
Library Trends & Peer Reviewed Journal, SJR H-Index 55 \\
MIT Sloan Management Review & Journal, SJR H-Index 113 \\
Marketing Intelligence \& Planning & Peer Reviewed Journal, SJR H-Index 80 \\
Media Dialogues & Not Checked \\
Production & Peer Reviewed Journal, SJR H-Index 24 \\
Progress in Transplantation & Peer Reviewed Journal, SJR H-Index 46 \\
Project Management Journal & Peer Reviewed Journal, SJR H-Index 55 \\
The BMJ & Peer Reviewed Journal, SJR H-Index 497 \\
Transforming the Future of Infrastructure through
    Smarter Information: Proceedings of the
    International Conference on Smart
    Infrastructure and ConstructionConstruction,
    27--29 June 2016 & Not Checked \\
{I.R.E.} Transactions on Product Engineering and
    Production & Peer Reviewed Journal, SJR Not Indexed \\
```

Listing G.6: Output File BibliographyInclTableRows.tex

```
\textcite{AbbottEtAl2007BuildiConditAssess} & Not Checked \\
\textcite{Abd-MalekEtAl2018SustaiAssetManage} & Not Checked \\
\textcite{AbdiEtAl2019SustaiAssetManage} & Not Checked \\
\textcite{AlbhiratEtAl2024PRISMAStatemEnviro} & Peer Reviewed Journal, SJR H-Index 31 \\
\textcite{BadurdeenEtAl2012RiskModeliAnalys} & Not Checked \\
\textcite{BudgenEtAl2018ReportSystemReview} & Peer Reviewed Journal, SJR H-Index 123 \\
\textcite{BártováEtAl2022PRISMASystemReview} & Peer Reviewed Journal, SJR H-Index 24 \\
\textcite{CherringtonEtAl2020DeepLearniDecisi} & Not Checked \\
\textcite{CherringtonEtAl2021DeepLearniSustai} & Not Checked \\
\textcite{ConnectedPapers2024About} & Bibliographic Coupling \\
\textcite{Daniel1961ManageInformCrisis} & Magazine, SJR H-Index 206 \\
\textcite{DeLoneEtAl1992InformSystemSucces} & Peer Reviewed Journal, SJR H-Index 185 \\
\textcite{DeLoneEtAl2003DeLoneMcLeanModel} & Peer Reviewed Journal, SJR H-Index 170 \\
\textcite{ElsbachEtAl2020CreatiHigh-ILitera} & Peer Reviewed Journal, SJR H-Index 221 \\
\textcite{Fallon1961ValueEngineProduc} & Peer Reviewed Journal, SJR Not Indexed \\
\textcite{FreidenEtAl1998InformProducNot} & Peer Reviewed Journal, SJR H-Index 80 \\
\textcite{Hamilton2002ConsidValueduring} & Peer Reviewed Journal, SJR H-Index 179 \\
\textcite{HojjatiEtAl2016SustaiAssetManage} & Not Checked \\
\textcite{KimeEtAl2022biblatPackag} & Original Author, Manual \\
\textcite{Kromhout2023ResearProposEngine} & University Coursework \\
\textcite{Kromhout2024HarvarAGPSBibLaT} & Original Author, Manual \\
\textcite{Lutchman2006SustaiAssetManage} & Not Checked \\
\textcite{MahmoodEtAl2020ERPIssuesChalle} & Peer Reviewed Journal, SJR H-Index 47 \\
\textcite{Martyn1964BiblioCoupli} & Peer Reviewed Journal, SJR H-Index 72 \\
\textcite{Mitrovic2016InformProducNecess} & Not Checked \\
\textcite{NiekampEtAl2015Multi-DecisiSuppor} & Not Checked \\
\textcite{NimmerEtAl1992InformCommodNew} & University Journal, SJR H-Index 42 \\
\textcite{PageEtAl2021PRISMA2020Statem} & Peer Reviewed Journal, SJR H-Index 497 \\
\textcite{PageEtAl2021UpdatiGuidanReport} & Peer Reviewed Journal, SJR H-Index 251 \\
\textcite{ProjectManagementInstitute2008GuideProjecManage} & Industry Standard, Book \\
\textcite{ProjectManagementInstitute2017GuideProjecManage} & Industry Standard, Book \\
\textcite{ProjectManagementInstitute2021StandaProjecManage} & Industry Standard, Book \\
\textcite{QiuEtAl2023ErgonoResearAgricu} & Peer Reviewed Journal, SJR H-Index 95 \\
\textcite{Reutiman2012DefectInformShould} & Not Checked \\
\textcite{Rockart1979ChiefExecutDefine} & Magazine, SJR H-Index 206 \\
\textcite{Russell2005OverviIntegrResear} & Peer Reviewed Journal, SJR H-Index 46 \\
\textcite{SchermerhornEtAl2022ExplorManage} & University Textbook \\
\textcite{SemanticScholar2024FreeAI-PowResear} & Academic Database \\
\textcite{Snyder2019LiteraReviewResear} & Peer Reviewed Journal, SJR H-Index 265 \\
\textcite{StrongEtAl2014TeachiLearniCurric} & Not Checked \\
\textcite{Thiel2014ResearMethodEngine} & University Textbook \\
\textcite{ThorpeEtAl2021ManagiSustaiAsset} & Peer Reviewed Conference \\
\textcite{Torraco2016WritinIntegrLitera} & Peer Reviewed Journal, SJR H-Index 62 \\
\textcite{UniversityofSouthernQueensland2020HarvarAGPSRefere} & University Policy and Guide \\
\textcite{Wang1998ProducPerspeon} & Journal, SJR H-Index 241 \\
\textcite{WangEtAl1998ManageYourInform} & Journal, SJR H-Index 113 \\
\textcite{WangEtAl2002InformProducApproa} & Not Checked, University Press, Working Paper \\
\textcite{Weinberg1974BiblioCoupliReview} & Peer Reviewed Journal, SJR H-Index 123 \\
\textcite{WhiteEtAl2006ContenAnalysFlexib} & Peer Reviewed Journal, SJR H-Index 55 \\
\textcite{Zhebit2021InformProducCollap} & Unknown \\
\textcite{Zielińska2016InformMarketProduc} & Not Checked \\
\textcite{Zwikael2009RelatiImportPMBOK} & Peer Reviewed Journal, SJR H-Index 55 \\
```

Listing G.7: Output File `BibliographyExclTableRows.tex`

```
WooEtAl2021NursesExperiVolunt & Not Relevant, Excluded \\
```

Listing G.8: Output File Mahmood2020ConnectedPapersGraphReport.txt

```
# Bibliography Report

Processing: Mahmood2020ConnectedPapersGraph.bib
Status: All blocks parsed successfully.

Parsed 40 blocks, including:
        40 entries
        0 comments
        0 strings
        0 preambles

Entry keys:
AamirEtAl2012ExaminCriticSucces
Al-HinaiEtAl2011PreparPeopleManage
AliEtAl2013DecisiSupporSystem
AliEtAl2017ERPSystemImplem
AmidEtAl2012IdentiClassiERP
AnjumEtAl2015FactorManipuERP
BarthEtAl2019CriticSuccesFactor
BasogluEtAl2007OrganiAdoptiEnterp
BazhairEtAl2015FactorChangeManage
Chan2013AustraQuantiSurvey
ChatzoglouEtAl2016AnteceOutcomERP
CorreaEtAl2005Meta-ASobreImplan
CoşkunEtAl2022ERPFailurSystem
FinneyEtAl2007ERPImplemCompil
GargEtAl2013EmpiriStudyon
GargEtAl2014CriticSuccesFactor
GargEtAl2014FactorInflueERP
GargEtAl2015FactorAffectERP
HuangEtAl2021CriticSuccesFactor
KhattakEtAl2013InvestCriticSucces
Lafiguera2016BigBangVersus
MahrazEtAl2020CompilAnalysCritic
NgaiEtAl2008ExaminCriticSucces
Nikitović2014Upravlkriticcimben
Nkasu2019InvestEffectCritic
Nousiainen2015ToiminKäyttOton
OsmanEtAl2019ERPCriticSucces
Panga2014FactorInflueImplem
Rabaai2009IdentiCriticSucces
RabaaiEtAl2009ERPSystemHigher
RabaaiEtAl2015CulturPerspeon
RabaaiEtAl2016SuccesFactorEnterp
RavasanEtAl2014FCM-BaDynamiModeli
SalimifardEtAl2010NoticeRetracInvest
Sayegh2010FactorAffectImplem
SaygiliEtAl2017ContemIssuesEnterp
SaygiliEtAl2017EndUsersPercep
SethEtAl2015DeveloModelSucces
ShaulEtAl2013CriticSuccesFactor
ShukorEtAl2020EnterpResourPlanni

Quality summary:
        Included count = 28
        Excluded count = 12
        Total count = 40
```

```
Generating LaTeX table(s).

Usage:
1. In a LaTeX document, create a table with the provided headers.
2. For the rows use: \input{rowsFileName}

Included Journal table (count = 22).
Headers:
Journal & Quality \\
Rows file:
Mahmood2020ConnectedPapersGraphInclJPTableRows.tex

Included table (count = 28).
Headers:
Paper (cited in lit. review) & Quality \\
Rows file:
Mahmood2020ConnectedPapersGraphInclTableRows.tex

Excluded table (count = 12).
Headers:
Bibliography Data Key (not cited) & Quality \\
Rows file:
Mahmood2020ConnectedPapersGraphExclTableRows.tex

# End of Report
```

Listing G.9: Output File Mahmood2020ConnectedPapersGraphInclJPTableRows.tex

```
2016 Federated Conference on Computer Science and
    Information Systems (FedCSIS) & Peer Reviewed Conference, SJR H-Index 17 \\
ACM Computing Surveys & Peer Reviewed Journal, SJR H-Index 213 \\
Benchmarking: An International Journal & Peer Reviewed Journal, SJR H-Index 20 \\
Business Process Management Journal & Peer Reviewed Journal, SJR H-Index 95 \\
Computers in Industry & Peer Reviewed Journal, SJR H-Index 129 \\
Data \& Knowledge Engineering & Peer Reviewed Journal, SJR H-Index 94 \\
Engineering Management Reviews & Peer Reviewed Journal, SJR Not Indexed \\
European Journal of Computer Science Information
    Technology & Peer Reviewed Journal, SJR Not Indexed \\
Industrial Management \& Data Systems & Peer Reviewed Journal, SJR H-Index 125 \\
Information Systems & Peer Reviewed Journal, SJR H-Index 96 \\
International Journal of Computer Applications & Peer Reviewed Journal, SJR Not Indexed \\
International Journal of Engineering Science
    Invention & Peer Reviewed Journal, SJR Not Indexed \\
International Journal of Enterprise Information
    Systems & Peer Reviewed Journal, SJR H-Index 27 \\
International Journal of Intercultural Information
    Management & Peer Reviewed Journal, SJR Not Indexed \\
Journal of Enterprise Information Management & Peer Reviewed Journal, SJR H-Index 82 \\
Journal of Theoretical and Applied Information
    Technology & Peer Reviewed Journal, SJR H-Index 39 \\
Proceedings of the 20th Australasian Conference on
    Information Systems & Peer Reviewed Conference, SJR H-Index 9 \\
Proceedings of the 54th Hawaii International
    Conference on System Sciences & Peer Reviewed Conference, SJR H-Index 98 \\
Research Journal of Applied Sciences, Engineering
    and Technology & Peer Reviewed Journal, SJR H-Index 38 \\
The Journal of High Technology Management Research & Peer Reviewed Journal, SJR H-Index 55 \\
Third International Symposium on Innovation in
    Information \& Communication Technology & Peer Reviewed Conference, SJR Not Indexed \\
Vision & Peer Reviewed Journal, SJR H-Index 24 \\
```

Listing G.10: Output File `Mahmood2020ConnectedPapersGraphInclTableRows.tex`

```
\textcite{AliEtAl2017ERPSystemImplem} & Peer Reviewed Journal, SJR H-Index 82 \\
\textcite{AmidEtAl2012IdentiClassiERP} & Peer Reviewed Journal, SJR H-Index 96 \\
\textcite{AnjumEtAl2015FactorManipuERP} & Peer Reviewed Journal, SJR H-Index 38 \\
\textcite{BarthEtAl2019CriticSuccesFactor} & Peer Reviewed Journal, SJR H-Index 125 \\
\textcite{BasogluEtAl2007OrganiAdoptiEnterp} & Peer Reviewed Journal, SJR H-Index 55 \\
\textcite{BazhairEtAl2015FactorChangeManage} & Peer Reviewed Journal, SJR Not Indexed \\
\textcite{Chan2013AustraQuantiSurvey} & Peer Reviewed Journal, SJR Not Indexed \\
\textcite{ChatzoglouEtAl2016AnteceOutcomERP} & Peer Reviewed Conference, SJR H-Index 17 \\
\textcite{CoşkunEtAl2022ERPFailurSystem} & Peer Reviewed Journal, SJR H-Index 94 \\
\textcite{FinneyEtAl2007ERPImplemCompil} & Peer Reviewed Journal, SJR H-Index 95 \\
\textcite{GargEtAl2013EmpiriStudyon} & Peer Reviewed Journal, SJR H-Index 95 \\
\textcite{GargEtAl2014CriticSuccesFactor} & Peer Reviewed Journal, SJR H-Index 82 \\
\textcite{GargEtAl2014FactorInflueERP} & Peer Reviewed Journal, SJR H-Index 82 \\
\textcite{GargEtAl2015FactorAffectERP} & Peer Reviewed Journal, SJR H-Index 20 \\
\textcite{HuangEtAl2021CriticSuccesFactor} & Peer Reviewed Conference, SJR H-Index 98 \\
\textcite{KhattakEtAl2013InvestCriticSucces} & Peer Reviewed Journal, SJR H-Index 27 \\
\textcite{MahrazEtAl2020CompilAnalysCritic} & Peer Reviewed Journal, SJR H-Index 27 \\
\textcite{NgaiEtAl2008ExaminCriticSucces} & Peer Reviewed Journal, SJR H-Index 129 \\
\textcite{OsmanEtAl2019ERPCriticSucces} & Peer Reviewed Journal, SJR Not Indexed \\
\textcite{Rabaai2009IdentiCriticSucces} & Peer Reviewed Conference, SJR Not Indexed \\
\textcite{RabaaiEtAl2009ERPSystemHigher} & Peer Reviewed Conference, SJR H-Index 9 \\
\textcite{RabaaiEtAl2015CulturPerspeon} & Peer Reviewed Journal, SJR Not Indexed \\
\textcite{RabaaiEtAl2016SuccesFactorEnterp} & Peer Reviewed Journal, SJR Not Indexed \\
\textcite{RavasanEtAl2014FCM-BaDynamiModeli} & Peer Reviewed Journal, SJR H-Index 27 \\
\textcite{SaygiliEtAl2017EndUsersPercep} & Peer Reviewed Journal, SJR H-Index 27 \\
\textcite{SethEtAl2015DeveloModelSucces} & Peer Reviewed Journal, SJR H-Index 24 \\
\textcite{ShaulEtAl2013CriticSuccesFactor} & Peer Reviewed Journal, SJR H-Index 213 \\
\textcite{ShukorEtAl2020EnterpResourPlanni} & Peer Reviewed Journal, SJR H-Index 39 \\
```

Listing G.11: Output File Mahmood2020ConnectedPapersGraphExclTableRows.tex

```
AamirEtAl2012ExaminCriticSucces & Journal Appears Defunct, SJR Not Indexed, Full Text Not
                  Available to Researcher, Excluded \\
Al-HinaiEtAl2011PreparPeopleManage & Book, Full Text Not Available to Researcher, Excluded \\
AliEtAl2013DecisiSupporSystem & Book, Full Text Not Available to Researcher, Excluded \\
CorreaEtAl2005Meta-ASobreImplan & Not English Language, Excluded \\
Lafiguera2016BigBangVersus & Thesis, Excluded \\
Nikitović2014Upravlkriticcimben & Thesis, Not English Language, Excluded \\
Nkasu2019InvestEffectCritic & Full Text Not Available to Researcher, Excluded \\
Nousiainen2015ToiminKäyttOton & Not English Language, Excluded \\
Panga2014FactorInflueImplem & Thesis, Full Text Not Available to Researcher, Excluded \\
SalimifardEtAl2010NoticeRetracInvest & Notice of Retraction, Excluded \\
Sayegh2010FactorAffectImplem & Dissertation, Excluded \\
SaygiliEtAl2017ContemIssuesEnterp & Book, Excluded \\
```

Appendix H

LaTeX Helper Script

The latexhelper python script.

Listing H.1: LaTeX Helper Script `latexhelper.py`

```
#!/usr/bin/env python3

"""A LaTeX helper (latexhelper) python script.

This script primarily provides helper functions for working with LaTeX files.

Setup (bash):
    $ chmod +x latexhelper.py

Usage (bash):
    $ ./latexhelper.py --sort-table-rows TestTableRows.tex
    $ ./latexhelper.py --help
"""

import sys
import re
import csv
import argparse
import textwrap
import pandas as pd
from bibhelper import writeToFile


def readCSV(fileName: str):
    """Read CSV file, return pandas dataframe."""

    # Read file into a dataframe.
    df = pd.read_csv(fileName)

    # Success
    return df


def wrapSentence(row):
    """Wrap the sentence in a row."""

    text = textwrap.fill(row["Sentence"], width=80, subsequent_indent=" " * 0)
    text = "\n" + text + "\n"

    return text


def escapeAmpersands(element):
    """Escape ampersands since "&" is a LaTeX table column separator."""

    # Return element without change if it is not a string.
    if not isinstance(element, str):
        return element

    # Replace "&" that are not already escaped "\&" with "\&".
```

```
    # Uses negative look behind (?<!\\) to only apply if \ is not before &.
    # The form is (?<!x)y to match y if not preceded by x.
    # The \ must be escaped, hence \\.
    return re.sub(r"(?<!\\)&", r"\&", element)


def writeCSV(fileName: str, df: pd.DataFrame):
    """Write pandas dataframe to CSV file."""

    # Wrap the sentences, if the column exists and there are rows.
    if "Sentence" in df.columns and len(df.index):
        df["Sentence"] = df.apply(wrapSentence, axis=1)
        # Add a newline char to provide wrapping of the header in the listing.
        df.columns = [c + "\n" for c in df.columns]

    # Write file
    df.to_csv(fileName, index=False, quoting=csv.QUOTE_NONNUMERIC)


def generateCSFChecklists(csvFileName: str):
    """Generate the CSF Checklists."""

    # List of checklists to generate.
    checkLists = ["Management", "Collection", "Production", "Use"]

    # Read the file.
    df = readCSV(csvFileName)

    # Iterate to generate checklists.
    for c in checkLists:

        # Build file names.
        outputRowsFileName = "CSFChecklist" + c + "FunctionTableRows.tex"
        outputCSVFileName = "CSFChecklist" + c + "Function.csv"

        # Select all rows where c = "x", and only the CSF column.
        outputDF = df.loc[df[c] == "x", ["Critical Success Factor"]]

        # Drop duplicates.
        outputDF.drop_duplicates(inplace=True)

        # Sort alphabetically by CSF.
        outputDF.sort_values(by=["Critical Success Factor"], inplace=True)

        print(f"Writing table rows to file: {outputRowsFileName}")
        writeTableRows(outputRowsFileName, outputDF)

        # Add CSV headers.
        outputDF["Relevant to Context Y/N"] = ""
        outputDF["Actual"] = ""
        outputDF["Target"] = ""
        outputDF["Action"] = ""
```

```
        print(f"Writing csv to file: {outputCSVFileName}")
        writeCSV(outputCSVFileName, outputDF)


def buildPaperCitation(row):
    """Build the Paper citation."""

    return (
        row["Sentence"]
        + " "
        + "\\autocite["
        + str(row["Page"])
        + "]{"
        + row["Reference"]
        + "}"
    )


def buildFunctionColumn(row):
    """Build the function column."""

    # List of columns to check.
    columns = ["Management", "Collection", "Production", "Use"]

    # Return variable.
    functions = []

    # Check each column for "x".
    for c in columns:
        if row[c] == "x":
            functions.append(c)

    # Success, join the functions to form a comma separated string.
    return ", ".join(functions)


def generateCSFReview(csvFileName: str):
    """Generate the CSF Review."""

    # Read the file.
    df = readCSV(csvFileName)

    # Build file names.
    outputRowsFileName = "CSFReviewTableRows.tex"
    outputCSVFileName = "CSFReview.csv"

    # Sort alphabetically by first two columns.
    df.sort_values(
        by=["Critical Success Factor", "Term"],
        inplace=True,
    )

    # Prepare conditional mask.
```

```
    # Select all rows where any (logical or) functionMask = "x".
    managementMask = df["Management"] == "x"
    collectionMask = df["Collection"] == "x"
    productionMask = df["Production"] == "x"
    useMask = df["Use"] == "x"
    mask = managementMask | collectionMask | productionMask | useMask

    # Select CSV rows.
    # All columns are included in the CSV.
    outputDF = df.loc[mask].copy()

    print(f"Writing csv to file: {outputCSVFileName}")
    writeCSV(outputCSVFileName, outputDF)

    # Build the Sentence with Paper citation appended.
    df["Sentence"] = df.apply(buildPaperCitation, axis=1)

    # Build the function column.
    df["Function"] = df.apply(buildFunctionColumn, axis=1)

    # Select LaTeX table rows.
    # Sentence, Reference, and Page are now built into the Sentence column.
    outputDF = df.loc[
        mask,
        (
            "Critical Success Factor",
            "Term",
            "Sentence",
            "Function",
        ),
    ]

    print(f"Writing table rows to file: {outputRowsFileName}")
    writeTableRows(outputRowsFileName, outputDF)


def readTableRows(fileName: str):
    """Read table rows, return pandas dataframe."""

    # Read file into a dataframe.
    # Separator: line starts with "&", or sep is " &", or "\\".
    df = pd.read_csv(fileName, sep=r"^&| &|\\\\", engine="python", header=None)

    # Drop last column - NaNs coming from "\\".
    lastColumn = len(df.columns) - 1
    df.drop(columns=[lastColumn], inplace=True)

    # Success
    return df


def writeTableRows(fileName: str, df: pd.DataFrame, na_rep=""):
    """Write table rows."""
```

```
    # Escape ampersands.
    df = df.map(escapeAmpersands)

    # Convert to LaTeX table.
    text = df.to_latex(header=False, index=False, na_rep=na_rep)

    # Split into lines.
    # Drop the first three lines, and the last two lines, to get rows only.
    text = text.split("\n")[3:-3]

    # Wrap lines.
    for index, line in enumerate(text):
        text[index] = textwrap.fill(line, width=80, subsequent_indent=" " * 4)

    # Join lines into a single string.
    text = "\n".join(text)

    # Write file.
    writeToFile(fileName, text=text, overwrite=True)


def sortTableRows(fileName: str):
    """Sort the rows of a file that contains LaTex table rows."""

    # Read file into a dataframe.
    df = readTableRows(fileName)

    # Fill down columns - forward fill.
    df.ffill(inplace=True)

    # Iterate over all columns.
    colWidths = []
    for i in df.columns:
        # Trim whitespace.
        df[i] = df[i].str.strip()
        # Get column widths.
        colWidths.append(df[i].str.len().max())
        # Fill with spaces to set column width.
        df[i] = df[i].str.ljust(colWidths[i])

    # Sort alphabetically by first two columns.
    df.sort_values(by=[0, 1], inplace=True)

    # Build NaN replacement string as a number of spaces.
    na_rep = " " * (colWidths[0])

    # Replace repeat values with NaN once again.
    df[0] = df[0].mask(df[0].shift(1) == df[0])

    # Write table rows.
    writeTableRows(fileName, df, na_rep=na_rep)
```

```
def parseArgs():
    """Parse command line arguments, returns args."""

    # Create the command line argument parser.
    # Use module docstring as the description in help.
    # Use RawDescriptionHelpFormatter to retain line spacing.
    parser = argparse.ArgumentParser(
        description=__doc__,
        formatter_class=argparse.RawDescriptionHelpFormatter,
    )

    # Required positional argument for the file to process.
    # The file variable will be: args.file.
    parser.add_argument(
        "file",
        help="File path to process, example: file.tex",
        type=argparse.FileType("r"),
    )

    # Optional argument (flag) for sorting table rows.
    # If flag given then: args.sort_table_rows = True.
    parser.add_argument(
        "--sort-table-rows",
        help="Sort table rows.",
        action="store_true",
    )

    # Parse command line args as specified above.
    # If any arguments are not valid, then
    # an appropriate error message is printed to the command line
    # and the application exits.
    args = parser.parse_args()

    # Close file, file argument has been given,
    # and the file is confirmed to exist by parse_args().
    args.file.close()

    # Success
    return args


def main():
    """The main function that runs when script is called as an application."""

    # Parse command line arguments.
    args = parseArgs()

    # Print to command line.
    print("Starting...")

    # Print file found message.
    fileName = args.file.name
```

```
    print(f"File found: {fileName}, encoding = '{args.file.encoding}'")

    # Sort table rows if argument given.
    if args.sort_table_rows:
        sortTableRows(fileName)
        return


# Run this script as an application if called directly, otherwise
# allow this script to be imported as a module, then
# functions are defined but not executed.
if __name__ == "__main__":
    sys.exit(main())
```

Appendix I

Content Analysis Script

The content analysis python script and its output listings.

Listing I.1: Content Analysis Script `contentanalysis.py`

```
#!/usr/bin/env python3

"""A Content Analysis (contentanalysis) python script.

This script provides semi-automated content analysis.
The bibliography file entries must contain "Quality" fields as specified in
bibhelper.py. The library path must contain the papers to be included as
PDF files. TranslationRules.csv must contain Term and Critical Success Factor
pairs in CSV format. ContentAnalysis.csv is the intermediary working file
for reviewer notes and function allocation. The outputs are the CSF Checklist
and CSF Review files in LaTeX table row format and CSV format.

Setup (bash):
    $ chmod +x contentanalysis.py

Usage (bash):
    $ BIB="Mahmood2020ConnectedPapersGraph.bib"
    $ LIB_PATH="../library/"
    $ WORK="ContentAnalysis.csv"
    $ TRANSLATION_RULES="TranslationRules.csv"
    $ ./contentanalysis.py $BIB $LIB_PATH $WORK $TRANSLATION_RULES
    $ ./contentanalysis.py --help
"""

import os
import re
import sys
import csv
import pathlib
import argparse
import tempfile
import pdftotext
import bibtexparser
import bibtexparser.model
import nltk
import bibhelper
from bibhelper import writeToFile
from bibhelper import getIncludedExcludedEntryLists
import latexhelper


def buildPDFFilePaths(
    includedList: list[bibtexparser.model.Entry], libraryPath: pathlib.Path
):
    """Build the PDF file paths."""

    # Return variable.
    pdfFilePaths = []

    # Iterate through included entries to build paths.
```

```
    for entry in includedList:
        pdfFilePaths.append(os.path.join(libraryPath, entry.key + ".pdf"))

    # Success.
    return pdfFilePaths


def readTranslationRules(fileName: str):
    """Read the translation rules file, exit on error."""

    # Read the translation rules.
    try:
        with open(fileName, mode="r") as f:
            reader = csv.reader(f)
            # Skip the header row.
            next(reader)
            # Build the dictionary from columns: Term, Critical Success Factor.
            translationRules = {row[0]: row[1] for row in reader}
    except IOError:
        print(f"Error: could not read the translation file: {fileName}")
        print("Exiting.")
        sys.exit(1)

    # Success
    return translationRules


def readPreviousMatches(fileName: str):
    """Read previous matches from file, if it exists."""

    # Return variable.
    previousMatches = {}

    # Try to read the file.
    try:
        with open(fileName, mode="r") as f:
            reader = csv.reader(f)
            # Skip the header row.
            next(reader)
            # Build the dictionary.
            for row in reader:
                # Key columns:
                # Critical Success Factor, Term, Sentence, Reference, Page
                # First, unwrap sentences when sourced from CSFReview.csv.
                sentence = row[2]
                sentence = sentence.replace("-\n", "-")  # unwrap hyphenated
                sentence = re.sub(r"\s+", " ", sentence)  # unwrap
                sentence = (
                    sentence.strip()
                )  # remove leading/trailing whitespace
                # Build key.
                k = (row[0], row[1], sentence, row[3], row[4])
                # Value columns:
```

```
                # Collection, Production, Use, Management
                v = (row[5], row[6], row[7], row[8])
                # Set the result.
                previousMatches[k] = v
    # Continue if file does not exist.
    except FileNotFoundError:
        pass

    # Success
    return previousMatches


def writeMatches(fileName: str, matches: dict, overwrite=False):
    """Write the matches to CSV.

    Use (optional) overwrite=True to truncate an existing file, typically at the
    start of operations, otherwise the default is to append. Exits on failure.
    """

    # Set mode to overwrite "w", else append "a".
    if overwrite:
        mode = "w"
    else:
        mode = "a"

    # Try to create file and write content.
    # The file is automatically closed.
    # If the operation fails the application exits with status = 1.
    try:
        with open(fileName, mode=mode, encoding="UTF-8") as f:
            # Create the writer.
            writer = csv.writer(f, quoting=csv.QUOTE_NONNUMERIC)
            # Use a generator created from the dict,
            # tuple keys and tuple values are *unpacked, and
            # combined into a list of tuples.
            for row in [(*k, *v) for k, v in matches.items()]:
                writer.writerow(row)
    except IOError:
        print(f"Error: could not write file: {fileName}")
        print("Exiting.")
        sys.exit(1)


def cleanSentences(sentences: list[str]):
    """Perform text cleaning of sentences."""

    resultSentences = []

    # List of (pattern, replacement) pairs.
    replacements = [
        # Replace all whitespace characters [ \t\n\r\f\v] with a single space.
        (r"\s+", " "),
        # Replace U+2018 left single quotation with single left quotation (`).
```

```
        (
            r"\u2018",
            "`",
        ),
        # Replace U+2019 right single quotation with single apostrophe (').
        (
            r"\u2019",
            "'",
        ),
        # Replace left and right double quotation marks.
        (r"\u201c", "``"),
        (r"\u201d", "''"),
        # Replace 'Double High-Reversed Quotation Mark' with single apostrophe (').
        (r"\u201f", "'"),
        # Replace unicode char fi with "fi".
        (r"\ufb01", "fi"),
        # Replace unicode en dash with "-"
        (r"\u2013", "-"),
        # Replace <control> char with ""
        (r"\u000f", ""),
        # Replace 'Private Use Block' char with \bullet.
        (r"\uf0b7", "\u2022"),
        # Replace 'Zero Width No-Break Space' char with ""
        (r"\ufeff", ""),
        # Replace 'Fraction One Quarter' char with "="
        (r"\u00bc", "="),
        # Remove spurious text from PDF reading.
        ("many ERP system others", "many others"),
        # Remove spurious text from PDF reading.
        ("675 monitoring", "monitoring"),
        # Remove spurious text from PDF reading.
        ("673 ERP systems", "ERP systems"),
        # Remove spurious text from PDF reading.
        ("CONCEPTUAL FRAMEWORK Successful", "Successful"),
        # Remove spurious text from PDF reading.
        (
            f"centralization when taken collectively"
            f" were highly significant at the 0.000 level.",
            "centralization",
        ),
    ]

    # Iterate through all sentences.
    for sentence in sentences:
        # Perform replacements.
        for pattern, repl in replacements:
            sentence = re.sub(pattern, repl, sentence)
        # Strip any leading/trailing whitespace.
        sentence = sentence.strip()
        # Split long sentence into two.
        n1 = 1200
        ldots = "..."
        n2 = n1 - len(ldots)
```

```
        if len(sentence) > n1:
            s1 = sentence[:n2] + ldots
            s2 = ldots + sentence[n2:]
            resultSentences.append(s1)
            resultSentences.append(s2)
        else:
            resultSentences.append(sentence)

    # Success.
    return resultSentences


def getPDFSentences(fileName: str):
    """Get a list of sentences from a PDF file."""

    # Read the PDF.
    with open(fileName, "rb") as f:
        pdf = pdftotext.PDF(f)
        # Build a list of lines.
        lines = []
        # Init page count.
        pageCount = 0
        for page in pdf:
            # Append page count marker.
            pageCount += 1
            lines.append(f"#PageCount-{pageCount}")
            # Append lines from PDF.
            lines += page.splitlines()

    # Prepare lines for unwrapping.
    # Empty lines become a newline, otherwise append a space.
    for index, line in enumerate(lines):
        if "" == line:
            lines[index] = "\n"
        else:
            lines[index] += " "

    # Unwrap and join lines into a multi-line text string.
    inputText = "".join(lines)

    # Tokenise into sentences.
    # Use the default trained punkt tokeniser, with extra abbreviations.
    tokeniser = nltk.data.load("tokenizers/punkt/english.pickle")
    # Treat et al. as not the end of a sentence.
    tokeniser._params.abbrev_types.add("al")  # pyright: ignore
    # Treat Fig. and fig. as not the end of a sentence.
    tokeniser._params.abbrev_types.add("fig")  # pyright: ignore
    # Treat i.e. as not the end of a sentence.
    tokeniser._params.abbrev_types.add("i.e")  # pyright: ignore
    # Run tokeniser.
    sentences = tokeniser.tokenize(inputText)  # pyright: ignore

    # Text cleaning.
```

```
    sentences = cleanSentences(sentences)

    return sentences


def contentAnalysis(
    includedList: list[bibtexparser.model.Entry],
    libraryPath: pathlib.Path,
    workingFileName: str,
    translationFileName: str,
    wait=False,
):
    """Perform the content analysis."""

    # Build the PDF file paths.
    pdfFilePaths = buildPDFFilePaths(includedList, libraryPath)

    # Read the translation rules.
    translationRules = readTranslationRules(translationFileName)

    # Read matches file to get previous run manual review.
    print(f"Reading previous matches from file: {workingFileName}")
    previousMatches = readPreviousMatches(workingFileName)

    # Matched sentences dict.
    # Init with headers of {tuple key: tuple value}.
    matchedSentences = {}
    k = (
        "Critical Success Factor",
        "Term",
        "Sentence",
        "Reference",
        "Page",
    )
    v = ("Collection", "Production", "Use", "Management")
    matchedSentences[k] = v

    # Write file for manual review.
    print(f"Writing headers to file: {workingFileName}")
    # Create/truncate file, with headers.
    writeMatches(workingFileName, matchedSentences, overwrite=True)
    # Clear headers from dict.
    matchedSentences.clear()

    # Create temp directory.
    tempDir = tempfile.TemporaryDirectory(prefix="content-analysis-")
    print(f"Review all sentence conversions in dir: {tempDir.name}\n")

    # Iterate over the includedList of entries.
    for entry, pdfFilePath in zip(includedList, pdfFilePaths):

        # Print each file path.
        print(f"Analysing file: {pdfFilePath}")
```

```
        # Read the PDF.
        sentences = getPDFSentences(pdfFilePath)

        # Get start page number from bibliography entry.
        pageStart = bibhelper.getPageStart(entry)

        # Write all sentences to temporary file for conversion review.
        outFileName = os.path.join(tempDir.name, entry.key + ".txt")
        outText = "\n".join(sentences)
        writeToFile(outFileName, text=outText, overwrite=True)

        # Page count init, and page marker regex.
        page = 0
        pageNow = 0
        pageRegex = re.compile(r"#PageCount-[0-9]+ ")

        # Find the sentences that match the terms.
        for term, factor in translationRules.items():
            for sentence in sentences:

                # Handle page, and page count marker.
                m = pageRegex.search(sentence)
                if m:
                    # Calculate actual page number.
                    pageCountStr = m[0].split("-")[1]
                    pageCount = int(pageCountStr)
                    pageNow = pageStart + pageCount - 1
                    if sentence.startswith("#PageCount"):
                        page = pageNow
                    else:
                        # Sentence actually started on the previous page.
                        page = pageNow - 1
                    # Remove page marker from sentence.
                    sentence = pageRegex.sub("", sentence)

                if term.lower() in sentence.lower():
                    pageStr = str(page)
                    k = (factor, term, "`" + sentence + "'", entry.key, pageStr)
                    v = ("", "", "", "")
                    matchedSentences[k] = v

                # All following sentences start on pageNow.
                page = pageNow

    # Merge data.
    print("\nMerging previous manual review with updated matches.")
    print("Items that no longer match are discarded.")
    for m in matchedSentences:
        if m in previousMatches:
            matchedSentences[m] = previousMatches[m]

    # Write data.
```

```
    print(f"Writing content analysis to file: {workingFileName}")
    writeMatches(workingFileName, matchedSentences)
    latexhelper.generateCSFChecklists(workingFileName)
    latexhelper.generateCSFReview(workingFileName)

    # Clean-up is automatic.
    # Wait for reviewer to proceed.
    if wait:
        input("\nPress Enter to automatically clean-up temporary directory.\n")


def parseArgs():
    """Parse command line arguments, returns args."""

    # Create the command line argument parser.
    # Use module docstring as the description in help.
    # Use RawDescriptionHelpFormatter to retain line spacing.
    parser = argparse.ArgumentParser(
        description=__doc__,
        formatter_class=argparse.RawDescriptionHelpFormatter,
    )

    # Required positional argument for the file to process.
    # The file variable will be: args.file.
    parser.add_argument(
        "file",
        help="File path to process, example: Bibliography.bib",
        type=argparse.FileType("r"),
    )

    # Required positional argument for the library path to process.
    # The file variable will be: args.libraryPath.
    parser.add_argument(
        "libraryPath",
        help="PDF Library path to process, example: ../library/",
        type=pathlib.Path,
    )

    # Required positional argument for the working file name.
    # The file variable will be: args.workingFileName.
    # The type is the default string type since the file may not yet exist.
    parser.add_argument(
        "workingFileName",
        help="File path to process, example: ContenAnalysis.csv",
    )

    # Required positional argument for the translation rules to process.
    # The file variable will be: args.translationFile.
    parser.add_argument(
        "translationFile",
        help="File path to process, example: TranslationRules.csv",
        type=argparse.FileType("r"),
    )
```

```
    # Optional argument (flag) to wait for reviewer.
    # If flag given then: args.wait = True.
    parser.add_argument(
        "--wait",
        help="Wait for reviewer before deleting temporary directory.",
        action="store_true",
    )

    # Parse command line args as specified above.
    # If any arguments are not valid, then
    # an appropriate error message is printed to the command line
    # and the application exits.
    args = parser.parse_args()

    # Close file, file argument has been given,
    # and the file is confirmed to exist by parse_args().
    args.file.close()
    args.translationFile.close()

    # Success
    return args


def main():
    """The main function that runs when script is called as an application."""

    # Parse command line arguments.
    args = parseArgs()

    # Print to command line.
    print("# Start of Content Analysis")

    # Print file found message.
    fileName = args.file.name
    print(f"\nFile found: {fileName}, encoding = '{args.file.encoding}'")

    # Print library path message.
    libraryPath = args.libraryPath
    if libraryPath.exists():
        print(f"Library path exists: {libraryPath}")

    # Print file found message.
    translationFileName = args.translationFile.name
    print(
        f"File found: {translationFileName}"
        f", encoding = '{args.translationFile.encoding}'"
    )

    # Parse the .bib file.
    # On failure prints stack trace, error/warning messages, and exits if fatal.
    library = bibtexparser.parse_file(fileName)
```

```
    # Get included entries from the bibliography.
    includedList = getIncludedExcludedEntryLists(library)[0]

    # Perform content analysis.
    print(f"\nAnalysing {len(includedList)} include papers.")
    contentAnalysis(
        includedList=includedList,
        libraryPath=libraryPath,
        workingFileName=args.workingFileName,
        translationFileName=translationFileName,
        wait=args.wait,
    )

    print("\n# End of Content Analysis")


# Run this script as an application if called directly, otherwise
# allow this script to be imported as a module, then
# functions are defined but not executed.
if __name__ == "__main__":
    sys.exit(main())
```

Listing I.2: Translation Rules File `TranslationRules.csv`

```
Term,"Critical Success Factor"
"business analyst","Business Analysis Skills & Competencies"
BPR,"Business Process Reengineering"
"business process re-engineering","Business Process Reengineering"
"business process reengineering","Business Process Reengineering"
champion,Champion
collaboration,Collaboration
communication,Communication
"consultant support","Consultant Support"
"partnership with consultant","Consultant Support"
"software consultant","Consultant Support"
"use of consultant","Consultant Support"
cooperation,Cooperation
budget,"Cost of Function"
cost,"Cost of Function"
"data analysis and conversion","Data Analysis & Conversion"
"data conversion","Data Analysis & Conversion"
"data integrity","Data Analysis & Conversion"
"data management","Data Analysis & Conversion"
"data quality","Data Analysis & Conversion"
"data input","Data Input"
"input incorrect data","Data Input"
documentation,Documentation
documenting,Documentation
education,"Education & Training"
training,"Education & Training"
empower,"Empowered Decision-makers"
"reporting level","Empowered Decision-makers"
"economic environment","External Environment"
"environmental context","External Environment"
"external environment","External Environment"
infrastructure,"IT Infrastructure"
network,"IT Infrastructure"
"knowledge transfer","Knowledge Transfer"
leadership,Leadership
"legacy systems","Legacy Systems (-)"
"management changes","Management Changes (-)"
morale,"Morale & Motivation"
motivation,"Morale & Motivation"
"change management","Organisational Change"
"organisational change","Organisational Change"
"organizational change","Organisational Change"
"realignment strategy","Organisational Change"
resistance,"Organisational Change"
"company culture","Organisational Culture"
"organisational culture","Organisational Culture"
"organizational culture","Organisational Culture"
"internal integration","Organisational Integration"
"organisational structure","Organisational Structure"
"organisation structure","Organisational Structure"
"organizational structure","Organisational Structure"
"organization structure","Organisational Structure"
```

```
"structure of the organisation","Organisational Structure"
"structure of the organization","Organisational Structure"
"performance measurement","Performance Measurement System"
"project management","Project Management Skills & Competencies"
"project manager","Project Management Skills & Competencies"
"project planning","Project Planning"
expectation,"Realistic Expectations"
compliance,"Regulatory & Statutory Compliance"
regulation,"Regulatory & Statutory Compliance"
regulatory,"Regulatory & Statutory Compliance"
"availability of resource","Resource Availability"
"changes in personnel","Resource Availability"
"dedicated resource","Resource Availability"
"human resource","Resource Availability"
"inadequate resource","Resource Availability"
"resource availability","Resource Availability"
"clarity on scope","Scope: Features"
"clear scope","Scope: Features"
culture-specific,"Scope: Features"
"emergent business needs","Scope: Features"
"ERP package","Scope: Features"
"ERP product selection","Scope: Features"
"ERP selection","Scope: Features"
features,"Scope: Features"
functional,"Scope: Features"
"lack of fit","Scope: Features"
non-functional,"Scope: Features"
"package selection","Scope: Features"
"requirement definition","Scope: Features"
requirements,"Scope: Features"
"scope clarity","Scope: Features"
"scope creep","Scope: Features"
"scope management","Scope: Features"
"selection of ERP","Scope: Features"
"system selection","Scope: Features"
customisation,"Scope: Minimal Customisation"
customization,"Scope: Minimal Customisation"
"short term","Short-term Thinking (-)"
short-term,"Short-term Thinking (-)"
configuration,"Software & Hardware Configuration"
"software development","Software & Hardware Development"
"software modification","Software & Hardware Development"
"system development","Software & Hardware Development"
"project board","Steering Committee"
"steering committee","Steering Committee"
architecture,"System Architecture"
integration,"System Integration"
security,"System Security"
"attrition rate of project team","Team Knowledge, Skills & Competencies"
"balanced team","Team Knowledge, Skills & Competencies"
"changes in personnel","Team Knowledge, Skills & Competencies"
competency,"Team Knowledge, Skills & Competencies"
composition,"Team Knowledge, Skills & Competencies"
```

```
"cross-functional team","Team Knowledge, Skills & Competencies"
"good project management team","Team Knowledge, Skills & Competencies"
"project team","Team Knowledge, Skills & Competencies"
"subject matter expert","Team Knowledge, Skills & Competencies"
"team competence","Team Knowledge, Skills & Competencies"
"team work","Team Knowledge, Skills & Competencies"
teamwork,"Team Knowledge, Skills & Competencies"
"turnover rate of project team","Team Knowledge, Skills & Competencies"
"technical challenges","Technical Challenges"
"technical issues","Technical Challenges"
"test automation","Test Automation"
testing,Testing
milestone,Time
"project delay",Time
"project duration",Time
schedule,Time
scheduling,Time
time,Time
tool,Tools
"top management","Top Management Support"
"uncertainty avoidance","Uncertainty Avoidance (-)"
client,"User Involvement"
customer,"User Involvement"
"employee involvement","User Involvement"
"user involvement","User Involvement"
"partnership with vendor","Vendor Support"
"software vendor","Vendor Support"
"use of vendor","Vendor Support"
"vendor support","Vendor Support"
alignment,"Vision, Goals & Objectives"
"business plan","Vision, Goals & Objectives"
"business strategy","Vision, Goals & Objectives"
goals,"Vision, Goals & Objectives"
"misalignment of IT with business","Vision, Goals & Objectives"
objectives,"Vision, Goals & Objectives"
vision,"Vision, Goals & Objectives"
```

Listing I.3: Output File `ContentAnalysisReport.txt`

```
# Start of Content Analysis

File found: Mahmood2020ConnectedPapersGraph.bib, encoding = 'UTF-8'
Library path exists: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph
File found: TranslationRules.csv, encoding = 'UTF-8'

Analysing 28 include papers.
Reading previous matches from file: ContentAnalysis.csv
Writing headers to file: ContentAnalysis.csv
Review all sentence conversions in dir: /tmp/content-analysis-v4jaoi3z

Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/AliEtAl2017ERPSystemImplem.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/AmidEtAl2012IdentiClassiERP.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/AnjumEtAl2015FactorManipuERP.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/BarthEtAl2019CriticSuccesFactor.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/BasogluEtAl2007OrganiAdoptiEnterp.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/BazhairEtAl2015FactorChangeManage.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/Chan2013AustraQuantiSurvey.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/ChatzoglouEtAl2016AnteceOutcomERP.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/CoşkunEtAl2022ERPFailurSystem.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/FinneyEtAl2007ERPImplemCompil.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/GargEtAl2013EmpiriStudyon.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/GargEtAl2014CriticSuccesFactor.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/GargEtAl2014FactorInflueERP.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/GargEtAl2015FactorAffectERP.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/HuangEtAl2021CriticSuccesFactor.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/KhattakEtAl2013InvestCriticSucces.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/MahrazEtAl2020CompilAnalysCritic.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/NgaiEtAl2008ExaminCriticSucces.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/OsmanEtAl2019ERPCriticSucces.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/Rabaai2009IdentiCriticSucces.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/RabaaiEtAl2009ERPSystemHigher.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/RabaaiEtAl2015CulturPerspeon.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/RabaaiEtAl2016SuccesFactorEnterp.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/RavasanEtAl2014FCM-BaDynamiModeli.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/SaygiliEtAl2017EndUsersPercep.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/SethEtAl2015DeveloModelSucces.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/ShaulEtAl2013CriticSuccesFactor.pdf
Analysing file: ../../beng-dissertation-gavin-kromhout-library/Mahmood2020ConnectedPapersGraph/ShukorEtAl2020EnterpResourPlanni.pdf

Merging previous manual review with updated matches.
Items that no longer match are discarded.
Writing content analysis to file: ContentAnalysis.csv
Writing table rows to file: CSFChecklistManagementFunctionTableRows.tex
Writing csv to file: CSFChecklistManagementFunction.csv
Writing table rows to file: CSFChecklistCollectionFunctionTableRows.tex
Writing csv to file: CSFChecklistCollectionFunction.csv
Writing table rows to file: CSFChecklistProductionFunctionTableRows.tex
Writing csv to file: CSFChecklistProductionFunction.csv
Writing table rows to file: CSFChecklistUseFunctionTableRows.tex
Writing csv to file: CSFChecklistUseFunction.csv
Writing csv to file: CSFReview.csv
Writing table rows to file: CSFReviewTableRows.tex

# End of Content Analysis
```

Listing I.4: Output File CSFChecklistManagementFunctionTableRows.tex

```
Champion \\
Collaboration \\
Communication \\
Consultant Support \\
Cooperation \\
Cost of Function \\
Education \& Training \\
Empowered Decision-makers \\
External Environment \\
IT Infrastructure \\
Leadership \\
Legacy Systems (-) \\
Management Changes (-) \\
Morale \& Motivation \\
Organisational Change \\
Organisational Culture \\
Organisational Integration \\
Organisational Structure \\
Performance Measurement System \\
Project Management Skills \& Competencies \\
Project Planning \\
Realistic Expectations \\
Regulatory \& Statutory Compliance \\
Scope: Features \\
Short-term Thinking (-) \\
Steering Committee \\
System Architecture \\
Top Management Support \\
Uncertainty Avoidance (-) \\
Vendor Support \\
Vision, Goals \& Objectives \\
```

Listing I.5: Output File CSFChecklistCollectionFunctionTableRows.tex

```
Business Process Reengineering \\
Collaboration \\
Communication \\
Cooperation \\
Cost of Function \\
Data Input \\
Education \& Training \\
Organisational Change \\
Organisational Culture \\
Organisational Integration \\
Realistic Expectations \\
User Involvement \\
```

Listing I.6: Output File CSFChecklistProductionFunctionTableRows.tex

```
Business Analysis Skills \& Competencies \\
Collaboration \\
Communication \\
Cooperation \\
Cost of Function \\
Data Analysis \& Conversion \\
Education \& Training \\
Knowledge Transfer \\
Morale \& Motivation \\
Organisational Change \\
Organisational Culture \\
Resource Availability \\
Scope: Minimal Customisation \\
Software \& Hardware Configuration \\
Software \& Hardware Development \\
System Integration \\
System Security \\
Team Knowledge, Skills \& Competencies \\
Technical Challenges \\
Test Automation \\
Testing \\
Time \\
Tools \\
```

Listing I.7: Output File CSFChecklistUseFunctionTableRows.tex

```
Business Process Reengineering \\
Collaboration \\
Communication \\
Cooperation \\
Cost of Function \\
Education \& Training \\
Morale \& Motivation \\
Organisational Change \\
Organisational Culture \\
Organisational Integration \\
Realistic Expectations \\
User Involvement \\
```

Listing I.8: Output File CSFChecklistManagementFunction.csv

```
"Critical Success Factor","Relevant to Context Y/N","Actual","Target","Action"
"Champion","","","",""
"Collaboration","","","",""
"Communication","","","",""
"Consultant Support","","","",""
"Cooperation","","","",""
"Cost of Function","","","",""
"Education & Training","","","",""
"Empowered Decision-makers","","","",""
"External Environment","","","",""
"IT Infrastructure","","","",""
"Leadership","","","",""
"Legacy Systems (-)","","","",""
"Management Changes (-)","","","","",""
"Morale & Motivation","","","",""
"Organisational Change","","","",""
"Organisational Culture","","","",""
"Organisational Integration","","","",""
"Organisational Structure","","","",""
"Performance Measurement System","","","","",""
"Project Management Skills & Competencies","","","","",""
"Project Planning","","","",""
"Realistic Expectations","","","","",""
"Regulatory & Statutory Compliance","","","","",""
"Scope: Features","","","","",""
"Short-term Thinking (-)","","","","",""
"Steering Committee","","","",""
"System Architecture","","","",""
"Top Management Support","","","","",""
"Uncertainty Avoidance (-)","","","","",""
"Vendor Support","","","",""
"Vision, Goals & Objectives","","","",""
```

Listing I.9: Output File CSFChecklistCollectionFunction.csv

```
"Critical Success Factor","Relevant to Context Y/N","Actual","Target","Action"
"Business Process Reengineering","","","",""
"Collaboration","","","",""
"Communication","","","",""
"Cooperation","","","",""
"Cost of Function","","","",""
"Data Input","","","",""
"Education & Training","","","",""
"Organisational Change","","","",""
"Organisational Culture","","","",""
"Organisational Integration","","","",""
"Realistic Expectations","","","",""
"User Involvement","","","",""
```

Listing I.10: Output File CSFChecklistProductionFunction.csv

```
"Critical Success Factor","Relevant to Context Y/N","Actual","Target","Action"
"Business Analysis Skills & Competencies","","","",""
"Collaboration","","","",""
"Communication","","","",""
"Cooperation","","","",""
"Cost of Function","","","","",""
"Data Analysis & Conversion","","","","",""
"Education & Training","","","","",""
"Knowledge Transfer","","","","",""
"Morale & Motivation","","","","",""
"Organisational Change","","","","",""
"Organisational Culture","","","","",""
"Resource Availability","","","","",""
"Scope: Minimal Customisation","","","","",""
"Software & Hardware Configuration","","","","",""
"Software & Hardware Development","","","","",""
"System Integration","","","","",""
"System Security","","","","",""
"Team Knowledge, Skills & Competencies","","","","",""
"Technical Challenges","","","","",""
"Test Automation","","","","",""
"Testing","","","","",""
"Time","","","","",""
"Tools","","","","",""
```

Listing I.11: Output File CSFChecklistUseFunction.csv

```
"Critical Success Factor","Relevant to Context Y/N","Actual","Target","Action"
"Business Process Reengineering","","","",""
"Collaboration","","","",""
"Communication","","","",""
"Cooperation","","","",""
"Cost of Function","","","","",""
"Education & Training","","","","",""
"Morale & Motivation","","","","",""
"Organisational Change","","","","",""
"Organisational Culture","","","","",""
"Organisational Integration","","","","",""
"Realistic Expectations","","","","",""
"User Involvement","","","","",""
```

Listing I.12: Output File `CSFReviewTableRows.tex`

```
Business Analysis Skills \& Competencies & business analyst & `CSFs for
    successful ERP implementation are identified as top management support,
    presence of a champion, good communication with stakeholders, effective
    project planning, business process re-engineering (BPR), and using a
    business analyst on the project team (Bancroft et al., 1998; Bingi et al.,
    1999).' \autocite[674]{AliEtAl2017ERPSystemImplem} & Production \\
Business Analysis Skills \& Competencies & business analyst & `Successful ERP
    implementation requires the coordination of many activities and a close
    cooperation between managers, employees, IT specialists, business analysts
    and consultants [39].' \autocite[1255]{ChatzoglouEtAl2016AnteceOutcomERP} &
    Production \\
Business Analysis Skills \& Competencies & business analyst & `The critical
    success factors consistently identified in the literature include top
    management support, the presence of a champion, good communication with all
    stakeholders, effective project management, reengineering of business
    processes, an understanding of corporate cultural change, and the use of
    business analysts on the project team.'
    \autocite[88]{RabaaiEtAl2015CulturPerspeon} & Production \\
Business Analysis Skills \& Competencies & business analyst & `Item Description
    1 top management support 25 application project costs 2 effective
    communication 26 interdepartmental cooperation 3 interdepartmental
    communication 27 dedicated resources 4 clear goal and objectives 28 ERP
    vendor relations 5 business plan-vision 29 ongoing vendor support 6 change
    management 30 use of vendor's development tools 7 education on new business
    process 31 organizational characteristics 8 user training\& education 32
    employee / team morale-motivation 9 user acceptance 33 leadership of the
    project team 10 managing cultural change 34 project team competence-
    composition 11 business process reengineering 35 ERP team work 12
    customization 36 steering committee 13 minimal customization 37 empowered
    decision makers 14 software configuration 38 use of consultants 15 data
    accuracy 39 obtain business analysts 16 data analysis- conversion 40 project
    champion 17 software development testing \& troubleshooting 41 appropriate
    business-legacy systems 18 implementation strategies 42 data integration 19
    ERP package selection 43 scope \& vision based performance 20 feasible
    evaluation of ERP project 44 monitoring- evaluation of performance 21 IT
    infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Production \\
Business Process Reengineering & BPR & `CSFs for successful ERP implementation
    are identified as top management support, presence of a champion, good
    communication with stakeholders, effective project planning, business
    process re-engineering (BPR), and using a business analyst on the project
    team (Bancroft et al., 1998; Bingi et al., 1999).'
    \autocite[674]{AliEtAl2017ERPSystemImplem} & Collection, Use \\
Business Process Reengineering & BPR & `They rate CSFs by a degree of importance
    during ERP implementation as follows: (1) top management support; (2)
    project team competence; (3) inter-departmental cooperation; (4) clear goals
    and objectives; (5) project management; (6) inter-departmental
    communication; (7) management of expectation; (8) project champion; (9)
    vendors' support; (10) careful package selection; (11) data analysis and
    conversion; (12) dedicated resources; (13) use of steering committee; (14)
    user training on software; (15) education on new business processes; (16)
    BPR; (17) minimal customisation; (18) architecture choices; (19) change
    management; (20) partnership with vendors; (21) use of vendors' tool; and
    (22) use of consultant.' \autocite[674]{AliEtAl2017ERPSystemImplem} &
    Collection, Use \\
Business Process Reengineering & BPR & `Important CSFs identified are: ERP team
    work and composition, top management support, business plan and vision,
```

```
    effective communication, project management, project champion, appropriate
    business and legacy systems, change management programmes, culture, BPR,
    minimum customisation, software development, testing, trouble shooting,
    monitoring, and evaluation of performance.'
    \autocite[675]{AliEtAl2017ERPSystemImplem} & Collection, Use \\
Business Process Reengineering & BPR & `They observe that vendor failure to
    adapt to local culture, BPR, managing local human resources, lack of
    information sharing, failure to understand cultural characteristics, lack of
    adaptability towards a changing business and economic environment, lack of
    cost control functions (i.e. adapting to changing costs), and failure to
    understand technical issues are the main causes of ERP implementation
    failure.' \autocite[681]{AliEtAl2017ERPSystemImplem} & Collection, Use \\
Business Process Reengineering & BPR & `Lesser, but still important CSFs are,
    having a good business plan, vision, having a project champion, appropriate
    business and legacy systems, change management programmes, culture, BPR,
    minimum customisation, software development, testing, trouble shooting,
    monitoring, and the evaluation of performance (Markus, Axline, Petrie and
    Tanis, 2000; Bancroft et al., 1998; Bingi et al., 1999; Nah et al., 2001;
    Umble et al., 2003; Ehie and Madsen, 2005; Sarkar and Lee, 2003; Umble et
    al., 2003; Kim et al., 2005; Motwani et al., 2005; Nah and Delgado, 2006;
    Maguire et al., 2010).' \autocite[682]{AliEtAl2017ERPSystemImplem} &
    Collection, Use \\
Business Process Reengineering & BPR & `In this work, authors mentioned that
    lack of education, BPR, project management, top management support and
    unrealistic expectations of users could lead companies to fail.'
    \autocite[229]{AmidEtAl2012IdentiClassiERP} & Collection, Use \\
Business Process Reengineering & BPR & `BPR can be defined as the primary
    rethinking and essential redesign of business procedures to attain
    remarkable enhancement in significant, existing procedures of performances,
    like quality, speed approaches, cost and service (Hammer and Champy, 1993;
    Koch, 2001; Huang et al., 2004).'
    \autocite[629]{AnjumEtAl2015FactorManipuERP} & Collection, Use \\
Business Process Reengineering & BPR & `Necessary Business Process Reengineering
    (BPR) activities in the organization, customizations on the ERP software and
    training of users about the new system should be managed and coordinated by
    the project management of the ERP project to remove the incompatibilities
    between technology, organization and people.'
    \autocite[75]{BasogluEtAl2007OrganiAdoptiEnterp} & Collection, Use \\
Business Process Reengineering & BPR & `Within that subject, Van der Aalst and
    Weijters (2005) introduced processing mining as a preliminary step of ERP
    implementation, while Chiplunkar, Deshmukh, and Chattopadhyay (2003)
    suggested the capture of complete business environment in a BPR project with
    the help of information technology.'
    \autocite[78]{BasogluEtAl2007OrganiAdoptiEnterp} & Collection, Use \\
Business Process Reengineering & BPR & `This problem can only be solved by
    adapting the organization to the package through extensive BPR (Kremers \&
    Van Dissel, 2000; Somers \& Nelson, 2003).'
    \autocite[81]{BasogluEtAl2007OrganiAdoptiEnterp} & Collection, Use \\
Business Process Reengineering & BPR & `BPR was described as ``the fundamental
    rethinking and radical design of business processes to achieve dramatic
    improvement in critical, contemporary measures of performance such as cost,
    quality, service and speed'' by Hammer and Champy (1993).'
    \autocite[81]{BasogluEtAl2007OrganiAdoptiEnterp} & Collection, Use \\
Business Process Reengineering & BPR & `As well as improving the efficiency of
    an individual company success, BPR can be envisaged as a hierarchy of
    business reconfiguration, from local exploitation through internal
    integration and business process redesign to business network redesign and
    ultimately business scope redefinition (Venkatraman, 1991).'
```

```
    \autocite[81]{BasogluEtAl2007OrganiAdoptiEnterp} & Collection, Use \\
Business Process Reengineering & BPR & `However, achieving BPR is as hard as
    implementing an ERP system, but it is a must to obtain optimization of ERP
    systems.' \autocite[81]{BasogluEtAl2007OrganiAdoptiEnterp} & Collection, Use
    \\
Business Process Reengineering & BPR & `As well as BPR, customization is also a
    crucial, lengthy, and costly aspect in the compatibility of ERP system and
    the organizational processes (Yusuf et al., 2004).'
    \autocite[81]{BasogluEtAl2007OrganiAdoptiEnterp} & Collection, Use \\
Business Process Reengineering & BPR & `BPR activities and training are also
    critical factors in ERP implementation that have effects on organizational
    adoption (Somers \& Nelson, 2003).'
    \autocite[82]{BasogluEtAl2007OrganiAdoptiEnterp} & Collection, Use \\
Business Process Reengineering & BPR & `BPR is a must for ERP projects.'
    \autocite[82]{BasogluEtAl2007OrganiAdoptiEnterp} & Collection, Use \\
Business Process Reengineering & BPR & `They suggested that innovative
    characteristics of an organization like BPR, technical compatibility and
    perceived complexity; organizational characteristics like top management
    support, organizational objective consensus and training; and finally
    environmental characteristics like competitive pressure have a direct effect
    on ERP implementation success and end user satisfaction (see Fig. 6).'
    \autocite[83]{BasogluEtAl2007OrganiAdoptiEnterp} & Collection, Use \\
Business Process Reengineering & BPR & `For that purpose, adequate customization
    and necessary BPR, in which business processes are designed within the
    framework of the target ERP system, has to be performed (Lee \& Myers, 2004;
    Soffer, Golany, \& Dori, 2005) (see Fig. 15).'
    \autocite[88]{BasogluEtAl2007OrganiAdoptiEnterp} & Collection, Use \\
Business Process Reengineering & BPR & `If the project is managed by performing
    BPR and customization activities adequately, moving from P1 to P2 is not
    hard.' \autocite[88]{BasogluEtAl2007OrganiAdoptiEnterp} & Collection, Use \\
Business Process Reengineering & BPR & `Work practices, poor data quality, BPR
    activities, customization of the ERP system, internal staff adequacy,
    training, top management support, quality of consultants are the main
    problems (Genoulaz \& Millet, 2006).'
    \autocite[89]{BasogluEtAl2007OrganiAdoptiEnterp} & Collection, Use \\
Business Process Reengineering & BPR & `Additionally, critical success factors
    of ERP projects like customization, BPR, top management support, training
    and communication were grouped under these three actors and also project
    management for testing their effect on organizational adoption, too.'
    \autocite[89]{BasogluEtAl2007OrganiAdoptiEnterp} & Collection, Use \\
Business Process Reengineering & BPR & `As well as customization of the ERP
    system, BPR is very crucial on the adoption of the ERP projects (Kremers \&
    Van Dissel, 2000; Somers \& Nelson, 2003).'
    \autocite[91]{BasogluEtAl2007OrganiAdoptiEnterp} & Collection, Use \\
Business Process Reengineering & BPR & `Business process reengineering (BPR) has
    been, often, proposed as a critical success factor for ERP implementation
    [29].' \autocite[1255]{ChatzoglouEtAl2016AnteceOutcomERP} & Collection, Use
    \\
Business Process Reengineering & BPR & `Typically, BPR is carried out in order
    to restructure non-value-adding operations, reduce the complexity of
    business processes and eliminate inefficient processes [43].'
    \autocite[1255]{ChatzoglouEtAl2016AnteceOutcomERP} & Collection, Use \\
Business Process Reengineering & BPR & `Studies in the last 5 years show that
    organizations that do not adapt to best practices and care about BPR are
    more likely to face failure.' \autocite[14]{CoşkunEtAl2022ERPFailurSystem} &
    Collection, Use \\
Business Process Reengineering & BPR & `The need to conduct BPR and software
    configuration was the third most commonly cited CSF.'
```

```
    \autocite[337]{FinneyEtAl2007ERPImplemCompil} & Collection, Use \\
Business Process Reengineering & BPR & `Table III reveals that the five most
    widely cited categories, top management commitment and support, change
    management, BPR and software configuration, training and job redesign, and
    project team: the best and brightest, are significantly more often
    researched than the others.' \autocite[339]{FinneyEtAl2007ERPImplemCompil} &
    Collection, Use \\
Business Process Reengineering & BPR & `Frequency analysis of CSFs in literature
    CSF category Top management commitment and support Change management BPR and
    software configuration Training and job redesign Project team: the best and
    brightest Implementation strategy and timeframe Consultant selection and
    relationship Visioning and planning Balanced team Project champion
    Communication plan IT infrastructure Managing cultural change Post-
    implementation evaluation Selection of ERP Team morale and motivation
    Vanilla ERP Project management Troubleshooting/crises management Legacy
    system consideration Data conversion and integrity System testing Client
    consultation Project cost planning and management Build a business case
    Empowered decision makers Number of instances cited in literature 25 25 23
    23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very
    often focused on only a specific aspect of the implementation process or a
    specific CSF.' \autocite[340]{FinneyEtAl2007ERPImplemCompil} & Collection,
    Use \\
Business Process Reengineering & BPR & `These factors include, but not limited
    to, poor consultant effectiveness, ERP software misfit, unrealistic
    expectations from top management concerning the ERP systems, over-reliance
    on heavy customization, poor quality of Business Process Reengineering
    (BPR), high turnover rate of project team members, poor IT Infrastructure,
    functionality problems with the system, unclear concept of the nature and
    use of the ERP system from the users perspective, too tight project
    schedule, lack of formal communication, part-time dedication, etc.'
    \autocite[498]{GargEtAl2013EmpiriStudyon} & Collection, Use \\
Business Process Reengineering & BPR & `Consultants who are not able to
    demonstrate a mastery of professional communication skills, good language
    capability, industrial knowledge, and business analytical skills, are not
    able to provide expertise concerning project planning, ERP systems and BPR
    during ERP implementation and hence cannot act as change agents and fill the
    knowledge gaps (Ngai et al., 2008; Stebel, 1992; Ganesh and Mehta, 2010; Nah
    and Lau, 2001) (for example, communicating with project team members and
    users for acquiring business requirements, conducting BPR and delivering
    professional training).' \autocite[499]{GargEtAl2013EmpiriStudyon} &
    Collection, Use \\
Business Process Reengineering & BPR & `If the team is not the cross-functional
    team consisting of people who are familiar with both business functions,
    technology and products (Buckhout et al., 1999; Bingi et al., 1999; Rosario,
    2000), the team will not be able to collaborate and contribute to BPR.'
    \autocite[499]{GargEtAl2013EmpiriStudyon} & Collection, Use \\
Business Process Reengineering & BPR & `The poor quality of BPR led to incorrect
    system configuration problems and hence failed implementation.'
    \autocite[499]{GargEtAl2013EmpiriStudyon} & Collection, Use \\
Business Process Reengineering & BPR & `Poor consultant effectiveness and poor
    PM effectiveness can lead to a low quality of BPR and the business processes
    may match poorly with the ERP systems, resulting in implementation failure.'
    \autocite[405]{GargEtAl2014CriticSuccesFactor} & Collection, Use \\
Business Process Reengineering & BPR & `3.3 BPR BPR is defined by Hammer and
    Champy (1993) as ``the fundamental rethinking and radical redesign of
    business processes to achieve dramatic improvements in critical,
    contemporary measures of performance such as cost, quality, service and
    speed.'' BPR analyzes the process of an organization's business in order to
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    identify the best way of doing things.'
    \autocite[408]{GargEtAl2014CriticSuccesFactor} & Collection, Use \\
Business Process Reengineering & BPR & `BPR came earlier than the popularization
    of ERP.' \autocite[408]{GargEtAl2014CriticSuccesFactor} & Collection, Use \\
Business Process Reengineering & BPR & `It is ERP that rescues the idea of BPR
    and forces the company to redefine and redesign work flows to fit the new
    software: H3.' \autocite[408]{GargEtAl2014CriticSuccesFactor} & Collection,
    Use \\
Business Process Reengineering & BPR & `BPR is positively related with ERP
    implementation success.' \autocite[408]{GargEtAl2014CriticSuccesFactor} &
    Collection, Use \\
Business Process Reengineering & BPR & `In addition, BPR, UI was positively
    related to success of ERP implementation at 0.01 significance level (r =
    0.763).' \autocite[411]{GargEtAl2014CriticSuccesFactor} & Collection, Use \\
Business Process Reengineering & BPR & `The results of this research support the
    suggested hypothesis (H3) that there is positive relationship between BPR
    and success of ERP implementation at Fortis hospital (t-value = 2.821,
    p-value = 0.043).' \autocite[414]{GargEtAl2014CriticSuccesFactor} &
    Collection, Use \\
Business Process Reengineering & BPR & `So it can be concluded that BPR is
    important vehicle for success of ERP implementation as it help in re-
    aligning strategy, operations and systems to deliver significantly increased
    financial results and customer satisfaction.'
    \autocite[414]{GargEtAl2014CriticSuccesFactor} & Collection, Use \\
Business Process Reengineering & BPR & `Managers have to decide if they do BPR
    before, during or after ERP implementation.'
    \autocite[416]{GargEtAl2014CriticSuccesFactor} & Collection, Use \\
Business Process Reengineering & BPR & `(3) Hospitals normally adopt BPR to
    pursue multiple improvement goals including quality, cost, flexibility,
    speed and accuracy.' \autocite[418]{GargEtAl2014CriticSuccesFactor} &
    Collection, Use \\
Business Process Reengineering & BPR & `BPR supports the re-thinking of business
    processes and is necessary to software applications such as ERP systems.'
    \autocite[418]{GargEtAl2014CriticSuccesFactor} & Collection, Use \\
Business Process Reengineering & BPR & `Hospitals should adopt BPR to adapt to
    ERP system, and should not modify the package to adapt to business process
    to incorporate the best practices worldwide.'
    \autocite[418]{GargEtAl2014CriticSuccesFactor} & Collection, Use \\
Business Process Reengineering & BPR & `BPR can be defined as the fundamental
    rethinking and radical redesign of business process to achieve dramatic
    improvement in critical, contemporary measures of performance, such as cost,
    quality, service and speed approaches (Koch, 2001; Huang et al., 2004).'
    \autocite[431]{GargEtAl2014FactorInflueERP} & Collection, Use \\
Business Process Reengineering & BPR & `The executives of the Chinese
    organizations have a tendency to rely on their intuition, experience, skills
    and insights from personal relationships to evaluate and assess situations
    and make decisions accordingly (Martisons \& Westwood, 1997) and that is why
    it may be a reason of considering BPR as a least critical success factor.'
    \autocite[66]{KhattakEtAl2013InvestCriticSucces} & Collection, Use \\
Business Process Reengineering & BPR & `On the other hand the Pakistani
    companies' executives might readily believe that they should change their
    existing ways of doing business because of the ERP systems is already in
    place and therefore, might have understood that the ERP project requires BPR
    and that is why they treat it as a CSF.'
    \autocite[66]{KhattakEtAl2013InvestCriticSucces} & Collection, Use \\
Business Process Reengineering & BPR & `According to the literature, the most
    studied factors were: Top Management Support, Effective Communication,
    Training, and Education, Business plan and vision, Project Management, BPR
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    management, Change Management, Project team Composition/ Teamwork, Project
    champion, ERP Choices, Technical Implementation, Technological
    Infrastructure, Legacy systems consideration.'
    \autocite[112]{MahrazEtAl2020CompilAnalysCritic} & Collection, Use \\
Business Process Reengineering & BPR & `These three factors could be considered
    one from the top 3, the other elements as IT infrastructure, BPR management,
    and Project management are less critical from the participants.'
    \autocite[119]{MahrazEtAl2020CompilAnalysCritic} & Collection, Use \\
Business Process Reengineering & BPR & `BPR management: Business process re-
    engineering is one of the crucial steps in ERP implementation.'
    \autocite[122]{MahrazEtAl2020CompilAnalysCritic} & Collection, Use \\
Business Process Reengineering & BPR & `3.3. Business process reengineering A
    certain level of BPR should be involved for the implementation of ERP, as
    the packaged software may be incompatible with the needs and business
    processes of the organization [10,51,69].'
    \autocite[551]{NgaiEtAl2008ExaminCriticSucces} & Collection, Use \\
Business Process Reengineering & BPR & `Other problems reported are lack of BPR
    [87], poor communications, lack of support from management, limited level of
    user involvement, poor training from vendors [90], and weakness in existing
    IT infrastructure [41].' \autocite[559]{NgaiEtAl2008ExaminCriticSucces} &
    Collection, Use \\
Business Process Reengineering & BPR & `This recognition leads us to emphasize
    that it is of paramount importance for academic researchers and those
    involved in ERP implementation to thoroughly understand the business
    practice and knowledge of the ERP adopting firms, which are necessary for
    excellent performance in CSFs such as BPR, and ERP fit.'
    \autocite[561]{NgaiEtAl2008ExaminCriticSucces} & Collection, Use \\
Business Process Reengineering & BPR & `the most important outcome of BPR has
    been viewing business activities as more than a collection of individual or
    even functional tasks; it has engendered the process-oriented view of
    business.' \autocite[38]{OsmanEtAl2019ERPCriticSucces} & Collection, Use \\
Business Process Reengineering & BPR & `To be clear, the company's business
    strategy indicates what it wants to do, BPR indicates how to do it and the
    ERP system answers the question with what.'
    \autocite[38]{OsmanEtAl2019ERPCriticSucces} & Collection, Use \\
Business Process Reengineering & BPR & `In literature, BPR and minimal
    customization is the third most commonly cited CSF.'
    \autocite[38]{OsmanEtAl2019ERPCriticSucces} & Collection, Use \\
Business Process Reengineering & BPR & `Once the ERP system is in use, BPR
    should be continued with new ideas and updates to get full benefits of the
    system.' \autocite[38]{OsmanEtAl2019ERPCriticSucces} & Collection, Use \\
Business Process Reengineering & BPR & `This is because the business process
    reengineering (BPR) and the customisation of the software to fit the
    business needs can become serious and costly problems allied with the
    implementation, as there might be a difference between the functionality
    offered by the software and that required by the organisation.'
    \autocite[3]{Rabaai2009IdentiCriticSucces} & Collection, Use \\
Business Process Reengineering & BPR & `Eleven critical factors were identified,
    such as ERP teamwork and composition, change management program and culture,
    top management support, business plan and vision, business process
    reengineering (BPR) and minimum customisation, effective communications,
    project management, software development, testing and troubleshooting,
    monitoring and evaluating performance, project champion, and appropriate
    business and IT legacy systems.' \autocite[6]{Rabaai2009IdentiCriticSucces}
    & Collection, Use \\
Business Process Reengineering & BPR & `Across various developing countries,
    Huang and Palvia (2001) identified many factors of national and
    organisational culture affecting ERP implementation including economic
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    status and growth, infrastructure, government regulation, low IT maturity,
    small firm size, and lack of process management and BPR experience.'
    \autocite[88]{RabaaiEtAl2015CulturPerspeon} & Collection, Use \\
Business Process Reengineering & BPR & `Communication for some projects must go
    beyond a (monthly) update as transparency is required for academic
    stakeholders who may not appreciate what a project involves in terms of
    BPR.' \autocite[56]{RabaaiEtAl2016SuccesFactorEnterp} & Collection, Use \\
Business Process Reengineering & BPR & `This illustrates the relationship
    between BPR and customisation to unique processes in the higher education
    sector, which is possibly the most critical of the CSFs for the sector,
    assuming the others are professionally managed.'
    \autocite[57]{RabaaiEtAl2016SuccesFactorEnterp} & Collection, Use \\
Business Process Reengineering & BPR & `One of the first articles that has been
    published about analyzing ERP failures returned to Umble and Umble (2002) in
    which they mentioned that lack of education, BPR, project management, top
    management support and unrealistic expectations of users could lead
    companies to fail.' \autocite[35]{RavasanEtAl2014FCM-BaDynamiModeli} &
    Collection, Use \\
Business Process Reengineering & business process re-engineering & `The same
    applies to the factor business process re-engineering and customization,
    which is a key factor in ERP implementation projects.'
    \autocite[668]{BarthEtAl2019CriticSuccesFactor} & Collection, Use \\
Business Process Reengineering & business process re-engineering & `To use
    potentials of an ERP system is a major part of business process re-
    engineering, which is in itself a critical success factor within ERP
    implementation projects.' \autocite[668]{BarthEtAl2019CriticSuccesFactor} &
    Collection, Use \\
Business Process Reengineering & business process re-engineering & `This belief
    may adversely affect the attitude towards information sharing, and business
    process re-engineering.' \autocite[559]{NgaiEtAl2008ExaminCriticSucces} &
    Collection, Use \\
Business Process Reengineering & business process re-engineering & `4.4 Business
    Process Re-engineering and System's Customisation Shehab et al., (2004)
    stated that there are two different strategic approaches to implementing an
    ERP system.' \autocite[8]{Rabaai2009IdentiCriticSucces} & Collection, Use \\
Business Process Reengineering & business process re-engineering & `They are the
    few key areas where things must go right. . . '' An earlier paper by this team
    (Ram, Corkindale and Wu, 2013) tabulated the relationships found in the
    literature between CSFs and implementation or performance output success to
    identify four factors consistently emerging as central, namely project
    management, training and education, business process re-engineering and
    system integration.' \autocite[87]{RabaaiEtAl2015CulturPerspeon} &
    Collection, Use \\
Business Process Reengineering & business process re-engineering & `Restructure
    business processes aligned with the ERP system (business process re-
    engineering).' \autocite[74]{SaygiliEtAl2017EndUsersPercep} & Collection,
    Use \\
Business Process Reengineering & business process re-engineering & `● IT
    infrastructure ● System Training and knowledge transfer ● Over-dependence on
    detailed and heavy customization ● High turnover rate of project team
    members ● Business process re-engineering ● User's resistance to transform ●
    ERP system misfit Considering these critical factors, specifically affecting
    the agricultural business sectors in Malaysia, there are a few possible
    suggestions proposed.' \autocite[2055]{ShukorEtAl2020EnterpResourPlanni} &
    Collection, Use \\
Business Process Reengineering & business process reengineering & `Lack of
    proper integration and knowledge of business process reengineering are other
    problems of local solutions.' \autocite[229]{AmidEtAl2012IdentiClassiERP} &
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    Collection, Use \\
Business Process Reengineering & business process reengineering & `The results
    of this study show that ``Managers and employees readiness to change'',
    ``Top management Support'', ``Business Process Reengineering'', ``Software
    and user interface development'' and ``Change management'' are five top
    critical success factors.' \autocite[109]{Chan2013AustraQuantiSurvey} &
    Collection, Use \\
Business Process Reengineering & business process reengineering & `During ERP
    implementation, business process reengineering should take place, in order
    to take full advantage of the new system [14] [34].'
    \autocite[1254]{ChatzoglouEtAl2016AnteceOutcomERP} & Collection, Use \\
Business Process Reengineering & business process reengineering & `In this
    study, the dimension of ``internal environment'' includes four factors (top
    management support, business process reengineering, organizational culture,
    change management).' \autocite[1255]{ChatzoglouEtAl2016AnteceOutcomERP} &
    Collection, Use \\
Business Process Reengineering & business process reengineering & `This includes
    the amount of the systems implemented, involvement of business units, and
    amount of business process reengineering needed.'
    \autocite[509]{GargEtAl2013EmpiriStudyon} & Collection, Use \\
Business Process Reengineering & business process reengineering & `(1) The
    ``Organizational'' factor in this study is defined by business plan and
    vision, top management support, business process reengineering, ERP product
    selection, selection of implementation partner/consultants and enterprise
    wide communication plan items which may affect the success of ERP
    implementation in Indian retail sector.'
    \autocite[1327]{GargEtAl2015FactorAffectERP} & Collection, Use \\
Business Process Reengineering & business process reengineering & `Extrinsic(3)
    Organizational CSFs (15) People CSFs (12) Technological CSFs (5) ●
    Communication within the company ● Organization resistance ● Project budget
    ● Project management ● Implementation strategy ● Strategic goals and
    objectives ● Business process reengineering ● organizational culture ●
    knowledge base of the company ● Project planning and control ● Facilitating
    conditions ● Organization size ● The vision of the organization ● Readiness
    of organizations ● Clarity of potential cost ● User involvement ● Selection
    of vendor/consult ant ● Project team ● Top management support ● Training of
    user ● Trust on vendor ● Performance expectancy ● Effort expectancy ● Social
    influence ● Age ● Gender ● Highest degree attained ● Selection of ERP
    package ● IT infrastructure ● Data integrity and system testing.'
    \autocite[4686]{HuangEtAl2021CriticSuccesFactor} & Collection, Use \\
Business Process Reengineering & business process reengineering &
    `Implementation strategy Strategic goals and objectives User involvement
    Business process reengineering Selection of vendor/consultant IT
    infrastructure.' \autocite[4688]{HuangEtAl2021CriticSuccesFactor} &
    Collection, Use \\
Business Process Reengineering & business process reengineering & `The findings
    of our study reveal that `appropriate business and IT legacy systems',
    `business plan/vision/goals/justification', `business process
    reengineering', `change management culture and programme', `communication',
    `ERP teamwork and composition', `monitoring and evaluation of performance',
    `project champion', `project management', `software/system development,
    testing and troubleshooting', `top management support', `data management',
    `ERP strategy and implementation methodology', `ERP vendor', `organizational
    characteristics', `fit between ERP and business/process', `national culture'
    and `country-related functional requirement' were the commonly extracted
    factors across these 10 countries/regions.'
    \autocite[548]{NgaiEtAl2008ExaminCriticSucces} & Collection, Use \\
Business Process Reengineering & business process reengineering & `For instance,
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    Al-Mashari and Al-Mudimigh (2003) argued that the importance of an effective
    communication plan relies on the fact that it could build the ability of the
    entire organisation in business process reengineering, and gain all
    stakeholders' support and commitment.'
    \autocite[10]{Rabaai2009IdentiCriticSucces} & Collection, Use \\
Business Process Reengineering & business process reengineering & `ERP failure
    factors and categories Failure Categories Failure Factors C4: Project
    Management F1: Conflicts between organization and consultants/ vendor C5:
    Technical F2: High rate of system customization C5: Technical F3: Data
    management issues C2: Human Resources F4: Inadequate education and training
    C2: Human Resources F5: Inadequate user involvement C2: Human Resources F6:
    Ineffective communications system C3: Organizational F7: Internal conflicts
    between departments C2: Human Resources F8: Inadequate change management C3:
    Organizational F9: Lack of performance measurement system C3: Organizational
    F10: Misfit between organization culture and ERP system C3: Organizational
    F11: Misfit between organization structure and ERP system C3: Organizational
    F12: Misfits between the IT and business strategies C1: Environmental F13:
    Environmental pressures C3: Organizational F14: Poor business process
    reengineering C1: Environmental F15: Poor consultant C4: Project Management
    F16: Poor project management C4: Project Management F17: Poor risk
    management C3: Organizational F18: Poor top management support C5: Technical
    F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...'
    \autocite[42]{RavasanEtAl2014FCM-BaDynamiModeli} & Collection, Use \\
Business Process Reengineering & business process reengineering & `Item
    Description 1 top management support 25 application project costs 2
    effective communication 26 interdepartmental cooperation 3 interdepartmental
    communication 27 dedicated resources 4 clear goal and objectives 28 ERP
    vendor relations 5 business plan-vision 29 ongoing vendor support 6 change
    management 30 use of vendor's development tools 7 education on new business
    process 31 organizational characteristics 8 user training\& education 32
    employee / team morale-motivation 9 user acceptance 33 leadership of the
    project team 10 managing cultural change 34 project team competence-
    composition 11 business process reengineering 35 ERP team work 12
    customization 36 steering committee 13 minimal customization 37 empowered
    decision makers 14 software configuration 38 use of consultants 15 data
    accuracy 39 obtain business analysts 16 data analysis- conversion 40 project
    champion 17 software development testing \& troubleshooting 41 appropriate
    business-legacy systems 18 implementation strategies 42 data integration 19
    ERP package selection 43 scope \& vision based performance 20 feasible
    evaluation of ERP project 44 monitoring- evaluation of performance 21 IT
    infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Collection, Use \\
Business Process Reengineering & business process reengineering & `The sub-
    factors represent the fundamental management functions introduced by Draft
    (1991) planning (implementation strategies, project management), organizing
    (business process reengineering, management of expectations, project team
    competence and composition) and leading (leadership of project team,
    employee / team morale and motivation).'
    \autocite[68]{SaygiliEtAl2017EndUsersPercep} & Collection, Use \\
Champion & champion & `CSFs for successful ERP implementation are identified as
    top management support, presence of a champion, good communication with
    stakeholders, effective project planning, business process re-engineering
    (BPR), and using a business analyst on the project team (Bancroft et al.,
    1998; Bingi et al., 1999).' \autocite[674]{AliEtAl2017ERPSystemImplem} &
    Management \\
Champion & champion & `They rate CSFs by a degree of importance during ERP
    implementation as follows: (1) top management support; (2) project team
    competence; (3) inter-departmental cooperation; (4) clear goals and
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    objectives; (5) project management; (6) inter-departmental communication;
    (7) management of expectation; (8) project champion; (9) vendors' support;
    (10) careful package selection; (11) data analysis and conversion; (12)
    dedicated resources; (13) use of steering committee; (14) user training on
    software; (15) education on new business processes; (16) BPR; (17) minimal
    customisation; (18) architecture choices; (19) change management; (20)
    partnership with vendors; (21) use of vendors' tool; and (22) use of
    consultant.' \autocite[674]{AliEtAl2017ERPSystemImplem} & Management \\
Champion & champion & `Important CSFs identified are: ERP team work and
    composition, top management support, business plan and vision, effective
    communication, project management, project champion, appropriate business
    and legacy systems, change management programmes, culture, BPR, minimum
    customisation, software development, testing, trouble shooting, monitoring,
    and evaluation of performance.' \autocite[675]{AliEtAl2017ERPSystemImplem} &
    Management \\
Champion & champion & `Lesser, but still important CSFs are, having a good
    business plan, vision, having a project champion, appropriate business and
    legacy systems, change management programmes, culture, BPR, minimum
    customisation, software development, testing, trouble shooting, monitoring,
    and the evaluation of performance (Markus, Axline, Petrie and Tanis, 2000;
    Bancroft et al., 1998; Bingi et al., 1999; Nah et al., 2001; Umble et al.,
    2003; Ehie and Madsen, 2005; Sarkar and Lee, 2003; Umble et al., 2003; Kim
    et al., 2005; Motwani et al., 2005; Nah and Delgado, 2006; Maguire et al.,
    2010).' \autocite[682]{AliEtAl2017ERPSystemImplem} & Management \\
Champion & champion & `Additional critical success factors are the selection of
    a project champion, who has the power and reputation to promote the
    importance of the project (Sumner, 2000), and cultural change management,
    also because major ERP vendors are located in North America and Western
    Europe, and thus functionalities and processes embody a western-centered
    perspective.' \autocite[658]{BarthEtAl2019CriticSuccesFactor} & Management
    \\
Champion & champion & `Further success factors for ERP implementation projects,
    such as the selection of a project champion, the building of a business case
    or the appropriate management of legacy systems were rated as not very
    significant for upgrade projects by the interviewees.'
    \autocite[668]{BarthEtAl2019CriticSuccesFactor} & Management \\
Champion & champion & `Zhang et al. (2005) described five major parts of project
    management as having a formal implementation plan, a realistic time frame,
    periodic project status meetings, an effective project leader who is also a
    champion and project team members who are stakeholders.'
    \autocite[91]{BasogluEtAl2007OrganiAdoptiEnterp} & Management \\
Champion & champion & `This introduces the importance of support mechanisms that
    include not only technical solutions such as superior hardware and software
    operational features, but also software support that is championed by
    supervisors who behave as role models.'
    \autocite[104]{Chan2013AustraQuantiSurvey} & Management \\
Champion & champion & `Loh and Koh [35] presented a framework of critical
    success factors in small and medium sized enterprises (SMEs), concluding
    that the most important factors are: project champion, project management,
    business plan and vision, and top management support [35].'
    \autocite[1254]{ChatzoglouEtAl2016AnteceOutcomERP} & Management \\
Champion & champion & `This CSF is related to the need for the project
    manager/champion to nurture and maintain a high level of employee morale and
    motivation during the project (Trimmer et al., 2002; Willcocks and Stykes,
    2000; Bingi et al., 1999).' \autocite[337]{FinneyEtAl2007ERPImplemCompil} &
    Management \\
Champion & champion & `Frequency analysis of CSFs in literature CSF category Top
    management commitment and support Change management BPR and software
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    configuration Training and job redesign Project team: the best and brightest
    Implementation strategy and timeframe Consultant selection and relationship
    Visioning and planning Balanced team Project champion Communication plan IT
    infrastructure Managing cultural change Post-implementation evaluation
    Selection of ERP Team morale and motivation Vanilla ERP Project management
    Troubleshooting/crises management Legacy system consideration Data
    conversion and integrity System testing Client consultation Project cost
    planning and management Build a business case Empowered decision makers
    Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7
    7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a
    specific aspect of the implementation process or a specific CSF.'
    \autocite[340]{FinneyEtAl2007ERPImplemCompil} & Management \\
Champion & champion & `Among the more important factors are top management
    support and involvement (Duchessi et al., 1989) the need for a project
    champion (Ehie and Madsen, 2005), user training (Stefanou and Revanoglou,
    2006), technological competence, process delineation, project planning,
    change management and PM (Krumbholz and Maiden, 2001).'
    \autocite[404]{GargEtAl2014CriticSuccesFactor} & Management \\
Champion & champion & `The most important factors are top management support and
    involvement, the need for project champion user training, technological
    competence, process delineation, project planning, change management and PM
    (Umble et al., 2003).' \autocite[404]{GargEtAl2014CriticSuccesFactor} &
    Management \\
Champion & champion & `Project champion is one of the most important success
    factors in the implementation of ERP systems.'
    \autocite[405]{GargEtAl2014CriticSuccesFactor} & Management \\
Champion & champion & `Project champions should own the role of change champion
    for the life of the project and understand the technology as well as the
    business and organizational context (Remus, 2006).'
    \autocite[405]{GargEtAl2014CriticSuccesFactor} & Management \\
Champion & champion & `F4 Presence/Existence of a Champion Somers \& Nelson,
    2001; Willcocks \& Sykes,2000; Browen et al.,2007; Parr \& Shanks.,2000;
    Upadhyay \& Dan,2008; Nah et al.,2001; Nah et al.,2003; Ngai et al.,2008;
    Sumner,1999; Yeoh et al.,2008; Lai,2006; Dawson \& Owens, 2008.'
    \autocite[47]{KhattakEtAl2013InvestCriticSucces} & Management \\
Champion & champion & `P4: It states that presence or existence of a champion in
    implementation of an ERP project leads to successful implementation of ERP
    project which is partially supported because in only four of the enterprises
    (i.e. Cases 2, 3, 4 \& 12) studied in the current research, a champion was
    emerged and/or existed in a significant role while in rest of the cases
    there wasn't any champion and despite that the implementation went
    successful.' \autocite[59]{KhattakEtAl2013InvestCriticSucces} & Management
    \\
Champion & champion & `The unsuccessful cases also had no presence of any
    champion at all.' \autocite[59]{KhattakEtAl2013InvestCriticSucces} &
    Management \\
Champion & champion & `Therefore, this infers that the presence of a champion in
    a significant role may be useful for providing guidance \& motivation on the
    project but it cannot essentially guarantee the ERP project implementation
    success.' \autocite[59]{KhattakEtAl2013InvestCriticSucces} & Management \\
Champion & champion & `We suggested that in Chinese context presence of such a
    champion would be seen as a challenge to the authority and position of the
    top management, but in Pakistani context, the champion is often a
    subordinate.' \autocite[66]{KhattakEtAl2013InvestCriticSucces} & Management
    \\
Champion & champion & `The research concludes that: (1) Quality (adequacy) and
    quantity of training and education of personnel/users, role and
    effectiveness of management in reducing the users' resistance, use of
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    steering committee for control purpose, top management support or
    involvement, clearly specified goals/objectives/scope regarding ERP system,
    ease of system's use and users' acceptance, vendor's support, project
    management, effective communication among the organizational members and a
    balanced team for ERP implementation are practically considered by the
    successful enterprises in China while planning and going for the
    implementation of the ERP system and are thus critical for the success of
    ERP systems implementation projects, ignoring of which may cause
    implementation failure in the Chinese organizations; (2) Some of the factors
    deemed imperative for ERP systems implementation success in the literature
    like; selection of a right full time project manager with extensive
    experience, presence/existence of a champion, integration of business
    planning with IT/ERP planning, use and role of consultant, change management
    strategy and programs, competency in use of IT and IT infrastructure,
    business...' \autocite[68]{KhattakEtAl2013InvestCriticSucces} & Management
    \\
Champion & champion & `According to the literature, the most studied factors
    were: Top Management Support, Effective Communication, Training, and
    Education, Business plan and vision, Project Management, BPR management,
    Change Management, Project team Composition/ Teamwork, Project champion, ERP
    Choices, Technical Implementation, Technological Infrastructure, Legacy
    systems consideration.' \autocite[112]{MahrazEtAl2020CompilAnalysCritic} &
    Management \\
Champion & champion & `The findings of our study reveal that `appropriate
    business and IT legacy systems', `business plan/vision/goals/justification',
    `business process reengineering', `change management culture and programme',
    `communication', `ERP teamwork and composition', `monitoring and evaluation
    of performance', `project champion', `project management', `software/system
    development, testing and troubleshooting', `top management support', `data
    management', `ERP strategy and implementation methodology', `ERP vendor',
    `organizational characteristics', `fit between ERP and business/process',
    `national culture' and `country-related functional requirement' were the
    commonly extracted factors across these 10 countries/regions.'
    \autocite[548]{NgaiEtAl2008ExaminCriticSucces} & Management \\
Champion & champion & `They showed that top management support, project
    champion, ERP teamwork and composition, project management, change
    management programme and culture were the most critical to the successful
    implementation of EPR.' \autocite[549]{NgaiEtAl2008ExaminCriticSucces} &
    Management \\
Champion & champion & `Project champion The presence of a project champion has
    facilitated many successful projects [54].'
    \autocite[555]{NgaiEtAl2008ExaminCriticSucces} & Management \\
Champion & champion & `Project champions are not only important for the
    implementation of many systems such as IS, but also play a critical role in
    the implementation of ERP and in handling organizational change.'
    \autocite[555]{NgaiEtAl2008ExaminCriticSucces} & Management \\
Champion & champion & `The project champion should be a high-level executive
    sponsor who has the power to `champion' the ERP project throughout the
    organization [73].' \autocite[555]{NgaiEtAl2008ExaminCriticSucces} &
    Management \\
Champion & champion & `Project team: consultant, leadership and champion The ERP
    team should consist of the best people in the organization.'
    \autocite[37]{OsmanEtAl2019ERPCriticSucces} & Management \\
Champion & champion & `The factors were top management support, external
    expertise, balanced project team, data accuracy, clear goals, project
    management, change management, education and training, presence of a
    champion, minimal customisation, and using the best people full-time.'
    \autocite[6]{Rabaai2009IdentiCriticSucces} & Management \\
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Champion & champion & `Eleven critical factors were identified, such as ERP
    teamwork and composition, change management program and culture, top
    management support, business plan and vision, business process reengineering
    (BPR) and minimum customisation, effective communications, project
    management, software development, testing and troubleshooting, monitoring
    and evaluating performance, project champion, and appropriate business and
    IT legacy systems.' \autocite[6]{Rabaai2009IdentiCriticSucces} & Management
    \\
Champion & champion & `The top five were top management support, project team
    competence, project champion, inter-departmental cooperation, and clear
    goals and expectations.' \autocite[6]{Rabaai2009IdentiCriticSucces} &
    Management \\
Champion & champion & `Based on the work by Markus and Tanis (2000), Nah and
    Delgado organised these factors into seven main categories: (1) Business
    plan and vision; (2) Change management; (3) Communication; (4) ERP team
    composition, skills, and compensation; (5) Project management; (6) Top
    management support and championship; and (7) System analysis, selection, and
    technical implementation.' \autocite[6]{Rabaai2009IdentiCriticSucces} &
    Management \\
Champion & champion & `QUT believes this approach to engaging consultants allows
    QUT to maintain control, ownership, and championship of the project.'
    \autocite[465]{RabaaiEtAl2009ERPSystemHigher} & Management \\
Champion & champion & `The critical success factors consistently identified in
    the literature include top management support, the presence of a champion,
    good communication with all stakeholders, effective project management,
    reengineering of business processes, an understanding of corporate cultural
    change, and the use of business analysts on the project team.'
    \autocite[88]{RabaaiEtAl2015CulturPerspeon} & Management \\
Champion & champion & `The specific items on business plan, goal and vision; on
    technical aspects; on team composition and skills; on top management
    championing and support; on project communication factors and on change
    management aspects formed the next block of items.'
    \autocite[94]{RabaaiEtAl2015CulturPerspeon} & Management \\
Champion & champion & `The associate director of IT felt it was important for
    QUT to maintain championship and ownership, and to supplement as necessary
    with specialist labour or expertise, and noted QUTs approach differed from
    other universities, some of which have been involved in complex arrangements
    ending in litigation.' \autocite[56]{RabaaiEtAl2016SuccesFactorEnterp} &
    Management \\
Champion & champion & `Item Description 1 top management support 25 application
    project costs 2 effective communication 26 interdepartmental cooperation 3
    interdepartmental communication 27 dedicated resources 4 clear goal and
    objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor
    support 6 change management 30 use of vendor's development tools 7 education
    on new business process 31 organizational characteristics 8 user training\&
    education 32 employee / team morale-motivation 9 user acceptance 33
    leadership of the project team 10 managing cultural change 34 project team
    competence- composition 11 business process reengineering 35 ERP team work
    12 customization 36 steering committee 13 minimal customization 37 empowered
    decision makers 14 software configuration 38 use of consultants 15 data
    accuracy 39 obtain business analysts 16 data analysis- conversion 40 project
    champion 17 software development testing \& troubleshooting 41 appropriate
    business-legacy systems 18 implementation strategies 42 data integration 19
    ERP package selection 43 scope \& vision based performance 20 feasible
    evaluation of ERP project 44 monitoring- evaluation of performance 21 IT
    infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Management \\
Champion & champion & `Related Sub-Factors 1 (11) Business project reengineering
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    (18) Implementation strategies (23) Management of expectations (24) Project
    management (32) Employee / team morale \& motivation (33) Leadership of the
    project team (34) Project team competence and composition 2 (14) Software
    configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing
    vendor support (30) Support of vendor development tools (38) Use of
    consultants 3 (40) Project champion (46) National culture (47) Country
    related functional requirements (48) Centralization 4 (1) Top management
    support (2) Effective communication (3) Interdepartmental communication (4)
    Clear goals and objectives (5) Business plan \& vision 5 (15) Data accuracy
    (16) Data integration (42) Data analysis and conversion 6 (7) Education on
    new business processes (8) User training and education (9) User acceptance
    (10) Managing cultural change this result maybe, end-users resist changing
    business processes instead they prefer customizations in ERP software.'
    \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Management \\
Champion & champion & `Third factor is also being supported by two other sub-
    factors; centralization and project champion.'
    \autocite[68]{SaygiliEtAl2017EndUsersPercep} & Management \\
Champion & champion & `Similarly, project champion can be defined as one of the
    formal rituals and celebrations (Schein, 2004) in which a group celebrates
    key events that reflect important values or important passages by members
    such as completion of important projects and milestones.'
    \autocite[68]{SaygiliEtAl2017EndUsersPercep} & Management \\
Champion & champion & `Have a project champion who performs the crucial
    functions like leadership, facilitation, and marketing the project to the
    users.' \autocite[75]{SaygiliEtAl2017EndUsersPercep} & Management \\
Champion & champion & `Therefore, it is crucial to appoint a senior project
    champion (e.g., CEO) to take on the leadership role of the ERP
    implementation, whose job it is to bring respected and active contributing
    top management promoters into the system selection decision process rather
    than relying on the vendor's or consultant's efforts to overcome
    resistance.' \autocite[19]{ShaulEtAl2013CriticSuccesFactor} & Management \\
Collaboration & collaboration & `Implementation of ERP involves the
    collaboration of technical and business professionals with end users.'
    \autocite[630]{AnjumEtAl2015FactorManipuERP} & Management, Collection,
    Production, Use \\
Collaboration & collaboration & `Additionally, ERP implementation team should
    consist of representatives from all functional units of the organisation,
    from technical experts to senior executives, because the effort and
    collaboration of technical and business experts and the system's end-users
    are essential to the success of ERP implementation (e.g.'
    \autocite[9]{Rabaai2009IdentiCriticSucces} & Management, Collection,
    Production, Use \\
Collaboration & collaboration & `Additionally, ERP implementation team should
    consist of representatives from all functional units of the organisation,
    from technical experts to senior executives, because the effort and
    collaboration of technical and business experts and the system's end-users
    are essential to the success of ERP implementation (e.g.'
    \autocite[54]{RabaaiEtAl2016SuccesFactorEnterp} & Management, Collection,
    Production, Use \\
Communication & communication & `The authors find that top management support,
    good project management teams, and good communications are the top three
    most important critical successful factors during implementation.'
    \autocite[666]{AliEtAl2017ERPSystemImplem} & Management, Collection,
    Production, Use \\
Communication & communication & `CSFs for successful ERP implementation are
    identified as top management support, presence of a champion, good
    communication with stakeholders, effective project planning, business
    process re-engineering (BPR), and using a business analyst on the project
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    team (Bancroft et al., 1998; Bingi et al., 1999).'
    \autocite[674]{AliEtAl2017ERPSystemImplem} & Management, Collection,
    Production, Use \\
Communication & communication & `They rate CSFs by a degree of importance during
    ERP implementation as follows: (1) top management support; (2) project team
    competence; (3) inter-departmental cooperation; (4) clear goals and
    objectives; (5) project management; (6) inter-departmental communication;
    (7) management of expectation; (8) project champion; (9) vendors' support;
    (10) careful package selection; (11) data analysis and conversion; (12)
    dedicated resources; (13) use of steering committee; (14) user training on
    software; (15) education on new business processes; (16) BPR; (17) minimal
    customisation; (18) architecture choices; (19) change management; (20)
    partnership with vendors; (21) use of vendors' tool; and (22) use of
    consultant.' \autocite[674]{AliEtAl2017ERPSystemImplem} & Management,
    Collection, Production, Use \\
Communication & communication & `Important CSFs identified are: ERP team work
    and composition, top management support, business plan and vision, effective
    communication, project management, project champion, appropriate business
    and legacy systems, change management programmes, culture, BPR, minimum
    customisation, software development, testing, trouble shooting, monitoring,
    and evaluation of performance.' \autocite[675]{AliEtAl2017ERPSystemImplem} &
    Management, Collection, Production, Use \\
Communication & communication & `The factors in the order of ERP system
    importance are: implementation in LEs ● lack of top management commitment; ●
    ineffective communication; ● insufficient training; ● lack of user support;
    ● poor project management; ● relying on legacy systems; ● inter-departmental
    conflicts; ● composition of project team; ● failure in redesigning business
    processes; and ● lack of clarity about required changes.'
    \autocite[681]{AliEtAl2017ERPSystemImplem} & Management, Collection,
    Production, Use \\
Communication & communication & `The top three most important CSFs to be
    considered at particular stages of the implementation process are top
    management support, good project teams, and good communications.'
    \autocite[682]{AliEtAl2017ERPSystemImplem} & Management, Collection,
    Production, Use \\
Communication & communication & `The most common causes of ERP implementation
    failures are a combination of poor planning and high software customisation
    (Scheer and Habbermann, 2000), lack of top management commitment;
    ineffective communication; insufficient training; lack of user support, poor
    project management, relying on legacy systems, inter-departmental conflicts,
    poor composition of project teams, failure in redesigning business processes
    and, lack of clarity about required changes.'
    \autocite[682]{AliEtAl2017ERPSystemImplem} & Management, Collection,
    Production, Use \\
Communication & communication & `The study founds a significant association of
    technological, strategic, project management, people, top management support
    and communication factor with ERP implementation.'
    \autocite[628]{AnjumEtAl2015FactorManipuERP} & Management, Collection,
    Production, Use \\
Communication & communication & `Two researchers conducted a research study on
    the success issues of ERP which identified ten successive issues through
    investigate ten selective articles which are: effective decision making,
    Business Plan and vision, project management, effective communication,
    testing and troubleshooting, appropriate business and legacy system, ERP
    teamwork and composition, top management support and software development
    (Nah and Lau, 2001).' \autocite[628]{AnjumEtAl2015FactorManipuERP} &
    Management, Collection, Production, Use \\
Communication & communication & `Woo (2007) conducted a study through
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    interviewing professionals concerned with the execution of ERP foremost
    Chinese ventures, the researchers acknowledged six vital success issues that
    contain: project team, process management, training and effective
    communication, commitment form top management, proper project management and
    proper education and training (Woo, 2007).'
    \autocite[629]{AnjumEtAl2015FactorManipuERP} & Management, Collection,
    Production, Use \\
Communication & communication & `Efficient enterprise communication is
    significantly to ERP implementation (Falkowski et al., 1998).'
    \autocite[630]{AnjumEtAl2015FactorManipuERP} & Management, Collection,
    Production, Use \\
Communication & communication & `Muscatello and Chen (2008) stated that
    appropriate communication strategies should be set up to keep senior
    management knowledgeable on the matter of ERP project impact, risks,
    progress and challenges.' \autocite[630]{AnjumEtAl2015FactorManipuERP} &
    Management, Collection, Production, Use \\
Communication & communication & `The research study of Nah and Delgado (2006)
    suggests that early, continues and consistent communication, including an
    overview of the ERPS and visualization on how the business will modify have
    significant implications for the successful ERPS implementation project.'
    \autocite[631]{AnjumEtAl2015FactorManipuERP} & Management, Collection,
    Production, Use \\
Communication & communication & `Somers and Nelson (2004) stated that one of
    such benefits of communication among the stakeholders of various functions
    is that, it assists ERPS adopting firm to reduce users' resistance which is
    very important in initiating such project (Esteves-Sousa and PastorCollado,
    2000).' \autocite[631]{AnjumEtAl2015FactorManipuERP} & Management,
    Collection, Production, Use \\
Communication & communication & `Communication should include both internal and
    external.' \autocite[631]{AnjumEtAl2015FactorManipuERP} & Management,
    Collection, Production, Use \\
Communication & communication & `Internal communication includes communication
    among ERPS project member, whereas external communication includes the
    entire organization.' \autocite[631]{AnjumEtAl2015FactorManipuERP} &
    Management, Collection, Production, Use \\
Communication & communication & `For better communication, communication plan
    among the member is critical since communication plan warrants that open
    communication is happening in the entire organization and also with the
    suppliers and customers (Kumar et al., 2003).'
    \autocite[631]{AnjumEtAl2015FactorManipuERP} & Management, Collection,
    Production, Use \\
Communication & communication & `The study of EstevesSousa and Pastor-Collado
    (2000) acknowledged that not only internal communication between ERPS
    project team individuals, but also external communication among the whole
    corporation are tremendously essential.'
    \autocite[631]{AnjumEtAl2015FactorManipuERP} & Management, Collection,
    Production, Use \\
Communication & communication & `Another requisite factor for successful ERPS is
    organization-wide communication among employees.'
    \autocite[631]{AnjumEtAl2015FactorManipuERP} & Management, Collection,
    Production, Use \\
Communication & communication & `Such organization-wide communication transverse
    meant to support the various stages of ERPS implementation.'
    \autocite[631]{AnjumEtAl2015FactorManipuERP} & Management, Collection,
    Production, Use \\
Communication & communication & `Communication is one of difficult and most
    challenging steps in the ERPS execution project.'
    \autocite[631]{AnjumEtAl2015FactorManipuERP} & Management, Collection,
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    Production, Use \\
Communication & communication & `The communication must be carried out through
    ERPS navigation board meetings plus standard position exposure.'
    \autocite[632]{AnjumEtAl2015FactorManipuERP} & Management, Collection,
    Production, Use \\
Communication & communication & `Holland and Light (1999) recommended that
    utilizing communication apparatus, for example information sheet, monthly
    press release otherwise weekly meetings in order to maintain users' well-
    versed regarding ERPS execution project advancement.'
    \autocite[632]{AnjumEtAl2015FactorManipuERP} & Management, Collection,
    Production, Use \\
Communication & communication & `Furthermore, top management commitment and
    communication, both have positive and constructive connection with the
    implementation of ERP systems.' \autocite[632]{AnjumEtAl2015FactorManipuERP}
    & Management, Collection, Production, Use \\
Communication & communication & `Studies have empirical evidence that
    technological, strategic, project management, people, top management support
    and communication positively affect the success of implementing ERP.'
    \autocite[633]{AnjumEtAl2015FactorManipuERP} & Management, Collection,
    Production, Use \\
Communication & communication & `In order to succeed, a culture with common
    goals, shared values and a strong corporate identity open to change, is
    essential (Nah, Lau and Kuang, 2001), as well as communication of the
    benefits and the need for an ERP system (Finney and Corbett, 2007).'
    \autocite[658]{BarthEtAl2019CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Communication & communication & `Additionally, good communication of the
    project's progress to the rest of the organization is an easy way to promote
    and advertise the project and project team (Holland and Light, 1999).'
    \autocite[659]{BarthEtAl2019CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Communication & communication & `Nah, Faja and Cata (2001) add communication
    with external partners and user support as key points based on an empirical
    study.' \autocite[659]{BarthEtAl2019CriticSuccesFactor} & Management,
    Collection, Production, Use \\
Communication & communication & `(6) Communication: one major objective has to
    be the introduction of a communication culture, which enables effective
    coordination between various departments and their interests.'
    \autocite[666]{BarthEtAl2019CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Communication & communication & `Additionally, there is the need for
    professional communication within the project.'
    \autocite[666]{BarthEtAl2019CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Communication & communication & `Even though team members have different
    opinions on a topic, communication and discussion must take place on a
    professional level and personal differences must be left behind (I).'
    \autocite[666]{BarthEtAl2019CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Communication & communication & `Furthermore, communication with end users is
    important, as they can offer crucial process knowledge and indicate
    potential problems from their point of view (L).'
    \autocite[666]{BarthEtAl2019CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Communication & communication & `Another important factor within the
    communication with end users is the management of expectations.'
    \autocite[666]{BarthEtAl2019CriticSuccesFactor} & Management, Collection,
    Production, Use \\
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Communication & communication & `Furthermore, also reporting is a part of
    communication, which should be based on a detailed plan (I).'
    \autocite[666]{BarthEtAl2019CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Communication & communication & `Many factors, such as project management, team
    composition, communication, system testing and external support, are crucial
    for ERP implementation projects as well as for upgrade projects.'
    \autocite[670]{BarthEtAl2019CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Communication & communication & `In another study, Gyampah and Salam (2004)
    claimed that training, shared communication and shared beliefs in the
    benefits of the ERP system has a direct effect on users' perception about
    ERP system.' \autocite[83]{BasogluEtAl2007OrganiAdoptiEnterp} & Management,
    Collection, Production, Use \\
Communication & communication & `The results of their study proved that training
    and project communication affect user perceptions through the shared belief
    in the benefits of ERP system.'
    \autocite[83]{BasogluEtAl2007OrganiAdoptiEnterp} & Management, Collection,
    Production, Use \\
Communication & communication & `Additionally, critical success factors of ERP
    projects like customization, BPR, top management support, training and
    communication were grouped under these three actors and also project
    management for testing their effect on organizational adoption, too.'
    \autocite[89]{BasogluEtAl2007OrganiAdoptiEnterp} & Management, Collection,
    Production, Use \\
Communication & communication & `Obviously, having such users is not enough,
    because they should be provided with support like training, information
    sharing, and effective communication and help desk activities.'
    \autocite[91]{BasogluEtAl2007OrganiAdoptiEnterp} & Management, Collection,
    Production, Use \\
Communication & communication & `Unless training, information sharing, effective
    communication and help desk activities are provided, people cannot have a
    better understanding of how their jobs are related to other functional areas
    within the company and also they cannot know to operate the new system.'
    \autocite[91]{BasogluEtAl2007OrganiAdoptiEnterp} & Management, Collection,
    Production, Use \\
Communication & communication & `It was found out from the literature that
    Gyampah and Salam (2004) and Kerimoglu and Basoglu (2005) defined project
    management's communication facilities' as a subordinate determinant of use.'
    \autocite[92]{BasogluEtAl2007OrganiAdoptiEnterp} & Management, Collection,
    Production, Use \\
Communication & communication & `Lack of management support, poor organizational
    culture, communication problems, financial management problems, lack of
    clarity on scope, project management problems, poor project team, ERP
    software misfit, poor solution implementer performance, poor quality of
    testing, outdated it infrastructure, lack of training, highly customized
    ERP, poor process design, lack of user involvement, resistance to change,
    unrealistic expectations are the main failure factors that need to be
    analyzed in detail.' \autocite[3]{CoşkunEtAl2022ERPFailurSystem} &
    Management, Collection, Production, Use \\
Communication & communication & `For example, Tsai [44] defines it as ``Reach''
    for the project team to interact with end users to understand the
    requirements, while Malaurent [45] defines it as ``communication matters''.'
    \autocite[10]{CoşkunEtAl2022ERPFailurSystem} & Management, Collection,
    Production, Use \\
Communication & communication & `For example, according to Sahran [46], ``Lack
    of internal communication'' is seen as a subset of ``Change Management''.'
    \autocite[10]{CoşkunEtAl2022ERPFailurSystem} & Management, Collection,
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    Production, Use \\
Communication & communication & `It should not be confused that many factors
    such as ``budget'', ``communication'', and ``project team'' are not examined
    in the ``Project Management Problems'' category since they are examined in
    separate categories because many articles analyzed in this study show that
    project management is handled as project coordination.'
    \autocite[13]{CoşkunEtAl2022ERPFailurSystem} & Management, Collection,
    Production, Use \\
Communication & communication & `As expected, education, organizational culture,
    and communication problems come to the fore in large-scale companies, while
    financial problems come to the fore in small-scale companies.'
    \autocite[16]{CoşkunEtAl2022ERPFailurSystem} & Management, Collection,
    Production, Use \\
Communication & communication & `ERP projects fail as communication becomes
    inefficient.' \autocite[16]{CoşkunEtAl2022ERPFailurSystem} & Management,
    Collection, Production, Use \\
Communication & communication & `For example, resistance to change and financial
    problems may be encountered more commonly in small-scale organizations,
    whereas communication is more critical in large-scale companies.'
    \autocite[19]{CoşkunEtAl2022ERPFailurSystem} & Management, Collection,
    Production, Use \\
Communication & communication & `Communication among various functions/levels
    (Mandal and Gunasekaran, 2003) and specifically between business and IT
    personnel (Grant, 2003) is another identified CSF.'
    \autocite[337]{FinneyEtAl2007ERPImplemCompil} & Management, Collection,
    Production, Use \\
Communication & communication & `This requires a communication plan (Kumar et
    al., 2002) to ensure that open communication occurs within the entire
    organization, including the shop-floor employees (Yusuf et al., 2004), as
    well as with suppliers and customers (Mabert et al., 2003).'
    \autocite[337]{FinneyEtAl2007ERPImplemCompil} & Management, Collection,
    Production, Use \\
Communication & communication & `Al-Mashari et al. (2003) and Al Mudimigh et al.
    (2001) mention the need for communication and consultation with various key
    stakeholders, but in particular with the client.'
    \autocite[338]{FinneyEtAl2007ERPImplemCompil} & Management, Collection,
    Production, Use \\
Communication & communication & `Frequency analysis of CSFs in literature CSF
    category Top management commitment and support Change management BPR and
    software configuration Training and job redesign Project team: the best and
    brightest Implementation strategy and timeframe Consultant selection and
    relationship Visioning and planning Balanced team Project champion
    Communication plan IT infrastructure Managing cultural change Post-
    implementation evaluation Selection of ERP Team morale and motivation
    Vanilla ERP Project management Troubleshooting/crises management Legacy
    system consideration Data conversion and integrity System testing Client
    consultation Project cost planning and management Build a business case
    Empowered decision makers Number of instances cited in literature 25 25 23
    23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very
    often focused on only a specific aspect of the implementation process or a
    specific CSF.' \autocite[340]{FinneyEtAl2007ERPImplemCompil} & Management \\
Communication & communication & `Some of their ideas include: support and
    training, increased communication, user guidelines, demonstration of
    benefits.' \autocite[342]{FinneyEtAl2007ERPImplemCompil} & Management,
    Collection, Production, Use \\
Communication & communication & `These factors include, but not limited to, poor
    consultant effectiveness, ERP software misfit, unrealistic expectations from
    top management concerning the ERP systems, over-reliance on heavy
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    customization, poor quality of Business Process Reengineering (BPR), high
    turnover rate of project team members, poor IT Infrastructure, functionality
    problems with the system, unclear concept of the nature and use of the ERP
    system from the users perspective, too tight project schedule, lack of
    formal communication, part-time dedication, etc.'
    \autocite[498]{GargEtAl2013EmpiriStudyon} & Management, Collection,
    Production, Use \\
Communication & communication & `Consultants who are not able to demonstrate a
    mastery of professional communication skills, good language capability,
    industrial knowledge, and business analytical skills, are not able to
    provide expertise concerning project planning, ERP systems and BPR during
    ERP implementation and hence cannot act as change agents and fill the
    knowledge gaps (Ngai et al., 2008; Stebel, 1992; Ganesh and Mehta, 2010; Nah
    and Lau, 2001) (for example, communicating with project team members and
    users for acquiring business requirements, conducting BPR and delivering
    professional training).' \autocite[499]{GargEtAl2013EmpiriStudyon} &
    Management, Collection, Production, Use \\
Communication & communication & `A formal management process is also needed to
    track and monitor the vendor/consultant's activities and communications.'
    \autocite[416]{GargEtAl2014CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Communication & communication & `Effective enterprise communication is critical
    to ERP implementation (Falkowski et al., 1998).'
    \autocite[432]{GargEtAl2014FactorInflueERP} & Management, Collection,
    Production, Use \\
Communication & communication & `Management of communication, education and
    expectations are critical throughout the organization (Wee, 2000).'
    \autocite[434]{GargEtAl2014FactorInflueERP} & Management, Collection,
    Production, Use \\
Communication & communication & `Communication includes the formal promotion of
    project teams and the advertisement of project progress to the rest of the
    organization (Holland et al., 1999).'
    \autocite[434]{GargEtAl2014FactorInflueERP} & Management, Collection,
    Production, Use \\
Communication & communication & `Enterprise wide effective communication is one
    of the most influential items for ERP implementation success.'
    \autocite[439]{GargEtAl2014FactorInflueERP} & Management, Collection,
    Production, Use \\
Communication & communication & `So it is recommended for mangers of retail
    organization to have a strong and effective communication throughout the
    various stages of the ERP implementation.'
    \autocite[439]{GargEtAl2014FactorInflueERP} & Management, Collection,
    Production, Use \\
Communication & communication & `Open and honest communication across the
    organization is of paramount importance to satisfy the information needs of
    users, and to prevent the circulation of unfounded rumors.'
    \autocite[439]{GargEtAl2014FactorInflueERP} & Management, Collection,
    Production, Use \\
Communication & communication & `The success of ERP implementation depends on
    effective project communication.'
    \autocite[441]{GargEtAl2014FactorInflueERP} & Management, Collection,
    Production, Use \\
Communication & communication & `It is recommended that communication within the
    project team should be done in timely and effectively manner so that there
    should not be any communication gap within the project team.'
    \autocite[441]{GargEtAl2014FactorInflueERP} & Production \\
Communication & communication & `Effective Enterprise communication is critical
    to ERP implementation (Falkowski et al., 1998).'
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    \autocite[1318]{GargEtAl2015FactorAffectERP} & Management, Collection,
    Production, Use \\
Communication & communication & `Muscatello and Chen (2008) argued that suitable
    communication plans should be set ERP up to keep senior management informed
    on the subject of ERP project impact, implementation challenges, risks and
    progress.' \autocite[1319]{GargEtAl2015FactorAffectERP} & Management \\
Communication & communication & `Management of communication, education and
    expectations are critical throughout the organization (Wee, 2000).'
    \autocite[1320]{GargEtAl2015FactorAffectERP} & Management, Collection,
    Production, Use \\
Communication & communication & `(1) The ``Organizational'' factor in this study
    is defined by business plan and vision, top management support, business
    process reengineering, ERP product selection, selection of implementation
    partner/consultants and enterprise wide communication plan items which may
    affect the success of ERP implementation in Indian retail sector.'
    \autocite[1327]{GargEtAl2015FactorAffectERP} & Management, Collection,
    Production, Use \\
Communication & communication & `(4) The Project Management factor in this study
    is defined by team composition, project team competence, scope management,
    expectation management, communication within project team and budget control
    items which may affect the success of ERP implementation in Indian retail
    sector.' \autocite[1332]{GargEtAl2015FactorAffectERP} & Management,
    Collection, Production, Use \\
Communication & communication & `The success of ERP implementation depends on
    effective project communication.'
    \autocite[1333]{GargEtAl2015FactorAffectERP} & Management, Collection,
    Production, Use \\
Communication & communication & `Drawing from the literature, we found security,
    project management, and communication are the top three widely cited CSFs
    during implementation.' \autocite[4683]{HuangEtAl2021CriticSuccesFactor} &
    Management, Collection, Production, Use \\
Communication & communication & `The most widely cited CSFs were found to be:
    security, project management, communication, compliance, network and the
    reaction of organization.' \autocite[4685]{HuangEtAl2021CriticSuccesFactor}
    & Management, Collection, Production, Use \\
Communication & communication & `Communication represents the third most widely
    cited CSF that is vital to successful implementation [15, 19, 22, 23, 25].'
    \autocite[4685]{HuangEtAl2021CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Communication & communication & `Effective communication can enrich employees'
    knowledge and can help employees learn from each other.'
    \autocite[4685]{HuangEtAl2021CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Communication & communication & `Transparent and precise communication is
    required to reduce ambiguity in the understanding of employees during the
    implementation [23].' \autocite[4685]{HuangEtAl2021CriticSuccesFactor} &
    Management, Collection, Production, Use \\
Communication & communication & `Extrinsic(3) Organizational CSFs (15) People
    CSFs (12) Technological CSFs (5) ● Communication within the company ●
    Organization resistance ● Project budget ● Project management ●
    Implementation strategy ● Strategic goals and objectives ● Business process
    reengineering ● organizational culture ● knowledge base of the company ●
    Project planning and control ● Facilitating conditions ● Organization size ●
    The vision of the organization ● Readiness of organizations ● Clarity of
    potential cost ● User involvement ● Selection of vendor/consult ant ●
    Project team ● Top management support ● Training of user ● Trust on vendor ●
    Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender
    ● Highest degree attained ● Selection of ERP package ● IT infrastructure ●
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    Data integrity and system testing.'
    \autocite[4686]{HuangEtAl2021CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Communication & communication & `Discussion From the systematic literature
    review conducted into Cloud ERP implementation, we found that the top five
    most widely cited CSFs for the successful implementation of Cloud ERP are:
    security, project management, communication, compliance, and network.'
    \autocite[4689]{HuangEtAl2021CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Communication & communication & `CSFs, such as communication, project
    management, strategic goals and objectives and top management support are
    important for both forms of ERP (i.e., on-premise, cloud-based).'
    \autocite[4689]{HuangEtAl2021CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Communication & communication & `F18 Effective communication Esteves et al.,
    2003; Woo, 2007; Almahdi et al., 2008; Nah et al., 2003; Jafari et al.,
    2006; Bancroft et al., 1998; Amoako \& Salam, 2004; Hanafizadeh et al.,
    2010; Lai,2006; Muscatello \& Chen, 2008; Dawson \& Owens, 2008.'
    \autocite[48]{KhattakEtAl2013InvestCriticSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `The results of the survey revealed that level
    of communication in the enterprises, where the implementation went
    successful, was medium on average in a sense that the system users and other
    concerned managers/employees were not involved in the selection/adoption of
    the ERP system prior going for the ERP implementation, while in others
    because the system users as well as concerned managers were got involved in
    the same therefore, the communication level was observed as high over
    there.' \autocite[63]{KhattakEtAl2013InvestCriticSucces} & Management,
    Collection, Production, Use \\
Communication & communication & `However, the level of communication was low in
    case of unsuccessful firms and closed coordination among the management and
    employees for effective execution of various activities and operations was
    not used to be encouraged.' \autocite[63]{KhattakEtAl2013InvestCriticSucces}
    & Management, Collection, Production, Use \\
Communication & communication & `This shows that an effective and clear
    communication among the organizational members is necessary for ERP project
    implementation success.' \autocite[63]{KhattakEtAl2013InvestCriticSucces} &
    Management, Collection, Production, Use \\
Communication & communication & `We contend that the mechanism of communication
    should be such that the information should be shared easily, promptly,
    correctly and on time among the employees as well as among the business
    units.' \autocite[65]{KhattakEtAl2013InvestCriticSucces} & Management,
    Collection, Production, Use \\
Communication & communication & `The information sharing through effective
    communication should start at early stage in the ERP implementation project
    and the reasons for its implementation may be in consistency with the
    overall organization goals and objectives.'
    \autocite[65]{KhattakEtAl2013InvestCriticSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `The research concludes that: (1) Quality
    (adequacy) and quantity of training and education of personnel/users, role
    and effectiveness of management in reducing the users' resistance, use of
    steering committee for control purpose, top management support or
    involvement, clearly specified goals/objectives/scope regarding ERP system,
    ease of system's use and users' acceptance, vendor's support, project
    management, effective communication among the organizational members and a
    balanced team for ERP implementation are practically considered by the
    successful enterprises in China while planning and going for the
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    implementation of the ERP system and are thus critical for the success of
    ERP systems implementation projects, ignoring of which may cause
    implementation failure in the Chinese organizations; (2) Some of the factors
    deemed imperative for ERP systems implementation success in the literature
    like; selection of a right full time project manager with extensive
    experience, presence/existence of a champion, integration of business
    planning with IT/ERP planning, use and role of consultant, change management
    strategy and programs, competency in use of IT and IT infrastructure,
    business...' \autocite[68]{KhattakEtAl2013InvestCriticSucces} & Management,
    Collection, Production, Use \\
Communication & communication & `According to the literature, the most studied
    factors were: Top Management Support, Effective Communication, Training, and
    Education, Business plan and vision, Project Management, BPR management,
    Change Management, Project team Composition/ Teamwork, Project champion, ERP
    Choices, Technical Implementation, Technological Infrastructure, Legacy
    systems consideration.' \autocite[112]{MahrazEtAl2020CompilAnalysCritic} &
    Management, Collection, Production, Use \\
Communication & communication & `The principal function of the top management is
    the establishment of clear objectives and goals for the ERP project, which
    allows to move all parties in the same direction; Effective communication:
    The effective communication in the organization must occur between the
    various functions and levels of the organization, between the institution's
    departments, and specifically between the business staff and the IT staff.'
    \autocite[112]{MahrazEtAl2020CompilAnalysCritic} & Management, Collection,
    Production, Use \\
Communication & communication & `In the ERP system, implementation (Campos
    Fernandes Leandro et al., 2017; Nah et al.,2001; Ngai et al., 2008)
    considers communication to be a critical success factor.'
    \autocite[112]{MahrazEtAl2020CompilAnalysCritic} & Management, Collection,
    Production, Use \\
Communication & communication & `It includes communication of expectations at
    all company levels, formal presentations by the project teams and the
    announcement of the project results within the company and announcement of
    the project scope, objectives and activities before the project onset (Doom
    et al., 2010); Training and Education: Training and Education are considered
    actually as one of the preconditions of building a successful ERP system.'
    \autocite[112]{MahrazEtAl2020CompilAnalysCritic} & Management, Collection,
    Production, Use \\
Communication & communication & `Culture, Communication, and Change Management
    The deployment of the ERP system is often seen as a purely technical
    project, and the organizational and human aspects are sometimes neglected.'
    \autocite[119]{MahrazEtAl2020CompilAnalysCritic} & Management, Collection,
    Production, Use \\
Communication & communication & `The findings of our study reveal that
    `appropriate business and IT legacy systems', `business
    plan/vision/goals/justification', `business process reengineering', `change
    management culture and programme', `communication', `ERP teamwork and
    composition', `monitoring and evaluation of performance', `project
    champion', `project management', `software/system development, testing and
    troubleshooting', `top management support', `data management', `ERP strategy
    and implementation methodology', `ERP vendor', `organizational
    characteristics', `fit between ERP and business/process', `national culture'
    and `country-related functional requirement' were the commonly extracted
    factors across these 10 countries/regions.'
    \autocite[548]{NgaiEtAl2008ExaminCriticSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `Communication Clear and effective communication
    at all levels of an organization is necessary before and during the
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    implementation of ERP [8,51].'
    \autocite[551]{NgaiEtAl2008ExaminCriticSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `Communication includes the formal promotion of
    ERP project teams and advertisements on the project's progress to the rest
    of the organization [28].' \autocite[551]{NgaiEtAl2008ExaminCriticSucces} &
    Management, Collection, Production, Use \\
Communication & communication & `Amoako-Gyampah and Salam [7] found that
    effective communication is one of the success factors that influence the
    acceptance of technology in an ERP implementation environment.'
    \autocite[551]{NgaiEtAl2008ExaminCriticSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `Problems in companies under study include poor
    communication, lack of support from department heads, poor training services
    from vendor, and low user involvement.'
    \autocite[559]{NgaiEtAl2008ExaminCriticSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `Other problems reported are lack of BPR [87],
    poor communications, lack of support from management, limited level of user
    involvement, poor training from vendors [90], and weakness in existing IT
    infrastructure [41].' \autocite[559]{NgaiEtAl2008ExaminCriticSucces} &
    Management, Collection, Production, Use \\
Communication & communication & `The organizational-related factors refer to a
    set of factors fundamental and commonly known to most ERP-adopting
    organizations such as `business process reengineering', `inter-departmental
    communication' and `top management support'.'
    \autocite[560]{NgaiEtAl2008ExaminCriticSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `Communication Failing to achieve a fluent and
    open communication between top management and the system user is a major
    cause of ERP implementation failure [37].'
    \autocite[39]{OsmanEtAl2019ERPCriticSucces} & Management, Collection, Use \\
Communication & communication & `Indeed, cross functional and interdepartmental
    coordination is of utmost importance when implementing an ERP system and
    having excellent company-wide communication is vital [30].'
    \autocite[39]{OsmanEtAl2019ERPCriticSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `Continuous communication with the whole company
    will let the system users know what is happening, what results are to be
    expected and if something goes awry, they are directly informed and involved
    in solving the problem instead of left behind in confusion [38].'
    \autocite[39]{OsmanEtAl2019ERPCriticSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `Mahrer (1999) investigated the antecedents and
    impact of a successful ERP system implementation in a Swiss university, and
    concludes that strong communication and coherence between the departments in
    the university was the main success factor.'
    \autocite[3]{Rabaai2009IdentiCriticSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `Eleven critical factors were identified, such
    as ERP teamwork and composition, change management program and culture, top
    management support, business plan and vision, business process reengineering
    (BPR) and minimum customisation, effective communications, project
    management, software development, testing and troubleshooting, monitoring
    and evaluating performance, project champion, and appropriate business and
    IT legacy systems.' \autocite[6]{Rabaai2009IdentiCriticSucces} & Management,
    Collection, Production, Use \\
Communication & communication & `The factors identified were management and
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    leadership, visioning and planning, ERP package selection, communication
    process management, training and education, project management, legacy
    systems management, system integration, system testing, cultural and
    structural changes, and performance evaluation and management.'
    \autocite[6]{Rabaai2009IdentiCriticSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `Based on the work by Markus and Tanis (2000),
    Nah and Delgado organised these factors into seven main categories: (1)
    Business plan and vision; (2) Change management; (3) Communication; (4) ERP
    team composition, skills, and compensation; (5) Project management; (6) Top
    management support and championship; and (7) System analysis, selection, and
    technical implementation.' \autocite[6]{Rabaai2009IdentiCriticSucces} &
    Management, Collection, Production, Use \\
Communication & communication & `4.9 Communication Plan Project communication is
    considered as an essential CSF for ERP implementations.'
    \autocite[10]{Rabaai2009IdentiCriticSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `While some researchers argued the need for
    communication among various functions/levels (Mandal and Gunasekaran, 2003),
    other specifically argued the necessity of communication between business
    and IT personnel (Grant, 2003).' \autocite[10]{Rabaai2009IdentiCriticSucces}
    & Management, Collection, Production, Use \\
Communication & communication & `Sumner (1999) debated that the communication
    plan should not just exist between senior management and project team
    members.' \autocite[10]{Rabaai2009IdentiCriticSucces} & Management,
    Collection, Production, Use \\
Communication & communication & `The whole organisation should be aware of the
    project scope, its objectives and activities as an effective communication
    plan will have a direct impact on the success of the change management
    program (Mendel, 1999).' \autocite[10]{Rabaai2009IdentiCriticSucces} &
    Management, Collection, Production, Use \\
Communication & communication & `Communication should take place during regular
    update meetings, the distribution of project newsletters or the placement of
    wall charts in conspicuous locations (Sumner, 1999).'
    \autocite[10]{Rabaai2009IdentiCriticSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `Further, Mendel (1999) stated that strong
    communication throughout the various stages of the implementation process is
    essential in allowing employees to understand what is going on in the
    project, why change is necessary, and how it will benefit the organisation.'
    \autocite[10]{Rabaai2009IdentiCriticSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `In addition, an effective communication plan
    will lead to the development of trust and the exchange of information needed
    for process changes and the acceptance of the new technology (Amoako-
    Gyampah, 2004) Organisation's stakeholders must be informed of the project
    goals and the expected benefits of the ERP project as well as its
    capabilities and the limitations of the ERP system (Holland et al. 1999; Al-
    Mashari et al. 2003; Nah and Delgado, 2006).'
    \autocite[10]{Rabaai2009IdentiCriticSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `For instance, Al-Mashari and Al-Mudimigh (2003)
    argued that the importance of an effective communication plan relies on the
    fact that it could build the ability of the entire organisation in business
    process reengineering, and gain all stakeholders' support and commitment.'
    \autocite[10]{Rabaai2009IdentiCriticSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `Al-Mashari and Al-Mudimigh provided a number of
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    different communication methods to keep all stakeholders informed of new
    developments and answering questions about the project implementation by way
    of newsletters, focus groups, email and Web-based archives.'
    \autocite[10]{Rabaai2009IdentiCriticSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `Other critical factors include visioning and
    planning, consultant selection and relationship, effective communication
    plan, ERP system selection, ERP systems integration, and post-implementation
    evaluation measures.' \autocite[11]{Rabaai2009IdentiCriticSucces} &
    Management, Collection, Production, Use \\
Communication & communication & `Brief Review of the Current Status of Studies
    on ERP in the HE Sector Mahrer (1999) investigated the antecedents and
    impact of a successful ERP system implementation in a Swiss university, and
    concludes that strong communication and coherence between the departments in
    the university was the main success factor.'
    \autocite[458]{RabaaiEtAl2009ERPSystemHigher} & Management, Collection,
    Production, Use \\
Communication & communication & `The critical success factors consistently
    identified in the literature include top management support, the presence of
    a champion, good communication with all stakeholders, effective project
    management, reengineering of business processes, an understanding of
    corporate cultural change, and the use of business analysts on the project
    team.' \autocite[88]{RabaaiEtAl2015CulturPerspeon} & Management, Collection,
    Production, Use \\
Communication & communication & `Organisational factors traditionally found to
    affect implementation success, including management support, project
    communication, change management and team composition do not differentiate
    the public from the private sector, at least in the case of Jordan.'
    \autocite[97]{RabaaiEtAl2015CulturPerspeon} & Management, Collection,
    Production, Use \\
Communication & communication & `Elsewhere, Mahrer (1999) investigated the
    antecedents and impact of a successful ERP system implementation in a Swiss
    university, and concluded that strong communication and coherence between
    the departments in the university was the main success factor.'
    \autocite[48]{RabaaiEtAl2016SuccesFactorEnterp} & Management, Collection,
    Production, Use \\
Communication & communication & `It is notable that a similar university, RMIT
    in Melbourne, had a spectacular failure with implementation of its
    Peoplesoft student administration, This is partly attributable to student
    admin functionality not being mature ``like finance and HR'', but a second
    reason for this failure, diagnosed in a Gartner report, was a lack of
    communication between team members and a failure to adequately consider
    business processes before implementation.'
    \autocite[56]{RabaaiEtAl2016SuccesFactorEnterp} & Management, Collection,
    Production, Use \\
Communication & communication & `Training resources and activities are also
    organised through a dedicated communications team which forms part of the
    Division for Technology, Information and Learning Support which provides
    central IT services and support.'
    \autocite[56]{RabaaiEtAl2016SuccesFactorEnterp} & Management, Collection,
    Production, Use \\
Communication & communication & `Communication is understood within the IT
    services team and its project managers, with explicit communication plans
    implemented and reported against projects.'
    \autocite[56]{RabaaiEtAl2016SuccesFactorEnterp} & Management, Collection,
    Production, Use \\
Communication & communication & `Sampling these reports shows that most projects
    consider the effectiveness of their communications with stakeholders both
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    for business requirements gathering and appropriate scheduling of status
    communications.' \autocite[56]{RabaaiEtAl2016SuccesFactorEnterp} &
    Management, Collection, Production, Use \\
Communication & communication & `Communication for some projects must go beyond
    a (monthly) update as transparency is required for academic stakeholders who
    may not appreciate what a project involves in terms of BPR.'
    \autocite[56]{RabaaiEtAl2016SuccesFactorEnterp} & Management, Collection,
    Production, Use \\
Communication & communication & `ERP failure factors and categories Failure
    Categories Failure Factors C4: Project Management F1: Conflicts between
    organization and consultants/ vendor C5: Technical F2: High rate of system
    customization C5: Technical F3: Data management issues C2: Human Resources
    F4: Inadequate education and training C2: Human Resources F5: Inadequate
    user involvement C2: Human Resources F6: Ineffective communications system
    C3: Organizational F7: Internal conflicts between departments C2: Human
    Resources F8: Inadequate change management C3: Organizational F9: Lack of
    performance measurement system C3: Organizational F10: Misfit between
    organization culture and ERP system C3: Organizational F11: Misfit between
    organization structure and ERP system C3: Organizational F12: Misfits
    between the IT and business strategies C1: Environmental F13: Environmental
    pressures C3: Organizational F14: Poor business process reengineering C1:
    Environmental F15: Poor consultant C4: Project Management F16: Poor project
    management C4: Project Management F17: Poor risk management C3:
    Organizational F18: Poor top management support C5: Technical F19: IT
    Technical issues C2: Human Resources F20: Language barriers C4:...'
    \autocite[42]{RavasanEtAl2014FCM-BaDynamiModeli} & Management, Collection,
    Production, Use \\
Communication & communication & `Critical success factors identified in Turkish
    studies Author (s) Critical Success Factors Baskak\& Cetisli (2003) Top
    management support, business plan and vision, ERP teamwork, ERP package
    selection, change management, user training and education, effective
    communication, project management, data integration, software testing and
    troubleshooting, appropriate legacy systems, monitoring and evaluation of
    performance.' \autocite[62]{SaygiliEtAl2017EndUsersPercep} & Management,
    Collection, Production, Use \\
Communication & communication & `Item Description 1 top management support 25
    application project costs 2 effective communication 26 interdepartmental
    cooperation 3 interdepartmental communication 27 dedicated resources 4 clear
    goal and objectives 28 ERP vendor relations 5 business plan-vision 29
    ongoing vendor support 6 change management 30 use of vendor's development
    tools 7 education on new business process 31 organizational characteristics
    8 user training\& education 32 employee / team morale-motivation 9 user
    acceptance 33 leadership of the project team 10 managing cultural change 34
    project team competence- composition 11 business process reengineering 35
    ERP team work 12 customization 36 steering committee 13 minimal
    customization 37 empowered decision makers 14 software configuration 38 use
    of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Management, Collection,
    Production, Use \\
Communication & communication & `Related Sub-Factors 1 (11) Business project
    reengineering (18) Implementation strategies (23) Management of expectations
    (24) Project management (32) Employee / team morale \& motivation (33)
    Leadership of the project team (34) Project team competence and composition
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    2 (14) Software configuration (21) IT infrastructure (28) ERP vendor
    relations (29) Ongoing vendor support (30) Support of vendor development
    tools (38) Use of consultants 3 (40) Project champion (46) National culture
    (47) Country related functional requirements (48) Centralization 4 (1) Top
    management support (2) Effective communication (3) Interdepartmental
    communication (4) Clear goals and objectives (5) Business plan \& vision 5
    (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6
    (7) Education on new business processes (8) User training and education (9)
    User acceptance (10) Managing cultural change this result maybe, end-users
    resist changing business processes instead they prefer customizations in ERP
    software.' \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Management,
    Collection, Production, Use \\
Communication & communication & `The results supported the findings of Sarker \&
    Lee (2003) who stated that strong and committed leadership, open and honest
    communication, and a balanced and empowered implementation team are
    necessary conditions/precursors for successful ERP application.'
    \autocite[68]{SaygiliEtAl2017EndUsersPercep} & Management, Collection,
    Production, Use \\
Communication & communication & `Other important determinants identified in
    factor four are, interdepartmental communication and effective
    communication.' \autocite[68]{SaygiliEtAl2017EndUsersPercep} & Management,
    Collection, Production, Use \\
Communication & communication & `The proposed model confirms that following
    factors play a significant role during implementation of SCMIS-top
    management support, user involvement, pre-implementation analysis, user
    training, change management, data accuracy and communication.'
    \autocite[248]{SethEtAl2015DeveloModelSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `Other important organizational factor
    considered by Ngai et al. (2008), Fui-Hoon Nah et al. (2003) and Sarker and
    Lee (2003) is communication.' \autocite[250]{SethEtAl2015DeveloModelSucces}
    & Management, Collection, Production, Use \\
Communication & communication & `Proper communication in regard to the rationale
    to the implementation and details of the business process management change
    with the employees (Mandal \& Gunasekaran, 2003) is very important.'
    \autocite[250]{SethEtAl2015DeveloModelSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `Therefore, the open communication with the
    employees, suppliers and customers is an important factor for the successful
    implementation of SCMIS (Mabert, Soni \& Venkataramanan, 2003).'
    \autocite[250]{SethEtAl2015DeveloModelSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `According to the regression analysis on the
    successful implementation of SCMIS, as shown in Table 8, factors that have
    significant impact at 5 per cent or higher level include top management
    support, user support and involvement, training and education, change
    management, pre-implementation analysis, communication and data Table 7.'
    \autocite[256]{SethEtAl2015DeveloModelSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `Formal and honest communication from the top
    management leads to reduction in the resistance to change.'
    \autocite[258]{SethEtAl2015DeveloModelSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `Lastly, the findings of this study support the
    proposed hypothesis that communication has a positive impact on SCMIS
    implementation success (H1h), so as organizations move towards integration
    with the outside world, proper communication is imperative between the
    users, top management, project management team and leader.'
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    \autocite[258]{SethEtAl2015DeveloModelSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `Proper communication should ensure that the
    users understand the need and the benefits associated with the adoption of
    the inter-organizational system.'
    \autocite[258]{SethEtAl2015DeveloModelSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `Communication should be two way as well as open
    where employees are free to express themselves and give their feedback.'
    \autocite[258]{SethEtAl2015DeveloModelSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `Communication will reduce the uncertainty with
    the adoption of the information system and would diminish the concern about
    the threat of job, power or status.'
    \autocite[258]{SethEtAl2015DeveloModelSucces} & Management, Collection,
    Production, Use \\
Communication & communication & `Such consequences can be avoided by open
    communication with top management, vendors, and consultants through the
    establishment of senior and professional steering committees, a balanced
    project team, and a ``responsible'' definition of success measures.'
    \autocite[19]{ShaulEtAl2013CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Consultant Support & consultant support & `Other factors found to affect the
    effectiveness of ERP system implementation, includes external consultant
    support, knowledge transfer, and the technical aspects knowledge transfers,
    all of which are essential during an implementation process.'
    \autocite[673]{AliEtAl2017ERPSystemImplem} & Management \\
Consultant Support & use of consultant & `They rate CSFs by a degree of
    importance during ERP implementation as follows: (1) top management support;
    (2) project team competence; (3) inter-departmental cooperation; (4) clear
    goals and objectives; (5) project management; (6) inter-departmental
    communication; (7) management of expectation; (8) project champion; (9)
    vendors' support; (10) careful package selection; (11) data analysis and
    conversion; (12) dedicated resources; (13) use of steering committee; (14)
    user training on software; (15) education on new business processes; (16)
    BPR; (17) minimal customisation; (18) architecture choices; (19) change
    management; (20) partnership with vendors; (21) use of vendors' tool; and
    (22) use of consultant.' \autocite[674]{AliEtAl2017ERPSystemImplem} &
    Management \\
Consultant Support & use of consultant & `Reduce trouble shooting and project
    risk risk management which involves developing proper troubleshooting tools,
    adequate skills and techniques and in relation to the CSF use of
    consultants, working closely with vendors and consultants when something is
    wrong in the system [4].' \autocite[38]{OsmanEtAl2019ERPCriticSucces} &
    Management \\
Consultant Support & use of consultant & `Organisational factors constitute 8 of
    the `top 10' CSFs (Ahmad and PinedoCuenca, 2013), and based on the
    interaction impact among these factors, the most critical to success were
    cultural change, management support, and use of consultants, factors most
    applicable at the crucial stages of adaptation and acceptance.'
    \autocite[87]{RabaaiEtAl2015CulturPerspeon} & Management \\
Consultant Support & use of consultant & `Item Description 1 top management
    support 25 application project costs 2 effective communication 26
    interdepartmental cooperation 3 interdepartmental communication 27 dedicated
    resources 4 clear goal and objectives 28 ERP vendor relations 5 business
    plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's
    development tools 7 education on new business process 31 organizational
    characteristics 8 user training\& education 32 employee / team morale-
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    motivation 9 user acceptance 33 leadership of the project team 10 managing
    cultural change 34 project team competence- composition 11 business process
    reengineering 35 ERP team work 12 customization 36 steering committee 13
    minimal customization 37 empowered decision makers 14 software configuration
    38 use of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Management \\
Consultant Support & use of consultant & `Related Sub-Factors 1 (11) Business
    project reengineering (18) Implementation strategies (23) Management of
    expectations (24) Project management (32) Employee / team morale \&
    motivation (33) Leadership of the project team (34) Project team competence
    and composition 2 (14) Software configuration (21) IT infrastructure (28)
    ERP vendor relations (29) Ongoing vendor support (30) Support of vendor
    development tools (38) Use of consultants 3 (40) Project champion (46)
    National culture (47) Country related functional requirements (48)
    Centralization 4 (1) Top management support (2) Effective communication (3)
    Interdepartmental communication (4) Clear goals and objectives (5) Business
    plan \& vision 5 (15) Data accuracy (16) Data integration (42) Data analysis
    and conversion 6 (7) Education on new business processes (8) User training
    and education (9) User acceptance (10) Managing cultural change this result
    maybe, end-users resist changing business processes instead they prefer
    customizations in ERP software.'
    \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Management \\
Cooperation & cooperation & `They rate CSFs by a degree of importance during ERP
    implementation as follows: (1) top management support; (2) project team
    competence; (3) inter-departmental cooperation; (4) clear goals and
    objectives; (5) project management; (6) inter-departmental communication;
    (7) management of expectation; (8) project champion; (9) vendors' support;
    (10) careful package selection; (11) data analysis and conversion; (12)
    dedicated resources; (13) use of steering committee; (14) user training on
    software; (15) education on new business processes; (16) BPR; (17) minimal
    customisation; (18) architecture choices; (19) change management; (20)
    partnership with vendors; (21) use of vendors' tool; and (22) use of
    consultant.' \autocite[674]{AliEtAl2017ERPSystemImplem} & Management,
    Collection, Production, Use \\
Cooperation & cooperation & `Top management, project management and individuals
    like key players should work in cooperation to adopt the system to their
    organization.' \autocite[87]{BasogluEtAl2007OrganiAdoptiEnterp} &
    Management, Collection, Production, Use \\
Cooperation & cooperation & `Successful ERP implementation requires the
    coordination of many activities and a close cooperation between managers,
    employees, IT specialists, business analysts and consultants [39].'
    \autocite[1255]{ChatzoglouEtAl2016AnteceOutcomERP} & Management, Collection,
    Production, Use \\
Cooperation & cooperation & `Since ERP is a highly integrated information
    system, its design, implementation and operation require the complete
    cooperation of line and staff members from all segments of the business.'
    \autocite[404]{GargEtAl2014CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Cooperation & cooperation & `It needs the cooperation of technical, business
    experts and external consultants, as well as the involvement of end-users in
    different project phases (Nah et al.,2001).'
    \autocite[113]{MahrazEtAl2020CompilAnalysCritic} & Management, Collection,
    Production, Use \\
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Cooperation & cooperation & `The top five were top management support, project
    team competence, project champion, inter-departmental cooperation, and clear
    goals and expectations.' \autocite[6]{Rabaai2009IdentiCriticSucces} &
    Management, Collection, Production, Use \\
Cooperation & cooperation & `Item Description 1 top management support 25
    application project costs 2 effective communication 26 interdepartmental
    cooperation 3 interdepartmental communication 27 dedicated resources 4 clear
    goal and objectives 28 ERP vendor relations 5 business plan-vision 29
    ongoing vendor support 6 change management 30 use of vendor's development
    tools 7 education on new business process 31 organizational characteristics
    8 user training\& education 32 employee / team morale-motivation 9 user
    acceptance 33 leadership of the project team 10 managing cultural change 34
    project team competence- composition 11 business process reengineering 35
    ERP team work 12 customization 36 steering committee 13 minimal
    customization 37 empowered decision makers 14 software configuration 38 use
    of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Management, Collection,
    Production, Use \\
Cooperation & cooperation & `Maintain cooperation, involvement and value of
    trust between departments.' \autocite[74]{SaygiliEtAl2017EndUsersPercep} &
    Management, Collection, Production, Use \\
Cooperation & cooperation & `Intervention of the top management is necessary for
    the resourcing of the project, to take fast and effective decisions, to
    resolve conflict, to promote company-wide acceptance of the project and to
    build cooperation among the diverse groups within the organization.'
    \autocite[250]{SethEtAl2015DeveloModelSucces} & Management, Collection,
    Production, Use \\
Cooperation & cooperation & `It is imperative that we have the complete
    cooperation of employees at all levels; technologies alone will not improve
    the organizational competitiveness.'
    \autocite[250]{SethEtAl2015DeveloModelSucces} & Management, Collection,
    Production, Use \\
Cooperation & cooperation & `Successful implementation of IOS requires the
    cooperation and commitment of trading partners (Premkumar \& Ramamurthy,
    1995); thus, developing cordial relationships and partnerships (Gunasekaran,
    Lai \& Edwin Cheng, 2008; Ketikidis, Koh, Dimitriadis, Gunasekaran \&
    Kehajova, 2008) forms the basis of successful IOS.'
    \autocite[251]{SethEtAl2015DeveloModelSucces} & Management, Collection,
    Production, Use \\
Cooperation & cooperation & `In addition, the project team should be empowered
    to define a clear program and required resources, set realistic milestones,
    and ensure interdepartmental cooperation.'
    \autocite[19]{ShaulEtAl2013CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Cost of Function & budget & `Summarising, Velcu (2010), using an analytical
    approach to investigate ERP system implementations, reports that when ERP
    system implementation strategies are aligned with business strategy, it is
    more likely that ERP implementation will be completed on budget and on
    time.' \autocite[678]{AliEtAl2017ERPSystemImplem} & Management, Collection,
    Production, Use \\
Cost of Function & budget & `These projects are, on average, 178% over budget,
    took 2.5 times longer than intended and delivered only 30% of promised
    benefit [9].' \autocite[227]{AmidEtAl2012IdentiClassiERP} & Management,
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    Collection, Production, Use \\
Cost of Function & budget & `C states: ``Projects have to meet time, budget and
    scope targets to be called successful.'' H, on the other hand, thinks time
    is not the main priority in ERP upgrade projects, as long as there is a
    usable system in place and productivity is not endangered.'
    \autocite[663]{BarthEtAl2019CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Cost of Function & budget & `However, functionality targets have to be achieved
    and budget targets met.' \autocite[663]{BarthEtAl2019CriticSuccesFactor} &
    Management, Collection, Production, Use \\
Cost of Function & budget & `Nevertheless, I states: ``To qualify a project as
    successful, also time and budget targets have to be met.'' As a result of
    the high complexity of the project and the huge dependency on the ERP
    system, B and J scale down the expectations and consider an ERP upgrade
    project as successful when time targets are nearly met and the company is
    able to continue their business without complications.'
    \autocite[663]{BarthEtAl2019CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Cost of Function & budget & `As a result of the high complexity of such
    projects, financial forecasts are often not met and costs exceed the planned
    budget.' \autocite[667]{BarthEtAl2019CriticSuccesFactor} & Management,
    Collection, Production, Use \\
Cost of Function & budget & `In addition to that, about 90% of ERP
    implementations are over budget or late according to a survey constructed in
    1999 (Seewald, 2002).' \autocite[74]{BasogluEtAl2007OrganiAdoptiEnterp} &
    Management, Collection, Production, Use \\
Cost of Function & budget & `A recent Standish Group report on ERP
    implementation projects reveals that these projects are, on average, 178%
    over budget, took 2.5 times longer than intended and delivered only 30% of
    promised benefit (Zhang, Lee, Huang, Zhang, \& Huang, 2005).'
    \autocite[74]{BasogluEtAl2007OrganiAdoptiEnterp} & Management, Collection,
    Production, Use \\
Cost of Function & budget & `Moreover, With ERP penetration at 67%, the ERP
    market was the largest segment of a company's applications budget (34%) in
    2004.' \autocite[77]{BasogluEtAl2007OrganiAdoptiEnterp} & Management,
    Collection, Production, Use \\
Cost of Function & budget & `In spite of high expectations of the organizations
    purchasing ERP software, most of ERP projects become overbudget, late and
    even fail (Genoulaz \& Millet, 2006; Griffith et al., 1999; Hong \& Kim,
    2002; Kumar et al., 2003; Seewald, 2002).'
    \autocite[79]{BasogluEtAl2007OrganiAdoptiEnterp} & Management, Collection,
    Production, Use \\
Cost of Function & budget & `Although most of the ERP projects are failures, ERP
    is still expected to remain the biggest segment of large and mid-size
    companies' IT applications budgets (Seewald, 2002).'
    \autocite[92]{BasogluEtAl2007OrganiAdoptiEnterp} & Management, Collection,
    Production, Use \\
Cost of Function & budget & `In 2004, it was evaluated that 90% of ERP
    applications were delivered late or exceeded the budget, and 67% of these
    applications failed to achieve expected benefits realization [21].'
    \autocite[3]{CoşkunEtAl2022ERPFailurSystem} & Management, Collection,
    Production, Use \\
Cost of Function & budget & `One of the most common types of failure in ERP
    implementation can be seen as budget overruns.'
    \autocite[3]{CoşkunEtAl2022ERPFailurSystem} & Management, Collection,
    Production, Use \\
Cost of Function & budget & `Often, budget overruns are caused by issues such as
    expanded scope, additional technology requirements, unanticipated
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    organizational issues.' \autocite[3]{CoşkunEtAl2022ERPFailurSystem} &
    Management, Collection, Production, Use \\
Cost of Function & budget & `It should not be confused that many factors such as
    ``budget'', ``communication'', and ``project team'' are not examined in the
    ``Project Management Problems'' category since they are examined in separate
    categories because many articles analyzed in this study show that project
    management is handled as project coordination.'
    \autocite[13]{CoşkunEtAl2022ERPFailurSystem} & Management, Collection,
    Production, Use \\
Cost of Function & budget & `(4) The Project Management factor in this study is
    defined by team composition, project team competence, scope management,
    expectation management, communication within project team and budget control
    items which may affect the success of ERP implementation in Indian retail
    sector.' \autocite[1332]{GargEtAl2015FactorAffectERP} & Management,
    Collection, Production, Use \\
Cost of Function & budget & `Extrinsic(3) Organizational CSFs (15) People CSFs
    (12) Technological CSFs (5) ● Communication within the company ●
    Organization resistance ● Project budget ● Project management ●
    Implementation strategy ● Strategic goals and objectives ● Business process
    reengineering ● organizational culture ● knowledge base of the company ●
    Project planning and control ● Facilitating conditions ● Organization size ●
    The vision of the organization ● Readiness of organizations ● Clarity of
    potential cost ● User involvement ● Selection of vendor/consult ant ●
    Project team ● Top management support ● Training of user ● Trust on vendor ●
    Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender
    ● Highest degree attained ● Selection of ERP package ● IT infrastructure ●
    Data integrity and system testing.'
    \autocite[4686]{HuangEtAl2021CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Cost of Function & budget & `This study attempts to present the ERP system's
    implementation success in terms of organizational impact, on time and under
    allocated budget by qualitatively examining relationship of each of the
    identified critical success factors (CSFs) to project's implementation
    success in enterprises of a developing country, China, by using validated
    responses from 12 organizations, using a questionnaire survey approach.'
    \autocite[39]{KhattakEtAl2013InvestCriticSucces} & Management, Collection,
    Production, Use \\
Cost of Function & budget & `As per the Standish group's research more than 90%
    of ERP implementations projects found to run beyond their agreed schedules
    and exceed their initially allocated budget (Hanafizadeh et al., 2010).'
    \autocite[41]{KhattakEtAl2013InvestCriticSucces} & Management, Collection,
    Production, Use \\
Cost of Function & budget & `The aim and main focus of this study is to examine
    the most critical factors in Chinese enterprises by using the
    `organizational impact' dimension of information system success model
    (DeLone and McLean, 1992 \& 2002) for success assessment together with `on
    time and under allocated budget' for project completion as being the success
    measures.' \autocite[41]{KhattakEtAl2013InvestCriticSucces} & Management,
    Collection, Production, Use \\
Cost of Function & budget & `Success of the project was measured by the
    questions about on time and within/under budget project's completion and the
    impact of the ERP systems, whether low or medium or high, on the entire
    organizational performance.'
    \autocite[49]{KhattakEtAl2013InvestCriticSucces} & Management, Collection,
    Production, Use \\
Cost of Function & budget & `As Bradley (2008) argued that a project could be
    said successful only if it is got to be completed within the scheduled time,
    allocated budget and bringing positive impact on the entire organization
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    therefore, on the basis of the same criteria cases 1,2,3,4.5,6,8,9,10 \& 12
    were classed as successful and cases 7 \& 11 were termed as unsuccessful.'
    \autocite[53]{KhattakEtAl2013InvestCriticSucces} & Management, Collection,
    Production, Use \\
Cost of Function & budget & `IT staff too may have a significant learning
    overhead, an inadequate budget for the training required, an extra learning
    curve (with an ongoing dependence on consultants) significant extra work
    necessitated while legacy systems remain critical.'
    \autocite[58]{RabaaiEtAl2016SuccesFactorEnterp} & Production \\
Cost of Function & budget & `These projects are, on average, 178% over budget,
    took 2.5 times longer than intended and delivered only 30% of promised
    benefit (Zhang, Lee, Huang, Zhang, \& Huang, 2005).'
    \autocite[33]{RavasanEtAl2014FCM-BaDynamiModeli} & Management, Collection,
    Production, Use \\
Cost of Function & budget & `Generally, it is believed that the project is
    partially failed because it is not completed within time and/or budget
    (process failure), the ERP systems do not live up to user expectations
    (expectation failure), and there is no match between ERP systems and the
    planned objectives (correspondence failure).'
    \autocite[40]{RavasanEtAl2014FCM-BaDynamiModeli} & Production \\
Cost of Function & cost & `Enterprise resource planning (ERP) systems have
    proved to be the solution to the information needs of many businesses, but a
    costly mistake for many others.' \autocite[666]{AliEtAl2017ERPSystemImplem}
    & Management, Collection, Production, Use \\
Cost of Function & cost & `Mandal and Gunasekaran (2003), examining post-
    implementation feedback, propose a feedback system to help organisations
    constantly monitor the implementation performance, and post-implementation
    strategies to measure the effectiveness of ERP systems, including the
    measurement of objectives achieved, cost estimates, and improvements in IT
    infrastructure.' \autocite[679]{AliEtAl2017ERPSystemImplem} & Management,
    Collection, Production, Use \\
Cost of Function & cost & `They observe that vendor failure to adapt to local
    culture, BPR, managing local human resources, lack of information sharing,
    failure to understand cultural characteristics, lack of adaptability towards
    a changing business and economic environment, lack of cost control functions
    (i.e. adapting to changing costs), and failure to understand technical
    issues are the main causes of ERP implementation failure.'
    \autocite[681]{AliEtAl2017ERPSystemImplem} & Management, Collection,
    Production, Use \\
Cost of Function & cost & `They identify causes of ERP implementation failure as
    excessive customisation, dilemma of internal integration, poor understanding
    of business implications and requirements, lack of change management
    strategy, poor data quality, misalignment of IT with business, hidden costs,
    limited training, and lack of top management support.'
    \autocite[681]{AliEtAl2017ERPSystemImplem} & Management, Collection,
    Production, Use \\
Cost of Function & cost & `Wilson et al. (1994) Sun et al. (1997) Soh et al.
    (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and Markus,
    Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and Adam
    (2005) Kamhawi (2008) Changes in personnel Lack of discipline Organisational
    resistance Lack of organisational commitment Poor data accuracy Limited user
    involvement Mismatch between organisation requirements and functionalities
    offered Lack of readiness for integration Lack of focus on user education
    and training Excessive customisation Inadequate organisational analysis
    Costs Project duration Technical challenges Management changes Table V.
    Implementation failure attributes JEIM 30,4 682 8.'
    \autocite[681]{AliEtAl2017ERPSystemImplem} & Management, Collection,
    Production, Use \\
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Cost of Function & cost & `35% of ERP implementations are canceled, with the
    remaining 65% of them resulting in cost and scheduling overruns averaging
    178% and 230%, respectively.' \autocite[228]{AmidEtAl2012IdentiClassiERP} &
    Management, Collection, Production, Use \\
Cost of Function & cost & `The first category defines success or failure by
    focusing on some project factors like project cost or time but other ones
    define success as a result of achieving implementation goals like
    integrating organizational information, better decision making, improving
    inter-organizational communications and decreasing operational bottlenecks
    [47-49].' \autocite[228]{AmidEtAl2012IdentiClassiERP} & Management,
    Collection, Production, Use \\
Cost of Function & cost & `Project management recognizes three challenging and
    interconnected restraints which are time, scope and cost goals (Schwalbe,
    2000).' \autocite[629]{AnjumEtAl2015FactorManipuERP} & Management,
    Collection, Production, Use \\
Cost of Function & cost & `Because of the large amount of money spent on ERP
    upgrades, which can add up to 25-33 percent of the initial implementation
    costs for one upgrade (Ohlson, 2000), a comprehensive understanding of ERP
    upgrade concepts and their challenges is necessary to prevent project
    failures (Olson and Zhao, 2006).'
    \autocite[657]{BarthEtAl2019CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Cost of Function & cost & `According to a large-scale European multi-country
    survey the most important factor is the best fit with current business
    processes, respectively, organization (Hong and Kim, 2002; Ngai et al.,
    2008), followed by flexibility, cost, user-friendliness, scalability and
    vendor support (van Everdingen et al., 2000).'
    \autocite[659]{BarthEtAl2019CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Cost of Function & cost & `Finally, at the end of any ERP implementation
    project, it is necessary to evaluate its success, focusing on measurable
    project management metrics like completion dates, costs and target
    achievement, and the production system, including metrics like performance
    or reliability (Nah, Lau and Kuang, 2001; Ross and Vitale, 2000).'
    \autocite[659]{BarthEtAl2019CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Cost of Function & cost & `Chen et al. (2009) name maintenance and support as
    essential elements in the management of ERP systems, and show that the
    establishment of appropriate governance structures is necessary, also
    because costs for maintenance can come up to annually about 25 percent of
    implementation costs (Granebring and Revay, 2005).'
    \autocite[659]{BarthEtAl2019CriticSuccesFactor} & Production \\
Cost of Function & cost & `This is also emphasized by Koch and Mitteregger
    (2016), who have shown that amount of customization during implementation
    affects support costs in maintenance, similar to Light (2001).'
    \autocite[659]{BarthEtAl2019CriticSuccesFactor} & Production \\
Cost of Function & cost & `Upgrade activities are getting more attention in ERP-
    using organizations, especially as on average an organization has to execute
    an ERP upgrade every three years (Olson and Zhao, 2006), and costs reach
    between 25 and 33 percent of initial implementation costs.'
    \autocite[660]{BarthEtAl2019CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Cost of Function & cost & `As an ERP system has to be upgraded several times
    during its life cycle, the upgrading costs will exceed the implementation
    costs eventually.' \autocite[660]{BarthEtAl2019CriticSuccesFactor} &
    Production \\
Cost of Function & cost & `As guidelines for such a project, the authors provide
    in addition to a focus on added value rather than cost reduction, most
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    importantly de-individualization.'
    \autocite[660]{BarthEtAl2019CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Cost of Function & cost & `Each new functionality has to be discussed in detail
    and benefits have to be weighed against the costs in order to find the best
    solution for the company.'' A special focus was often put on the project
    manager.' \autocite[664]{BarthEtAl2019CriticSuccesFactor} & Management,
    Collection, Production, Use \\
Cost of Function & cost & `(10) Top management support: ERP upgrade projects not
    only cause huge costs but often also implicate considerable organizational
    and technical change.' \autocite[667]{BarthEtAl2019CriticSuccesFactor} &
    Management, Collection, Production, Use \\
Cost of Function & cost & `As a result of the high complexity of such projects,
    financial forecasts are often not met and costs exceed the planned budget.'
    \autocite[667]{BarthEtAl2019CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Cost of Function & cost & `However, not only because of complexity but also
    because of high costs, a failed ERP upgrade project can have serious
    negative consequences.' \autocite[669]{BarthEtAl2019CriticSuccesFactor} &
    Management, Collection, Production, Use \\
Cost of Function & cost & `Despite numerous implementation challenges and high
    implementation costs, ERP systems have become popular, and both small and
    large companies implement ERP systems in order to remain competitive.'
    \autocite[1254]{ChatzoglouEtAl2016AnteceOutcomERP} & Management, Collection,
    Production, Use \\
Cost of Function & cost & `The expected benefits of system quality include cost
    reduction, enhanced performance and improved efficiency [67].'
    \autocite[1257]{ChatzoglouEtAl2016AnteceOutcomERP} & Management, Collection,
    Production, Use \\
Cost of Function & cost & `Information quality can help organizations choose
    different supply resources, hence, produce with lower costs and, therefore,
    develop competitive advantages, while increasing their competitiveness and
    internal efficiency.' \autocite[1260]{ChatzoglouEtAl2016AnteceOutcomERP} &
    Management, Collection, Production, Use \\
Cost of Function & cost & `Frequency analysis of CSFs in literature CSF category
    Top management commitment and support Change management BPR and software
    configuration Training and job redesign Project team: the best and brightest
    Implementation strategy and timeframe Consultant selection and relationship
    Visioning and planning Balanced team Project champion Communication plan IT
    infrastructure Managing cultural change Post-implementation evaluation
    Selection of ERP Team morale and motivation Vanilla ERP Project management
    Troubleshooting/crises management Legacy system consideration Data
    conversion and integrity System testing Client consultation Project cost
    planning and management Build a business case Empowered decision makers
    Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7
    7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a
    specific aspect of the implementation process or a specific CSF.'
    \autocite[340]{FinneyEtAl2007ERPImplemCompil} & Management, Collection,
    Production, Use \\
Cost of Function & cost & `Developing software systems is an expensive, and
    often a difficult process as software development projects are affected by a
    series of problems, such as poor project management, cost and schedule
    overruns, poor quality software and under-motivated developers.'
    \autocite[500]{GargEtAl2013EmpiriStudyon} & Management, Collection,
    Production, Use \\
Cost of Function & cost & `BPR can be defined as the fundamental rethinking and
    radical redesign of business process to achieve dramatic improvement in
    critical, contemporary measures of performance, such as cost, quality,
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    service and speed approaches (Hammer and Champy, 1993; Koch, 2001; Huang et
    al., 2004).' \autocite[1318]{GargEtAl2015FactorAffectERP} & Collection, Use
    \\
Cost of Function & cost & `Extrinsic(3) Organizational CSFs (15) People CSFs
    (12) Technological CSFs (5) ● Communication within the company ●
    Organization resistance ● Project budget ● Project management ●
    Implementation strategy ● Strategic goals and objectives ● Business process
    reengineering ● organizational culture ● knowledge base of the company ●
    Project planning and control ● Facilitating conditions ● Organization size ●
    The vision of the organization ● Readiness of organizations ● Clarity of
    potential cost ● User involvement ● Selection of vendor/consult ant ●
    Project team ● Top management support ● Training of user ● Trust on vendor ●
    Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender
    ● Highest degree attained ● Selection of ERP package ● IT infrastructure ●
    Data integrity and system testing.'
    \autocite[4686]{HuangEtAl2021CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Cost of Function & cost & `The management in such organizations faced up with
    such a high resistance from the systems users that they were even unable to
    implement the other modules of the system for which their management already
    paid for the huge sum of money, which cause the enterprises with financial
    losses to a great extent and hence the project was declared unsuccessful in
    the end due to both the cost as well as time overruns.'
    \autocite[59]{KhattakEtAl2013InvestCriticSucces} & Management, Collection,
    Production, Use \\
Cost of Function & cost & `Implementing ERPs successfully however is
    problematic, costly and complex, and often shows high failure rates or even
    abandonment due to lack of fit with the business or social culture.'
    \autocite[85]{RabaaiEtAl2015CulturPerspeon} & Management, Collection,
    Production, Use \\
Cost of Function & cost & `Ownership of an Enterprise System is a risky and
    `high cost proposition' involving numerous indirect as well as direct costs
    (Umble, Haft and Umble, 2003).' \autocite[86]{RabaaiEtAl2015CulturPerspeon}
    & Management, Collection, Production, Use \\
Cost of Function & cost & `Such difficulties can be more than pain or
    inconvenience: reports consistently note that the majority of ERP
    implementations fail, with cost and schedule overruns, non-realisation of
    benefits, failure to recoup costs, and satisfaction below 50% on various
    dimensions (Krigsman, 2013).' \autocite[86]{RabaaiEtAl2015CulturPerspeon} &
    Management, Collection, Production, Use \\
Cost of Function & cost & `There was also a significant difference in the
    regularity of cost reviews, with almost 50% of private sector respondents
    disagreeing that ``the project's costs were reviewed regularly'' compared to
    around only 6% of public sector respondents.'
    \autocite[95]{RabaaiEtAl2015CulturPerspeon} & Management, Collection,
    Production, Use \\
Cost of Function & cost & `Other studies indicates that 35% of ERP
    implementations are cancelled, with the remaining 65% of them resulting in
    cost and time overruns averaging 178% and 230%, respectively.'
    \autocite[34]{RavasanEtAl2014FCM-BaDynamiModeli} & Management, Collection,
    Production, Use \\
Cost of Function & cost & `Later on, Gargeya and Brady (2005) classified ERP
    failure implementation in two levels of 1) complete failure: the project is
    cancelled before full implementation or is omitted from operation and 2)
    partial failure: increased implementation costs and time over the estimated,
    inadequate return on investment (ROI) or user satisfaction and so on.'
    \autocite[35]{RavasanEtAl2014FCM-BaDynamiModeli} & Management, Collection,
    Production, Use \\
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Cost of Function & cost & `Item Description 1 top management support 25
    application project costs 2 effective communication 26 interdepartmental
    cooperation 3 interdepartmental communication 27 dedicated resources 4 clear
    goal and objectives 28 ERP vendor relations 5 business plan-vision 29
    ongoing vendor support 6 change management 30 use of vendor's development
    tools 7 education on new business process 31 organizational characteristics
    8 user training\& education 32 employee / team morale-motivation 9 user
    acceptance 33 leadership of the project team 10 managing cultural change 34
    project team competence- composition 11 business process reengineering 35
    ERP team work 12 customization 36 steering committee 13 minimal
    customization 37 empowered decision makers 14 software configuration 38 use
    of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Management, Collection,
    Production, Use \\
Data Analysis \& Conversion & data analysis and conversion & `They rate CSFs by
    a degree of importance during ERP implementation as follows: (1) top
    management support; (2) project team competence; (3) inter-departmental
    cooperation; (4) clear goals and objectives; (5) project management; (6)
    inter-departmental communication; (7) management of expectation; (8) project
    champion; (9) vendors' support; (10) careful package selection; (11) data
    analysis and conversion; (12) dedicated resources; (13) use of steering
    committee; (14) user training on software; (15) education on new business
    processes; (16) BPR; (17) minimal customisation; (18) architecture choices;
    (19) change management; (20) partnership with vendors; (21) use of vendors'
    tool; and (22) use of consultant.'
    \autocite[674]{AliEtAl2017ERPSystemImplem} & Production \\
Data Analysis \& Conversion & data analysis and conversion & `Related Sub-
    Factors 1 (11) Business project reengineering (18) Implementation strategies
    (23) Management of expectations (24) Project management (32) Employee / team
    morale \& motivation (33) Leadership of the project team (34) Project team
    competence and composition 2 (14) Software configuration (21) IT
    infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30)
    Support of vendor development tools (38) Use of consultants 3 (40) Project
    champion (46) National culture (47) Country related functional requirements
    (48) Centralization 4 (1) Top management support (2) Effective communication
    (3) Interdepartmental communication (4) Clear goals and objectives (5)
    Business plan \& vision 5 (15) Data accuracy (16) Data integration (42) Data
    analysis and conversion 6 (7) Education on new business processes (8) User
    training and education (9) User acceptance (10) Managing cultural change
    this result maybe, end-users resist changing business processes instead they
    prefer customizations in ERP software.'
    \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Production \\
Data Analysis \& Conversion & data conversion & `Frequency analysis of CSFs in
    literature CSF category Top management commitment and support Change
    management BPR and software configuration Training and job redesign Project
    team: the best and brightest Implementation strategy and timeframe
    Consultant selection and relationship Visioning and planning Balanced team
    Project champion Communication plan IT infrastructure Managing cultural
    change Post-implementation evaluation Selection of ERP Team morale and
    motivation Vanilla ERP Project management Troubleshooting/crises management
    Legacy system consideration Data conversion and integrity System testing
    Client consultation Project cost planning and management Build a business
    case Empowered decision makers Number of instances cited in literature 25 25
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    23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 5 5 5 4 4 3 3 Researchers have
    very often focused on only a specific aspect of the implementation process
    or a specific CSF.' \autocite[340]{FinneyEtAl2007ERPImplemCompil} &
    Production \\
Data Analysis \& Conversion & data conversion & `ERP implementation success is
    highly dependent on success of data conversion and accuracy.'
    \autocite[440]{GargEtAl2014FactorInflueERP} & Production \\
Data Analysis \& Conversion & data conversion & `in Indian retail sector (2) The
    ``Technological'' factor in this study is defined by Implementation
    strategy, Adequate IT infrastructure, Minimal customization and Data
    conversion and accuracy items which may affect the success of ERP
    implementation in Indian retail sector.'
    \autocite[1331]{GargEtAl2015FactorAffectERP} & Production \\
Data Analysis \& Conversion & data conversion & `ERP implementation success is
    highly dependent on success of data conversion and accuracy.'
    \autocite[1331]{GargEtAl2015FactorAffectERP} & Production \\
Data Analysis \& Conversion & data conversion & `Moreover, end-users involvement
    is helpful in the ERP configuration analysis and in data conversion as well
    as in system testing.' \autocite[38]{OsmanEtAl2019ERPCriticSucces} &
    Production \\
Data Analysis \& Conversion & data conversion & `Moreover, key aspects like data
    conversion, integration and analysis provided by ERP applications are
    pointed out by end-users.' \autocite[69]{SaygiliEtAl2017EndUsersPercep} &
    Production \\
Data Analysis \& Conversion & data integrity & `Extrinsic(3) Organizational CSFs
    (15) People CSFs (12) Technological CSFs (5) ● Communication within the
    company ● Organization resistance ● Project budget ● Project management ●
    Implementation strategy ● Strategic goals and objectives ● Business process
    reengineering ● organizational culture ● knowledge base of the company ●
    Project planning and control ● Facilitating conditions ● Organization size ●
    The vision of the organization ● Readiness of organizations ● Clarity of
    potential cost ● User involvement ● Selection of vendor/consult ant ●
    Project team ● Top management support ● Training of user ● Trust on vendor ●
    Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender
    ● Highest degree attained ● Selection of ERP package ● IT infrastructure ●
    Data integrity and system testing.'
    \autocite[4686]{HuangEtAl2021CriticSuccesFactor} & Production \\
Data Analysis \& Conversion & data integrity & `Certainly efficiency is
    desirable and several CSFs proved relevant in HES - mainly in efficient
    service delivery, IT support, easier access to reliable information by
    integrating disparate legacy systems and reengineered business processes,
    and data integrity.' \autocite[58]{RabaaiEtAl2016SuccesFactorEnterp} &
    Production \\
Data Analysis \& Conversion & data management & `The findings of our study
    reveal that `appropriate business and IT legacy systems', `business
    plan/vision/goals/justification', `business process reengineering', `change
    management culture and programme', `communication', `ERP teamwork and
    composition', `monitoring and evaluation of performance', `project
    champion', `project management', `software/system development, testing and
    troubleshooting', `top management support', `data management', `ERP strategy
    and implementation methodology', `ERP vendor', `organizational
    characteristics', `fit between ERP and business/process', `national culture'
    and `country-related functional requirement' were the commonly extracted
    factors across these 10 countries/regions.'
    \autocite[548]{NgaiEtAl2008ExaminCriticSucces} & Production \\
Data Analysis \& Conversion & data management & `Data management Data management
    is one of the new factors not included in Nah et al. [51].'
    \autocite[555]{NgaiEtAl2008ExaminCriticSucces} & Production \\
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Data Analysis \& Conversion & data management & `Whereas the focus of MRP is on
    manufacturing processes, ERP systems look at a much broader integration of
    information or data management functions within the organisation.'
    \autocite[2]{Rabaai2009IdentiCriticSucces} & Production \\
Data Analysis \& Conversion & data management & `ERP failure factors and
    categories Failure Categories Failure Factors C4: Project Management F1:
    Conflicts between organization and consultants/ vendor C5: Technical F2:
    High rate of system customization C5: Technical F3: Data management issues
    C2: Human Resources F4: Inadequate education and training C2: Human
    Resources F5: Inadequate user involvement C2: Human Resources F6:
    Ineffective communications system C3: Organizational F7: Internal conflicts
    between departments C2: Human Resources F8: Inadequate change management C3:
    Organizational F9: Lack of performance measurement system C3: Organizational
    F10: Misfit between organization culture and ERP system C3: Organizational
    F11: Misfit between organization structure and ERP system C3: Organizational
    F12: Misfits between the IT and business strategies C1: Environmental F13:
    Environmental pressures C3: Organizational F14: Poor business process
    reengineering C1: Environmental F15: Poor consultant C4: Project Management
    F16: Poor project management C4: Project Management F17: Poor risk
    management C3: Organizational F18: Poor top management support C5: Technical
    F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...'
    \autocite[42]{RavasanEtAl2014FCM-BaDynamiModeli} & Production \\
Data Analysis \& Conversion & data management & `Accordingly, Data Management is
    critical in ERP package selection and implementation (Soh et al., 2000;
    Ahituv et al., 2002).' \autocite[69]{SaygiliEtAl2017EndUsersPercep} &
    Production \\
Data Analysis \& Conversion & data quality & `Markus, Tanis and Fenema (2000)
    and Markus, Axline, Petrie and Tanis (2000) identify several other
    attributes associated with implementation failures, including approaching
    ERP implementation from an excessively functional perspective,
    inappropriately cutting the scope of the project, eliminating user training,
    inadequate testing, not improving business processes initially,
    underestimating data quality problems, fragile human capital, and data
    migration problems.' \autocite[680]{AliEtAl2017ERPSystemImplem} & Production
    \\
Data Analysis \& Conversion & data quality & `They identify causes of ERP
    implementation failure as excessive customisation, dilemma of internal
    integration, poor understanding of business implications and requirements,
    lack of change management strategy, poor data quality, misalignment of IT
    with business, hidden costs, limited training, and lack of top management
    support.' \autocite[681]{AliEtAl2017ERPSystemImplem} & Production \\
Data Analysis \& Conversion & data quality & `Data quality and accuracy is a
    major determinant of ERP success widely cited in the literature
    [9,14,19,36,66,87,92].' \autocite[233]{AmidEtAl2012IdentiClassiERP} &
    Production \\
Data Analysis \& Conversion & data quality & `Work practices, poor data quality,
    BPR activities, customization of the ERP system, internal staff adequacy,
    training, top management support, quality of consultants are the main
    problems (Genoulaz \& Millet, 2006).'
    \autocite[89]{BasogluEtAl2007OrganiAdoptiEnterp} & Production \\
Data Analysis \& Conversion & data quality & `To overcome this misfit, companies
    can establish a framework that takes the primary failures of poor
    leadership, poor project management, poor data quality, poor training, and
    users' resistance into consideration.'
    \autocite[18]{ShaulEtAl2013CriticSuccesFactor} & Production \\
Data Analysis \& Conversion & data quality & `Thus, identifying data quality
    requirements is imperative since problems in ERP implementation can arise
    from a lack of forethought about data quality.'
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    \autocite[19]{ShaulEtAl2013CriticSuccesFactor} & Production \\
Data Analysis \& Conversion & data quality & `Fourth, deploy supporting tools to
    control the data quality process by monitoring all dimensions, that is,
    amount, accuracy, timeliness, completeness, consistency, accessibility, and
    multiple sources of the same data.'
    \autocite[19]{ShaulEtAl2013CriticSuccesFactor} & Production \\
Data Input & data input & `The project ERP system modules are normally
    associated with one another, erroneous data input into one component, module
    will negatively influence the functioning of another module (Sum et al.,
    1997; Markus and Tanis, 2000).' \autocite[629]{AnjumEtAl2015FactorManipuERP}
    & Collection \\
Data Input & data input & `Since ERP system modules are intricately linked to
    one another, incorrect data input into one module will adversely affect the
    functioning of other modules.'
    \autocite[405]{GargEtAl2014CriticSuccesFactor} & Collection \\
Data Input & data input & `The project ERP systems modules are intricately
    linked to one another, inaccurate data input into one module will adversely
    affect the functioning of other module (Sum et al., 1997; Markus and Tanis,
    2000).' \autocite[1319]{GargEtAl2015FactorAffectERP} & Collection \\
Education \& Training & education & `They rate CSFs by a degree of importance
    during ERP implementation as follows: (1) top management support; (2)
    project team competence; (3) inter-departmental cooperation; (4) clear goals
    and objectives; (5) project management; (6) inter-departmental
    communication; (7) management of expectation; (8) project champion; (9)
    vendors' support; (10) careful package selection; (11) data analysis and
    conversion; (12) dedicated resources; (13) use of steering committee; (14)
    user training on software; (15) education on new business processes; (16)
    BPR; (17) minimal customisation; (18) architecture choices; (19) change
    management; (20) partnership with vendors; (21) use of vendors' tool; and
    (22) use of consultant.' \autocite[674]{AliEtAl2017ERPSystemImplem} &
    Management, Collection, Production, Use \\
Education \& Training & education & `CSFs identified for successful
    implementation are: a clear understanding of strategic goals, top management
    commitment and support, organisational change management strategy, good
    implementation team, data accuracy, extensive education and training,
    focussed performance measures, and multi-site issues.'
    \autocite[675]{AliEtAl2017ERPSystemImplem} & Management, Collection,
    Production, Use \\
Education \& Training & education & `Wilson et al. (1994) Sun et al. (1997) Soh
    et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and
    Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and
    Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline
    Organisational resistance Lack of organisational commitment Poor data
    accuracy Limited user involvement Mismatch between organisation requirements
    and functionalities offered Lack of readiness for integration Lack of focus
    on user education and training Excessive customisation Inadequate
    organisational analysis Costs Project duration Technical challenges
    Management changes Table V. Implementation failure attributes JEIM 30,4 682
    8.' \autocite[681]{AliEtAl2017ERPSystemImplem} & Management, Collection,
    Production, Use \\
Education \& Training & education & `In this study, the dimension of ``end-
    users'' includes three factors (user involvement, training and education,
    employee skills).' \autocite[1256]{ChatzoglouEtAl2016AnteceOutcomERP} &
    Collection, Use \\
Education \& Training & education & `As expected, education, organizational
    culture, and communication problems come to the fore in large-scale
    companies, while financial problems come to the fore in small-scale
    companies.' \autocite[16]{CoşkunEtAl2022ERPFailurSystem} & Management,
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    Collection, Production, Use \\
Education \& Training & education & `Management of communication, education and
    expectations are critical throughout the organization (Wee, 2000).'
    \autocite[434]{GargEtAl2014FactorInflueERP} & Management, Collection,
    Production, Use \\
Education \& Training & education & `F3 Quality (adequacy) and quantity of
    training and education of personnel/ system users Nelson \& Cheney, 1987;
    Umble et al.,2003; Bradford \& Florin, 2003; Bradley \& Lee, 2007; Somers \&
    Nelson, 2001; Zhang et al.,2002; Bhatti, 2005; AlMashari et al.,2006;
    Yuanqiang et al.,2009; Noudoostbeni \& Norizan, 2009; Kumar et al.,2010;
    Woo,2007; Almahdi et al.,2008; Anjum \& Rehman,2010; Garg, 2010; Upadhyay \&
    Dan,2008; Nah et al.,2001; Jafari et al.,2006; Ranzhe \& Qiu,2007; Zarei \&
    Naeli, 2010); Hanafizadeh et al., 2010; Lai,2006; Muscatello \& Chen, 2008.'
    \autocite[47]{KhattakEtAl2013InvestCriticSucces} & Management, Collection,
    Production, Use \\
Education \& Training & education & `The research concludes that: (1) Quality
    (adequacy) and quantity of training and education of personnel/users, role
    and effectiveness of management in reducing the users' resistance, use of
    steering committee for control purpose, top management support or
    involvement, clearly specified goals/objectives/scope regarding ERP system,
    ease of system's use and users' acceptance, vendor's support, project
    management, effective communication among the organizational members and a
    balanced team for ERP implementation are practically considered by the
    successful enterprises in China while planning and going for the
    implementation of the ERP system and are thus critical for the success of
    ERP systems implementation projects, ignoring of which may cause
    implementation failure in the Chinese organizations; (2) Some of the factors
    deemed imperative for ERP systems implementation success in the literature
    like; selection of a right full time project manager with extensive
    experience, presence/existence of a champion, integration of business
    planning with IT/ERP planning, use and role of consultant, change management
    strategy and programs, competency in use of IT and IT infrastructure,
    business...' \autocite[68]{KhattakEtAl2013InvestCriticSucces} & Management,
    Collection, Production, Use \\
Education \& Training & education & `According to the literature, the most
    studied factors were: Top Management Support, Effective Communication,
    Training, and Education, Business plan and vision, Project Management, BPR
    management, Change Management, Project team Composition/ Teamwork, Project
    champion, ERP Choices, Technical Implementation, Technological
    Infrastructure, Legacy systems consideration.'
    \autocite[112]{MahrazEtAl2020CompilAnalysCritic} & Management, Collection,
    Production, Use \\
Education \& Training & education & `The factors identified were management and
    leadership, visioning and planning, ERP package selection, communication
    process management, training and education, project management, legacy
    systems management, system integration, system testing, cultural and
    structural changes, and performance evaluation and management.'
    \autocite[6]{Rabaai2009IdentiCriticSucces} & Management, Collection,
    Production, Use \\
Education \& Training & education & `They are the few key areas where things
    must go right. . . '' An earlier paper by this team (Ram, Corkindale and Wu,
    2013) tabulated the relationships found in the literature between CSFs and
    implementation or performance output success to identify four factors
    consistently emerging as central, namely project management, training and
    education, business process re-engineering and system integration.'
    \autocite[87]{RabaaiEtAl2015CulturPerspeon} & Management, Collection,
    Production, Use \\
Education \& Training & education & `Low ease of use could be due to the
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    complexity and unfamiliarity of the interfaces, ineffective end-user
    education and training, inadequate user involvement and participation in the
    implementation, or simply user rejection of the technology.'
    \autocite[97]{RabaaiEtAl2015CulturPerspeon} & Management, Collection,
    Production, Use \\
Education \& Training & education & `Cultures that have successfully adopted
    ERPs recognise the importance of adequate education and training for end-
    users in using the new system (Bajwa, Garcia and Mooney, 2004).'
    \autocite[97]{RabaaiEtAl2015CulturPerspeon} & Management, Collection,
    Production, Use \\
Education \& Training & education & `One of the first articles that has been
    published about analyzing ERP failures returned to Umble and Umble (2002) in
    which they mentioned that lack of education, BPR, project management, top
    management support and unrealistic expectations of users could lead
    companies to fail.' \autocite[35]{RavasanEtAl2014FCM-BaDynamiModeli} &
    Management, Collection, Production, Use \\
Education \& Training & education & `ERP failure factors and categories Failure
    Categories Failure Factors C4: Project Management F1: Conflicts between
    organization and consultants/ vendor C5: Technical F2: High rate of system
    customization C5: Technical F3: Data management issues C2: Human Resources
    F4: Inadequate education and training C2: Human Resources F5: Inadequate
    user involvement C2: Human Resources F6: Ineffective communications system
    C3: Organizational F7: Internal conflicts between departments C2: Human
    Resources F8: Inadequate change management C3: Organizational F9: Lack of
    performance measurement system C3: Organizational F10: Misfit between
    organization culture and ERP system C3: Organizational F11: Misfit between
    organization structure and ERP system C3: Organizational F12: Misfits
    between the IT and business strategies C1: Environmental F13: Environmental
    pressures C3: Organizational F14: Poor business process reengineering C1:
    Environmental F15: Poor consultant C4: Project Management F16: Poor project
    management C4: Project Management F17: Poor risk management C3:
    Organizational F18: Poor top management support C5: Technical F19: IT
    Technical issues C2: Human Resources F20: Language barriers C4:...'
    \autocite[42]{RavasanEtAl2014FCM-BaDynamiModeli} & Management, Collection,
    Production, Use \\
Education \& Training & education & `Critical success factors identified in
    Turkish studies Author (s) Critical Success Factors Baskak\& Cetisli (2003)
    Top management support, business plan and vision, ERP teamwork, ERP package
    selection, change management, user training and education, effective
    communication, project management, data integration, software testing and
    troubleshooting, appropriate legacy systems, monitoring and evaluation of
    performance.' \autocite[62]{SaygiliEtAl2017EndUsersPercep} & Management,
    Collection, Production, Use \\
Education \& Training & education & `Item Description 1 top management support
    25 application project costs 2 effective communication 26 interdepartmental
    cooperation 3 interdepartmental communication 27 dedicated resources 4 clear
    goal and objectives 28 ERP vendor relations 5 business plan-vision 29
    ongoing vendor support 6 change management 30 use of vendor's development
    tools 7 education on new business process 31 organizational characteristics
    8 user training\& education 32 employee / team morale-motivation 9 user
    acceptance 33 leadership of the project team 10 managing cultural change 34
    project team competence- composition 11 business process reengineering 35
    ERP team work 12 customization 36 steering committee 13 minimal
    customization 37 empowered decision makers 14 software configuration 38 use
    of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
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    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Management, Collection,
    Production, Use \\
Education \& Training & education & `Related Sub-Factors 1 (11) Business project
    reengineering (18) Implementation strategies (23) Management of expectations
    (24) Project management (32) Employee / team morale \& motivation (33)
    Leadership of the project team (34) Project team competence and composition
    2 (14) Software configuration (21) IT infrastructure (28) ERP vendor
    relations (29) Ongoing vendor support (30) Support of vendor development
    tools (38) Use of consultants 3 (40) Project champion (46) National culture
    (47) Country related functional requirements (48) Centralization 4 (1) Top
    management support (2) Effective communication (3) Interdepartmental
    communication (4) Clear goals and objectives (5) Business plan \& vision 5
    (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6
    (7) Education on new business processes (8) User training and education (9)
    User acceptance (10) Managing cultural change this result maybe, end-users
    resist changing business processes instead they prefer customizations in ERP
    software.' \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Management,
    Collection, Production, Use \\
Education \& Training & education & `According to the regression analysis on the
    successful implementation of SCMIS, as shown in Table 8, factors that have
    significant impact at 5 per cent or higher level include top management
    support, user support and involvement, training and education, change
    management, pre-implementation analysis, communication and data Table 7.'
    \autocite[256]{SethEtAl2015DeveloModelSucces} & Management, Collection,
    Production, Use \\
Education \& Training & training & `They rate CSFs by a degree of importance
    during ERP implementation as follows: (1) top management support; (2)
    project team competence; (3) inter-departmental cooperation; (4) clear goals
    and objectives; (5) project management; (6) inter-departmental
    communication; (7) management of expectation; (8) project champion; (9)
    vendors' support; (10) careful package selection; (11) data analysis and
    conversion; (12) dedicated resources; (13) use of steering committee; (14)
    user training on software; (15) education on new business processes; (16)
    BPR; (17) minimal customisation; (18) architecture choices; (19) change
    management; (20) partnership with vendors; (21) use of vendors' tool; and
    (22) use of consultant.' \autocite[674]{AliEtAl2017ERPSystemImplem} &
    Management, Collection, Production, Use \\
Education \& Training & training & `CSFs identified for successful
    implementation are: a clear understanding of strategic goals, top management
    commitment and support, organisational change management strategy, good
    implementation team, data accuracy, extensive education and training,
    focussed performance measures, and multi-site issues.'
    \autocite[675]{AliEtAl2017ERPSystemImplem} & Management, Collection,
    Production, Use \\
Education \& Training & training & `Markus, Tanis and Fenema (2000) and Markus,
    Axline, Petrie and Tanis (2000) identify several other attributes associated
    with implementation failures, including approaching ERP implementation from
    an excessively functional perspective, inappropriately cutting the scope of
    the project, eliminating user training, inadequate testing, not improving
    business processes initially, underestimating data quality problems, fragile
    human capital, and data migration problems.'
    \autocite[680]{AliEtAl2017ERPSystemImplem} & Management, Collection,
    Production, Use \\
Education \& Training & training & `They identify causes of ERP implementation
    failure as excessive customisation, dilemma of internal integration, poor
    understanding of business implications and requirements, lack of change
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    management strategy, poor data quality, misalignment of IT with business,
    hidden costs, limited training, and lack of top management support.'
    \autocite[681]{AliEtAl2017ERPSystemImplem} & Management, Collection,
    Production, Use \\
Education \& Training & training & `Wilson et al. (1994) Sun et al. (1997) Soh
    et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and
    Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and
    Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline
    Organisational resistance Lack of organisational commitment Poor data
    accuracy Limited user involvement Mismatch between organisation requirements
    and functionalities offered Lack of readiness for integration Lack of focus
    on user education and training Excessive customisation Inadequate
    organisational analysis Costs Project duration Technical challenges
    Management changes Table V. Implementation failure attributes JEIM 30,4 682
    8.' \autocite[681]{AliEtAl2017ERPSystemImplem} & Management, Collection,
    Production, Use \\
Education \& Training & training & `The most common causes of ERP implementation
    failures are a combination of poor planning and high software customisation
    (Scheer and Habbermann, 2000), lack of top management commitment;
    ineffective communication; insufficient training; lack of user support, poor
    project management, relying on legacy systems, inter-departmental conflicts,
    poor composition of project teams, failure in redesigning business processes
    and, lack of clarity about required changes.'
    \autocite[682]{AliEtAl2017ERPSystemImplem} & Management, Collection,
    Production, Use \\
Education \& Training & training & `Work practices, poor data quality, BPR
    activities, customization of the ERP system, internal staff adequacy,
    training, top management support, quality of consultants are the main
    problems (Genoulaz \& Millet, 2006).'
    \autocite[89]{BasogluEtAl2007OrganiAdoptiEnterp} & Management, Collection,
    Production, Use \\
Education \& Training & training & `In this study, the dimension of ``end-
    users'' includes three factors (user involvement, training and education,
    employee skills).' \autocite[1256]{ChatzoglouEtAl2016AnteceOutcomERP} &
    Collection, Use \\
Education \& Training & training & `Lack of management support, poor
    organizational culture, communication problems, financial management
    problems, lack of clarity on scope, project management problems, poor
    project team, ERP software misfit, poor solution implementer performance,
    poor quality of testing, outdated it infrastructure, lack of training,
    highly customized ERP, poor process design, lack of user involvement,
    resistance to change, unrealistic expectations are the main failure factors
    that need to be analyzed in detail.'
    \autocite[3]{CoşkunEtAl2022ERPFailurSystem} & Management, Collection,
    Production, Use \\
Education \& Training & training & `Therefore, it involves not only the planning
    stages, but also the allocating of responsibilities to various players, the
    definition of milestones and critical paths, training and human resource
    planning, and finally the determination of measures of success (Nah et al.,
    2001).' \autocite[336]{FinneyEtAl2007ERPImplemCompil} & Management,
    Collection, Production, Use \\
Education \& Training & training & `Frequency analysis of CSFs in literature CSF
    category Top management commitment and support Change management BPR and
    software configuration Training and job redesign Project team: the best and
    brightest Implementation strategy and timeframe Consultant selection and
    relationship Visioning and planning Balanced team Project champion
    Communication plan IT infrastructure Managing cultural change Post-
    implementation evaluation Selection of ERP Team morale and motivation
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    Vanilla ERP Project management Troubleshooting/crises management Legacy
    system consideration Data conversion and integrity System testing Client
    consultation Project cost planning and management Build a business case
    Empowered decision makers Number of instances cited in literature 25 25 23
    23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very
    often focused on only a specific aspect of the implementation process or a
    specific CSF.' \autocite[340]{FinneyEtAl2007ERPImplemCompil} & Management,
    Collection, Production, Use \\
Education \& Training & training & `Consultants who are not able to demonstrate
    a mastery of professional communication skills, good language capability,
    industrial knowledge, and business analytical skills, are not able to
    provide expertise concerning project planning, ERP systems and BPR during
    ERP implementation and hence cannot act as change agents and fill the
    knowledge gaps (Ngai et al., 2008; Stebel, 1992; Ganesh and Mehta, 2010; Nah
    and Lau, 2001) (for example, communicating with project team members and
    users for acquiring business requirements, conducting BPR and delivering
    professional training).' \autocite[499]{GargEtAl2013EmpiriStudyon} &
    Management, Collection, Production, Use \\
Education \& Training & training & `Extrinsic(3) Organizational CSFs (15) People
    CSFs (12) Technological CSFs (5) ● Communication within the company ●
    Organization resistance ● Project budget ● Project management ●
    Implementation strategy ● Strategic goals and objectives ● Business process
    reengineering ● organizational culture ● knowledge base of the company ●
    Project planning and control ● Facilitating conditions ● Organization size ●
    The vision of the organization ● Readiness of organizations ● Clarity of
    potential cost ● User involvement ● Selection of vendor/consult ant ●
    Project team ● Top management support ● Training of user ● Trust on vendor ●
    Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender
    ● Highest degree attained ● Selection of ERP package ● IT infrastructure ●
    Data integrity and system testing.'
    \autocite[4686]{HuangEtAl2021CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Education \& Training & training & `P3: The quality (adequacy) and quantity of
    training and education of personnel/users are positively related to
    successful implementation of ERP project.'
    \autocite[46]{KhattakEtAl2013InvestCriticSucces} & Management, Collection,
    Production, Use \\
Education \& Training & training & `The research concludes that: (1) Quality
    (adequacy) and quantity of training and education of personnel/users, role
    and effectiveness of management in reducing the users' resistance, use of
    steering committee for control purpose, top management support or
    involvement, clearly specified goals/objectives/scope regarding ERP system,
    ease of system's use and users' acceptance, vendor's support, project
    management, effective communication among the organizational members and a
    balanced team for ERP implementation are practically considered by the
    successful enterprises in China while planning and going for the
    implementation of the ERP system and are thus critical for the success of
    ERP systems implementation projects, ignoring of which may cause
    implementation failure in the Chinese organizations; (2) Some of the factors
    deemed imperative for ERP systems implementation success in the literature
    like; selection of a right full time project manager with extensive
    experience, presence/existence of a champion, integration of business
    planning with IT/ERP planning, use and role of consultant, change management
    strategy and programs, competency in use of IT and IT infrastructure,
    business...' \autocite[68]{KhattakEtAl2013InvestCriticSucces} & Management,
    Collection, Production, Use \\
Education \& Training & training & `According to the literature, the most
    studied factors were: Top Management Support, Effective Communication,
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    Training, and Education, Business plan and vision, Project Management, BPR
    management, Change Management, Project team Composition/ Teamwork, Project
    champion, ERP Choices, Technical Implementation, Technological
    Infrastructure, Legacy systems consideration.'
    \autocite[112]{MahrazEtAl2020CompilAnalysCritic} & Management, Collection,
    Production, Use \\
Education \& Training & training & `The factors identified were management and
    leadership, visioning and planning, ERP package selection, communication
    process management, training and education, project management, legacy
    systems management, system integration, system testing, cultural and
    structural changes, and performance evaluation and management.'
    \autocite[6]{Rabaai2009IdentiCriticSucces} & Management, Collection,
    Production, Use \\
Education \& Training & training & `Disruption to staff and resistance to
    received `best practices', together with required training, data mapping,
    customisations and their support, complexity of integration with remaining
    legacy systems are all commonly reported, and are often ongoing issues post-
    implementation.' \autocite[86]{RabaaiEtAl2015CulturPerspeon} & Management,
    Collection, Production, Use \\
Education \& Training & training & `They are the few key areas where things must
    go right. . . '' An earlier paper by this team (Ram, Corkindale and Wu, 2013)
    tabulated the relationships found in the literature between CSFs and
    implementation or performance output success to identify four factors
    consistently emerging as central, namely project management, training and
    education, business process re-engineering and system integration.'
    \autocite[87]{RabaaiEtAl2015CulturPerspeon} & Management, Collection,
    Production, Use \\
Education \& Training & training & `Lack of benefit realisation is not simply
    attributable to technical or managerial aspects however, since most items
    specifically addressing required training, change and team composition
    largely showed that these aspects were adequately understood and
    implemented.' \autocite[97]{RabaaiEtAl2015CulturPerspeon} & Management,
    Collection, Production, Use \\
Education \& Training & training & `Low ease of use could be due to the
    complexity and unfamiliarity of the interfaces, ineffective end-user
    education and training, inadequate user involvement and participation in the
    implementation, or simply user rejection of the technology.'
    \autocite[97]{RabaaiEtAl2015CulturPerspeon} & Management, Collection,
    Production, Use \\
Education \& Training & training & `Cultures that have successfully adopted ERPs
    recognise the importance of adequate education and training for end-users in
    using the new system (Bajwa, Garcia and Mooney, 2004).'
    \autocite[97]{RabaaiEtAl2015CulturPerspeon} & Management, Collection,
    Production, Use \\
Education \& Training & training & `Arabic organisations often devalue this
    however, considering training end-users as an additional cost to be avoided
    as much as possible.' \autocite[97]{RabaaiEtAl2015CulturPerspeon} &
    Management, Collection, Production, Use \\
Education \& Training & training & `As a cheaper substitute to training,
    organisations often provide end-users with printed manuals describing the
    system's functionality, as happened in the majority of organisations
    surveyed here.' \autocite[97]{RabaaiEtAl2015CulturPerspeon} & Management,
    Collection, Production, Use \\
Education \& Training & training & `While the results suggested most respondents
    considered the training adequate, it can be argued that the failure to
    provide significant resources for training purposes has seen short-term
    gains, but ultimately end-users ignorance and 98 A.A. Rabaa'i and E. AlJamal
    system rejection led to long-term failure.'
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    \autocite[97]{RabaaiEtAl2015CulturPerspeon} & Management, Collection,
    Production, Use \\
Education \& Training & training & `Further research could examine this more
    closely, since traditional Jordanian cultural attitudes to training and
    change management may not match the requirements for successful ERP uptake.'
    \autocite[98]{RabaaiEtAl2015CulturPerspeon} & Management, Collection,
    Production, Use \\
Education \& Training & training & `Disruption to staff and resistance to
    received ``best practices'', together with required training, data mapping,
    customizations and their support, complexity of integration with remaining
    legacy systems are all commonly reported, and are often ongoing issues post-
    implementation.' \autocite[46]{RabaaiEtAl2016SuccesFactorEnterp} &
    Management, Collection, Production, Use \\
Education \& Training & training & `IT staff too may have a significant learning
    overhead, an inadequate budget for the training required, an extra learning
    curve (with an ongoing dependence on consultants) significant extra work
    necessitated while legacy systems remain critical.'
    \autocite[58]{RabaaiEtAl2016SuccesFactorEnterp} & Production \\
Education \& Training & training & `ERP failure factors and categories Failure
    Categories Failure Factors C4: Project Management F1: Conflicts between
    organization and consultants/ vendor C5: Technical F2: High rate of system
    customization C5: Technical F3: Data management issues C2: Human Resources
    F4: Inadequate education and training C2: Human Resources F5: Inadequate
    user involvement C2: Human Resources F6: Ineffective communications system
    C3: Organizational F7: Internal conflicts between departments C2: Human
    Resources F8: Inadequate change management C3: Organizational F9: Lack of
    performance measurement system C3: Organizational F10: Misfit between
    organization culture and ERP system C3: Organizational F11: Misfit between
    organization structure and ERP system C3: Organizational F12: Misfits
    between the IT and business strategies C1: Environmental F13: Environmental
    pressures C3: Organizational F14: Poor business process reengineering C1:
    Environmental F15: Poor consultant C4: Project Management F16: Poor project
    management C4: Project Management F17: Poor risk management C3:
    Organizational F18: Poor top management support C5: Technical F19: IT
    Technical issues C2: Human Resources F20: Language barriers C4:...'
    \autocite[42]{RavasanEtAl2014FCM-BaDynamiModeli} & Management, Collection,
    Production, Use \\
Education \& Training & training & `Critical success factors identified in
    Turkish studies Author (s) Critical Success Factors Baskak\& Cetisli (2003)
    Top management support, business plan and vision, ERP teamwork, ERP package
    selection, change management, user training and education, effective
    communication, project management, data integration, software testing and
    troubleshooting, appropriate legacy systems, monitoring and evaluation of
    performance.' \autocite[62]{SaygiliEtAl2017EndUsersPercep} & Management,
    Collection, Production, Use \\
Education \& Training & training & `Item Description 1 top management support 25
    application project costs 2 effective communication 26 interdepartmental
    cooperation 3 interdepartmental communication 27 dedicated resources 4 clear
    goal and objectives 28 ERP vendor relations 5 business plan-vision 29
    ongoing vendor support 6 change management 30 use of vendor's development
    tools 7 education on new business process 31 organizational characteristics
    8 user training\& education 32 employee / team morale-motivation 9 user
    acceptance 33 leadership of the project team 10 managing cultural change 34
    project team competence- composition 11 business process reengineering 35
    ERP team work 12 customization 36 steering committee 13 minimal
    customization 37 empowered decision makers 14 software configuration 38 use
    of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
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    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Management, Collection,
    Production, Use \\
Education \& Training & training & `Related Sub-Factors 1 (11) Business project
    reengineering (18) Implementation strategies (23) Management of expectations
    (24) Project management (32) Employee / team morale \& motivation (33)
    Leadership of the project team (34) Project team competence and composition
    2 (14) Software configuration (21) IT infrastructure (28) ERP vendor
    relations (29) Ongoing vendor support (30) Support of vendor development
    tools (38) Use of consultants 3 (40) Project champion (46) National culture
    (47) Country related functional requirements (48) Centralization 4 (1) Top
    management support (2) Effective communication (3) Interdepartmental
    communication (4) Clear goals and objectives (5) Business plan \& vision 5
    (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6
    (7) Education on new business processes (8) User training and education (9)
    User acceptance (10) Managing cultural change this result maybe, end-users
    resist changing business processes instead they prefer customizations in ERP
    software.' \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Management,
    Collection, Production, Use \\
Education \& Training & training & `The proposed model confirms that following
    factors play a significant role during implementation of SCMIS-top
    management support, user involvement, pre-implementation analysis, user
    training, change management, data accuracy and communication.'
    \autocite[248]{SethEtAl2015DeveloModelSucces} & Management, Collection,
    Production, Use \\
Education \& Training & training & `According to the regression analysis on the
    successful implementation of SCMIS, as shown in Table 8, factors that have
    significant impact at 5 per cent or higher level include top management
    support, user support and involvement, training and education, change
    management, pre-implementation analysis, communication and data Table 7.'
    \autocite[256]{SethEtAl2015DeveloModelSucces} & Management, Collection,
    Production, Use \\
Education \& Training & training & `Note: Numbers are the beta weight and **p <
    0.05. confirms that these CSVs has a significant impact, and in order to
    have a successful implementation of SCMIS, top management support, user
    support and involvement, preimplementation analysis, training, change
    management, data accuracy and communication are critical.'
    \autocite[257]{SethEtAl2015DeveloModelSucces} & Management, Collection,
    Production, Use \\
Education \& Training & training & `The findings also support the proposed
    hypothesis that training and knowledge transfer has a positive impact on
    SCMIS implementation success (H4b), so organization should arrange effective
    training for the end users of SCMIS for smooth implementation of the
    system.' \autocite[258]{SethEtAl2015DeveloModelSucces} & Management,
    Collection, Production, Use \\
Education \& Training & training & `To overcome this misfit, companies can
    establish a framework that takes the primary failures of poor leadership,
    poor project management, poor data quality, poor training, and users'
    resistance into consideration.'
    \autocite[18]{ShaulEtAl2013CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Education \& Training & training & `● IT infrastructure ● System Training and
    knowledge transfer ● Over-dependence on detailed and heavy customization ●
    High turnover rate of project team members ● Business process re-engineering
    ● User's resistance to transform ● ERP system misfit Considering these
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    critical factors, specifically affecting the agricultural business sectors
    in Malaysia, there are a few possible suggestions proposed.'
    \autocite[2055]{ShukorEtAl2020EnterpResourPlanni} & Management, Collection,
    Production, Use \\
Empowered Decision-makers & empower & `This is partially supported by Maas et
    al. (2014), who investigate the impact of organisational control and
    empowerment on ERP system usage.' \autocite[677]{AliEtAl2017ERPSystemImplem}
    & Management \\
Empowered Decision-makers & empower & `The authors find that empowerment
    strategy is positively related to increased system usage whilst an
    inverted-U relationship is observed for organisational control.'
    \autocite[677]{AliEtAl2017ERPSystemImplem} & Management \\
Empowered Decision-makers & empower & `This concept refers to the need for the
    team to be empowered to make necessary decisions (Shanks and Parr, 2000;
    Chen, 2001) in due time, so as to allow for effective timing with respect to
    the implementation (Gupta, 2000).'
    \autocite[337]{FinneyEtAl2007ERPImplemCompil} & Management \\
Empowered Decision-makers & empower & `Frequency analysis of CSFs in literature
    CSF category Top management commitment and support Change management BPR and
    software configuration Training and job redesign Project team: the best and
    brightest Implementation strategy and timeframe Consultant selection and
    relationship Visioning and planning Balanced team Project champion
    Communication plan IT infrastructure Managing cultural change Post-
    implementation evaluation Selection of ERP Team morale and motivation
    Vanilla ERP Project management Troubleshooting/crises management Legacy
    system consideration Data conversion and integrity System testing Client
    consultation Project cost planning and management Build a business case
    Empowered decision makers Number of instances cited in literature 25 25 23
    23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very
    often focused on only a specific aspect of the implementation process or a
    specific CSF.' \autocite[340]{FinneyEtAl2007ERPImplemCompil} & Management \\
Empowered Decision-makers & empower & `Decision maker in the project team should
    be empowered to make speedy and valuable decisions.'
    \autocite[409]{GargEtAl2014CriticSuccesFactor} & Management \\
Empowered Decision-makers & empower & `Finally, the PM team should be empowered
    to manage all aspects of the project, including balancing the technical,
    business, and change management requirements.'
    \autocite[416]{GargEtAl2014CriticSuccesFactor} & Management \\
Empowered Decision-makers & empower & `The most generalized ones being, cost
    reduction, productivity and quality improvement, better resource management,
    improved decision-making and planning, and organizational empowerment
    (Federici, 2009; Kamhawi, 2008).'
    \autocite[425]{GargEtAl2014FactorInflueERP} & Management \\
Empowered Decision-makers & empower & `In addition, the decision maker in the
    project team should be empowered to make quick and effective decisions
    [53,54].' \autocite[555]{NgaiEtAl2008ExaminCriticSucces} & Management \\
Empowered Decision-makers & empower & `In order to have an effective and fast
    decision maker, the key member of the project team must be empowered.'
    \autocite[557]{NgaiEtAl2008ExaminCriticSucces} & Management \\
Empowered Decision-makers & empower & `Further, the project team should be
    empowered in decision making for continuous implementation progress.'
    \autocite[37]{OsmanEtAl2019ERPCriticSucces} & Management \\
Empowered Decision-makers & empower & `3 Note: Other critical success factors
    were found in the reviewed articles, such as: system testing, building a
    business case, and empowered decision makers.'
    \autocite[7]{Rabaai2009IdentiCriticSucces} & Management \\
Empowered Decision-makers & empower & `Item Description 1 top management support
    25 application project costs 2 effective communication 26 interdepartmental
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    cooperation 3 interdepartmental communication 27 dedicated resources 4 clear
    goal and objectives 28 ERP vendor relations 5 business plan-vision 29
    ongoing vendor support 6 change management 30 use of vendor's development
    tools 7 education on new business process 31 organizational characteristics
    8 user training\& education 32 employee / team morale-motivation 9 user
    acceptance 33 leadership of the project team 10 managing cultural change 34
    project team competence- composition 11 business process reengineering 35
    ERP team work 12 customization 36 steering committee 13 minimal
    customization 37 empowered decision makers 14 software configuration 38 use
    of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Management \\
Empowered Decision-makers & empower & `The results supported the findings of
    Sarker \& Lee (2003) who stated that strong and committed leadership, open
    and honest communication, and a balanced and empowered implementation team
    are necessary conditions/precursors for successful ERP application.'
    \autocite[68]{SaygiliEtAl2017EndUsersPercep} & Management \\
Empowered Decision-makers & empower & `In addition, the project team should be
    empowered to define a clear program and required resources, set realistic
    milestones, and ensure interdepartmental cooperation.'
    \autocite[19]{ShaulEtAl2013CriticSuccesFactor} & Management \\
Empowered Decision-makers & reporting level & `Therefore, the project manager's
    reporting level does not positively or negatively affects ERP system
    implementation project success and hence the literature stating the project
    manager's reporting relationship as imperative for the project success is
    not supported in the current study.'
    \autocite[53]{KhattakEtAl2013InvestCriticSucces} & Management \\
Empowered Decision-makers & reporting level & `... process re-
    engineering/customization, involvement of organizational members/users in
    ERP adoption/implementation and ERP strategy \& implementation methodology
    are found as least critical i.e. some organizations in China considers these
    while some do not and therefore, these factors may be necessary but
    exclusively relying on the same may not favorably or unfavorably leads and
    thus can not sufficiently guarantee the ERP project implementation success;
    and finally (3) A managerial based issue that was supported in the past
    scholarly work i.e. reporting level of the project manager is not
    practically considered by the enterprises included in the current research
    and is therefore not critical at all for ERP systems implementation success
    in Chinese organizations.' \autocite[68]{KhattakEtAl2013InvestCriticSucces}
    & Management \\
External Environment & economic environment & `They observe that vendor failure
    to adapt to local culture, BPR, managing local human resources, lack of
    information sharing, failure to understand cultural characteristics, lack of
    adaptability towards a changing business and economic environment, lack of
    cost control functions (i.e. adapting to changing costs), and failure to
    understand technical issues are the main causes of ERP implementation
    failure.' \autocite[681]{AliEtAl2017ERPSystemImplem} & Management \\
External Environment & economic environment & `One of the most probable reasons
    among others may be diversity of the samples that are targeted in different
    regions and countries, which may have different national or organizational
    cultures, government laws or regulations and level of economic
    environments.' \autocite[46]{KhattakEtAl2013InvestCriticSucces} & Management
    \\
External Environment & economic environment & `Cultures, government regulations,
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    and economic environments differ among countries, a fact that raises some
    issues and challenges for ERP implementation [30,42,64].'
    \autocite[549]{NgaiEtAl2008ExaminCriticSucces} & Management \\
External Environment & external environment & `The introduction of change
    management processes is an important requirement in the modern era
    especially when the organizations are facing several business related
    challenges due to the continuous changes in the external environmental
    factors (Saharia and Tucker, 2008).'
    \autocite[51]{BazhairEtAl2015FactorChangeManage} & Management \\
IT Infrastructure & infrastructure & `Lack of management support, poor
    organizational culture, communication problems, financial management
    problems, lack of clarity on scope, project management problems, poor
    project team, ERP software misfit, poor solution implementer performance,
    poor quality of testing, outdated it infrastructure, lack of training,
    highly customized ERP, poor process design, lack of user involvement,
    resistance to change, unrealistic expectations are the main failure factors
    that need to be analyzed in detail.'
    \autocite[3]{CoşkunEtAl2022ERPFailurSystem} & Management \\
IT Infrastructure & infrastructure & `Special considerations during this phase
    might include the need to enhance the ERP interface quality (Aladwani, 2001)
    as well as the need to plan technology infrastructure (Mabert et al.,
    2003).' \autocite[338]{FinneyEtAl2007ERPImplemCompil} & Management \\
IT Infrastructure & infrastructure & `If necessary, infrastructure might need to
    be upgraded or revamped (Kumar et al., 2002; Palaniswamy and Frank, 2002).'
    \autocite[338]{FinneyEtAl2007ERPImplemCompil} & Management \\
IT Infrastructure & infrastructure & `Frequency analysis of CSFs in literature
    CSF category Top management commitment and support Change management BPR and
    software configuration Training and job redesign Project team: the best and
    brightest Implementation strategy and timeframe Consultant selection and
    relationship Visioning and planning Balanced team Project champion
    Communication plan IT infrastructure Managing cultural change Post-
    implementation evaluation Selection of ERP Team morale and motivation
    Vanilla ERP Project management Troubleshooting/crises management Legacy
    system consideration Data conversion and integrity System testing Client
    consultation Project cost planning and management Build a business case
    Empowered decision makers Number of instances cited in literature 25 25 23
    23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very
    often focused on only a specific aspect of the implementation process or a
    specific CSF.' \autocite[340]{FinneyEtAl2007ERPImplemCompil} & Management \\
IT Infrastructure & infrastructure & `These factors include, but not limited to,
    poor consultant effectiveness, ERP software misfit, unrealistic expectations
    from top management concerning the ERP systems, over-reliance on heavy
    customization, poor quality of Business Process Reengineering (BPR), high
    turnover rate of project team members, poor IT Infrastructure, functionality
    problems with the system, unclear concept of the nature and use of the ERP
    system from the users perspective, too tight project schedule, lack of
    formal communication, part-time dedication, etc.'
    \autocite[498]{GargEtAl2013EmpiriStudyon} & Management \\
IT Infrastructure & infrastructure & `There should be an adequate IT
    infrastructure, hardware and networking are crucial for an ERP system's
    success.' \autocite[432]{GargEtAl2014FactorInflueERP} & Management \\
IT Infrastructure & infrastructure & `in Indian retail sector (2) The
    ``Technological'' factor in this study is defined by Implementation
    strategy, Adequate IT infrastructure, Minimal customization and Data
    conversion and accuracy items which may affect the success of ERP
    implementation in Indian retail sector.'
    \autocite[1331]{GargEtAl2015FactorAffectERP} & Management \\
IT Infrastructure & infrastructure & `Extrinsic(3) Organizational CSFs (15)
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    People CSFs (12) Technological CSFs (5) ● Communication within the company ●
    Organization resistance ● Project budget ● Project management ●
    Implementation strategy ● Strategic goals and objectives ● Business process
    reengineering ● organizational culture ● knowledge base of the company ●
    Project planning and control ● Facilitating conditions ● Organization size ●
    The vision of the organization ● Readiness of organizations ● Clarity of
    potential cost ● User involvement ● Selection of vendor/consult ant ●
    Project team ● Top management support ● Training of user ● Trust on vendor ●
    Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender
    ● Highest degree attained ● Selection of ERP package ● IT infrastructure ●
    Data integrity and system testing.'
    \autocite[4686]{HuangEtAl2021CriticSuccesFactor} & Management \\
IT Infrastructure & infrastructure & `The main reasons among many others as to
    why the Chinese enterprises faced the kind of challenges include data
    maintenance and integration problems, system integration problems (Lai,
    2006), the involvement of knowledgeable consultants in respective projects,
    selection of reputable vendors, low implementation experience, weak or
    unsophisticated IT infrastructure, lack of access to knowledge and human
    resource etc., to name some of few.'
    \autocite[43]{KhattakEtAl2013InvestCriticSucces} & Management \\
IT Infrastructure & infrastructure & `The research concludes that: (1) Quality
    (adequacy) and quantity of training and education of personnel/users, role
    and effectiveness of management in reducing the users' resistance, use of
    steering committee for control purpose, top management support or
    involvement, clearly specified goals/objectives/scope regarding ERP system,
    ease of system's use and users' acceptance, vendor's support, project
    management, effective communication among the organizational members and a
    balanced team for ERP implementation are practically considered by the
    successful enterprises in China while planning and going for the
    implementation of the ERP system and are thus critical for the success of
    ERP systems implementation projects, ignoring of which may cause
    implementation failure in the Chinese organizations; (2) Some of the factors
    deemed imperative for ERP systems implementation success in the literature
    like; selection of a right full time project manager with extensive
    experience, presence/existence of a champion, integration of business
    planning with IT/ERP planning, use and role of consultant, change management
    strategy and programs, competency in use of IT and IT infrastructure,
    business...' \autocite[68]{KhattakEtAl2013InvestCriticSucces} & Management
    \\
IT Infrastructure & infrastructure & `According to the literature, the most
    studied factors were: Top Management Support, Effective Communication,
    Training, and Education, Business plan and vision, Project Management, BPR
    management, Change Management, Project team Composition/ Teamwork, Project
    champion, ERP Choices, Technical Implementation, Technological
    Infrastructure, Legacy systems consideration.'
    \autocite[112]{MahrazEtAl2020CompilAnalysCritic} & Management \\
IT Infrastructure & infrastructure & `In addition to the flexibility that they
    prefer to retain, Chinese leaders are less willing to invest in the longterm
    development of company infrastructure such as in technology adoption,
    internal human resources, and processes since they are thrifty, and focus on
    short-term profit maximization [15].'
    \autocite[558]{NgaiEtAl2008ExaminCriticSucces} & Management \\
IT Infrastructure & infrastructure & `Across various developing countries, Huang
    and Palvia (2001) identified many factors of national and organisational
    culture affecting ERP implementation including economic status and growth,
    infrastructure, government regulation, low IT maturity, small firm size, and
    lack of process management and BPR experience.'
    \autocite[88]{RabaaiEtAl2015CulturPerspeon} & Management \\
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IT Infrastructure & infrastructure & `Item Description 1 top management support
    25 application project costs 2 effective communication 26 interdepartmental
    cooperation 3 interdepartmental communication 27 dedicated resources 4 clear
    goal and objectives 28 ERP vendor relations 5 business plan-vision 29
    ongoing vendor support 6 change management 30 use of vendor's development
    tools 7 education on new business process 31 organizational characteristics
    8 user training\& education 32 employee / team morale-motivation 9 user
    acceptance 33 leadership of the project team 10 managing cultural change 34
    project team competence- composition 11 business process reengineering 35
    ERP team work 12 customization 36 steering committee 13 minimal
    customization 37 empowered decision makers 14 software configuration 38 use
    of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Management \\
IT Infrastructure & infrastructure & `Related Sub-Factors 1 (11) Business
    project reengineering (18) Implementation strategies (23) Management of
    expectations (24) Project management (32) Employee / team morale \&
    motivation (33) Leadership of the project team (34) Project team competence
    and composition 2 (14) Software configuration (21) IT infrastructure (28)
    ERP vendor relations (29) Ongoing vendor support (30) Support of vendor
    development tools (38) Use of consultants 3 (40) Project champion (46)
    National culture (47) Country related functional requirements (48)
    Centralization 4 (1) Top management support (2) Effective communication (3)
    Interdepartmental communication (4) Clear goals and objectives (5) Business
    plan \& vision 5 (15) Data accuracy (16) Data integration (42) Data analysis
    and conversion 6 (7) Education on new business processes (8) User training
    and education (9) User acceptance (10) Managing cultural change this result
    maybe, end-users resist changing business processes instead they prefer
    customizations in ERP software.'
    \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Management \\
IT Infrastructure & infrastructure & `Study by Lu, Huang and Heng (2006) reveals
    seven CSFs for the IOS, namely, intensive stimulation, shared vision,
    crossorganizational implementation team, high integration with internal
    information systems, inter-organizational BPR, advanced legacy information
    system and infrastructure and shared industry standard.'
    \autocite[251]{SethEtAl2015DeveloModelSucces} & Management \\
IT Infrastructure & infrastructure & `● IT infrastructure ● System Training and
    knowledge transfer ● Over-dependence on detailed and heavy customization ●
    High turnover rate of project team members ● Business process re-engineering
    ● User's resistance to transform ● ERP system misfit Considering these
    critical factors, specifically affecting the agricultural business sectors
    in Malaysia, there are a few possible suggestions proposed.'
    \autocite[2055]{ShukorEtAl2020EnterpResourPlanni} & Management \\
IT Infrastructure & network & `This unique network architecture provides expert
    care to our patients and a level of confidence in receiving the latest
    medicine has to offer.' \autocite[407]{GargEtAl2014CriticSuccesFactor} &
    Management \\
IT Infrastructure & network & `The most widely cited CSFs were found to be:
    security, project management, communication, compliance, network and the
    reaction of organization.' \autocite[4685]{HuangEtAl2021CriticSuccesFactor}
    & Management \\
IT Infrastructure & network & `Discussion From the systematic literature review
    conducted into Cloud ERP implementation, we found that the top five most
    widely cited CSFs for the successful implementation of Cloud ERP are:
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    security, project management, communication, compliance, and network.'
    \autocite[4689]{HuangEtAl2021CriticSuccesFactor} & Management \\
IT Infrastructure & network & `The technical factors that are critical to
    organizations in their adoption decision of Internet-based inter-
    organizational information systems (IBIS) was also studied by Soliman and
    Janz (2004) and Bouchbout and Alimazighi (2008) and suggested establishing
    costs, network reliability, data security, scalability and complexity as
    main factors that significantly affect the adoption decision of IBIS.'
    \autocite[252]{SethEtAl2015DeveloModelSucces} & Management \\
Knowledge Transfer & knowledge transfer & `Other factors found to affect the
    effectiveness of ERP system implementation, includes external consultant
    support, knowledge transfer, and the technical aspects knowledge transfers,
    all of which are essential during an implementation process.'
    \autocite[673]{AliEtAl2017ERPSystemImplem} & Production \\
Knowledge Transfer & knowledge transfer & `This resulted in the team members
    being overloaded which resulted in a high staff turnover rate, ineffective
    knowledge transfer, and political problems occurred which hindered the
    implementation process.' \autocite[14]{CoşkunEtAl2022ERPFailurSystem} &
    Production \\
Knowledge Transfer & knowledge transfer & `However, as part of this
    relationship, it is imperative to arrange for knowledge transfer from the
    consultant to the company (Al-Mashari et al., 2003) so as to decrease the
    dependency on the vendor/consultant (Skok and Legge, 2002).'
    \autocite[338]{FinneyEtAl2007ERPImplemCompil} & Production \\
Knowledge Transfer & knowledge transfer & `The findings also support the
    proposed hypothesis that training and knowledge transfer has a positive
    impact on SCMIS implementation success (H4b), so organization should arrange
    effective training for the end users of SCMIS for smooth implementation of
    the system.' \autocite[258]{SethEtAl2015DeveloModelSucces} & Production \\
Knowledge Transfer & knowledge transfer & `● IT infrastructure ● System Training
    and knowledge transfer ● Over-dependence on detailed and heavy customization
    ● High turnover rate of project team members ● Business process re-
    engineering ● User's resistance to transform ● ERP system misfit Considering
    these critical factors, specifically affecting the agricultural business
    sectors in Malaysia, there are a few possible suggestions proposed.'
    \autocite[2055]{ShukorEtAl2020EnterpResourPlanni} & Production \\
Leadership & leadership & `Among the factors influencing ERP system acceptance,
    Elkhani et al. (2014) find transformational leadership and self-efficacy
    influence the perceived usefulness of the system.'
    \autocite[680]{AliEtAl2017ERPSystemImplem} & Management \\
Leadership & leadership & `In addition, transformation leadership also
    influences the perceived ease of use via incorporating self-efficacy
    measures.' \autocite[680]{AliEtAl2017ERPSystemImplem} & Management \\
Leadership & leadership & `The respondents from the survey showed that the
    overarching issue is that of leadership and the role it has to play in
    driving the creation of ICT-enabled value and competitiveness.'
    \autocite[107]{Chan2013AustraQuantiSurvey} & Management \\
Leadership & leadership & `Effective leadership is needed in order to achieve
    the desirable goals [35].'
    \autocite[1255]{ChatzoglouEtAl2016AnteceOutcomERP} & Management \\
Leadership & leadership & `Sarker and Lee (2003) empirically proved that strong
    and committed leadership at the top management level is essential to the
    success of an ERP implementation.'
    \autocite[335]{FinneyEtAl2007ERPImplemCompil} & Management \\
Leadership & leadership & `Social capital theory is used for the Cloud ERP
    context because it suggests that the support and commitment from the
    responsible leadership is crucial to set the environment in the
    organization.' \autocite[4690]{HuangEtAl2021CriticSuccesFactor} & Management
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    \\
Leadership & leadership & `Top management support is important for providing
    leadership and allocating resources for such large, complex and expensive
    projects.' \autocite[65]{KhattakEtAl2013InvestCriticSucces} & Management \\
Leadership & leadership & `Project team: consultant, leadership and champion The
    ERP team should consist of the best people in the organization.'
    \autocite[37]{OsmanEtAl2019ERPCriticSucces} & Management \\
Leadership & leadership & `Therefore, the consultant should have multiple skills
    covering functional, technical issues and in-depth knowledge of the
    software[17]- [19] Additionally, project manager appointed should be
    experienced, mix of business and IT knowledge, strong leadership skills and
    have adequate authority to manage all aspects of the project.'
    \autocite[37]{OsmanEtAl2019ERPCriticSucces} & Management \\
Leadership & leadership & `Top management This concept is referred to the need
    of having committed leadership at the top management level, Successful ERP
    implementation very much depends upon active and persistent top management
    involvement, and the importance of top management support in each step in
    all company levels is crucial[20].'
    \autocite[37]{OsmanEtAl2019ERPCriticSucces} & Management \\
Leadership & leadership & `They should also be able to anticipate glitches that
    might occur; this naturally puts a great demand on their knowledge regarding
    ERP systems and the implementation process strategic planning and leadership
    but also of technical expertise.'
    \autocite[37]{OsmanEtAl2019ERPCriticSucces} & Management \\
Leadership & leadership & `The factors identified were management and
    leadership, visioning and planning, ERP package selection, communication
    process management, training and education, project management, legacy
    systems management, system integration, system testing, cultural and
    structural changes, and performance evaluation and management.'
    \autocite[6]{Rabaai2009IdentiCriticSucces} & Management \\
Leadership & leadership & `Additionally, Sarker and Lee (2003) empirically
    proved that strong and committed leadership at the top management level is
    essential to the success of an ERP implementation.'
    \autocite[7]{Rabaai2009IdentiCriticSucces} & Management \\
Leadership & leadership & `Glaser (1999) claimed that senior management must
    demonstrate their commitment by showing strong leadership, limiting the
    initial scope of the project, and working towards achieving an early
    success.' \autocite[7]{Rabaai2009IdentiCriticSucces} & Management \\
Leadership & leadership & `However, the author posited that the main reason for
    an ERP implementation failure stems from a lack of understanding of the
    project and an inability to provide guidance and adequate leadership to
    project team members.' \autocite[8]{Rabaai2009IdentiCriticSucces} &
    Management \\
Leadership & leadership & `Harris shows the prescience of Musselin's (2005)
    analysis of an agenda that ``weakens deliberative bodies and collegial
    decision making'' in favour of developing executive leadership.'
    \autocite[49]{RabaaiEtAl2016SuccesFactorEnterp} & Management \\
Leadership & leadership & `Additionally, Sarker and Lee (2003) empirically
    proved that strong and committed leadership at the top management level is
    essential to the success of an ERP implementation.'
    \autocite[50]{RabaaiEtAl2016SuccesFactorEnterp} & Management \\
Leadership & leadership & `However, the author posited that the main reason for
    an ERP implementation failure stems from a lack of understanding of the
    project and an inability to provide guidance and adequate leadership to
    project team members.' \autocite[52]{RabaaiEtAl2016SuccesFactorEnterp} &
    Management \\
Leadership & leadership & `Item Description 1 top management support 25
    application project costs 2 effective communication 26 interdepartmental
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    cooperation 3 interdepartmental communication 27 dedicated resources 4 clear
    goal and objectives 28 ERP vendor relations 5 business plan-vision 29
    ongoing vendor support 6 change management 30 use of vendor's development
    tools 7 education on new business process 31 organizational characteristics
    8 user training\& education 32 employee / team morale-motivation 9 user
    acceptance 33 leadership of the project team 10 managing cultural change 34
    project team competence- composition 11 business process reengineering 35
    ERP team work 12 customization 36 steering committee 13 minimal
    customization 37 empowered decision makers 14 software configuration 38 use
    of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Management \\
Leadership & leadership & `Related Sub-Factors 1 (11) Business project
    reengineering (18) Implementation strategies (23) Management of expectations
    (24) Project management (32) Employee / team morale \& motivation (33)
    Leadership of the project team (34) Project team competence and composition
    2 (14) Software configuration (21) IT infrastructure (28) ERP vendor
    relations (29) Ongoing vendor support (30) Support of vendor development
    tools (38) Use of consultants 3 (40) Project champion (46) National culture
    (47) Country related functional requirements (48) Centralization 4 (1) Top
    management support (2) Effective communication (3) Interdepartmental
    communication (4) Clear goals and objectives (5) Business plan \& vision 5
    (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6
    (7) Education on new business processes (8) User training and education (9)
    User acceptance (10) Managing cultural change this result maybe, end-users
    resist changing business processes instead they prefer customizations in ERP
    software.' \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Management \\
Leadership & leadership & `The sub-factors represent the fundamental management
    functions introduced by Draft (1991) planning (implementation strategies,
    project management), organizing (business process reengineering, management
    of expectations, project team competence and composition) and leading
    (leadership of project team, employee / team morale and motivation).'
    \autocite[68]{SaygiliEtAl2017EndUsersPercep} & Management \\
Leadership & leadership & `The results supported the findings of Sarker \& Lee
    (2003) who stated that strong and committed leadership, open and honest
    communication, and a balanced and empowered implementation team are
    necessary conditions/precursors for successful ERP application.'
    \autocite[68]{SaygiliEtAl2017EndUsersPercep} & Management \\
Leadership & leadership & `Accordingly, only strong and committed leadership can
    be empirically established as a necessary condition.'
    \autocite[68]{SaygiliEtAl2017EndUsersPercep} & Management \\
Leadership & leadership & `Have a leader in the project team with strong
    leadership skills as well as business, technical and personal managerial
    competencies.' \autocite[74]{SaygiliEtAl2017EndUsersPercep} & Management \\
Leadership & leadership & `Have a project champion who performs the crucial
    functions like leadership, facilitation, and marketing the project to the
    users.' \autocite[75]{SaygiliEtAl2017EndUsersPercep} & Management \\
Leadership & leadership & `Studies have been conducted on the need of having a
    project leader (Bradley, 2008; Ngai et al., 2008), who should possess strong
    leadership skills (Mandal \& Gunasekaran, 2003) as well as business,
    technical and personal managerial competencies (Kraemmergaard \& Rose,
    2002).' \autocite[252]{SethEtAl2015DeveloModelSucces} & Management \\
Leadership & leadership & `Moreover, ERP projects fail due to errors in managing
    the following dimensions: leadership (42%), organizational and cultural
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    (27%), human and people (23%), technology and other issues (8%) [Waters
    2006].' \autocite[2]{ShaulEtAl2013CriticSuccesFactor} & Management \\
Leadership & leadership & `To overcome this misfit, companies can establish a
    framework that takes the primary failures of poor leadership, poor project
    management, poor data quality, poor training, and users' resistance into
    consideration.' \autocite[18]{ShaulEtAl2013CriticSuccesFactor} & Management
    \\
Leadership & leadership & `A lack of leadership can jeopardize implementation
    considerably since it negatively influences the roles and activities of
    other stakeholders [Ngai et al. 2008].'
    \autocite[19]{ShaulEtAl2013CriticSuccesFactor} & Management \\
Leadership & leadership & `Ettlie et al. [2005] argued, based on social learning
    theory, that leadership through exemplary action promotes the successful
    adoption of discontinuous change, especially when the adopting firm's
    general managers demonstrate cohesive support for a new ERP system.'
    \autocite[19]{ShaulEtAl2013CriticSuccesFactor} & Management \\
Leadership & leadership & `Therefore, it is crucial to appoint a senior project
    champion (e.g., CEO) to take on the leadership role of the ERP
    implementation, whose job it is to bring respected and active contributing
    top management promoters into the system selection decision process rather
    than relying on the vendor's or consultant's efforts to overcome
    resistance.' \autocite[19]{ShaulEtAl2013CriticSuccesFactor} & Management \\
Legacy Systems (-) & legacy systems & `ERP systems are often implemented to
    address issues of organisational failure in information coordination due to
    the application of legacy systems (Nah et al., 2003).'
    \autocite[667]{AliEtAl2017ERPSystemImplem} & Management \\
Legacy Systems (-) & legacy systems & `These legacy systems usually offer ageing
    solutions that are difficult to maintain, and no longer meet organisational
    needs (Bradley, 2008).' \autocite[667]{AliEtAl2017ERPSystemImplem} &
    Management \\
Legacy Systems (-) & legacy systems & `Important CSFs identified are: ERP team
    work and composition, top management support, business plan and vision,
    effective communication, project management, project champion, appropriate
    business and legacy systems, change management programmes, culture, BPR,
    minimum customisation, software development, testing, trouble shooting,
    monitoring, and evaluation of performance.'
    \autocite[675]{AliEtAl2017ERPSystemImplem} & Management \\
Legacy Systems (-) & legacy systems & `The factors in the order of ERP system
    importance are: implementation in LEs ● lack of top management commitment; ●
    ineffective communication; ● insufficient training; ● lack of user support;
    ● poor project management; ● relying on legacy systems; ● inter-departmental
    conflicts; ● composition of project team; ● failure in redesigning business
    processes; and ● lack of clarity about required changes.'
    \autocite[681]{AliEtAl2017ERPSystemImplem} & Management \\
Legacy Systems (-) & legacy systems & `This often results in key organisational
    changes, especially in relation to questions of how to integrate ERP
    systems, what to do with legacy systems, and how organisational business
    processes should be revised.' \autocite[682]{AliEtAl2017ERPSystemImplem} &
    Management \\
Legacy Systems (-) & legacy systems & `Lesser, but still important CSFs are,
    having a good business plan, vision, having a project champion, appropriate
    business and legacy systems, change management programmes, culture, BPR,
    minimum customisation, software development, testing, trouble shooting,
    monitoring, and the evaluation of performance (Markus, Axline, Petrie and
    Tanis, 2000; Bancroft et al., 1998; Bingi et al., 1999; Nah et al., 2001;
    Umble et al., 2003; Ehie and Madsen, 2005; Sarkar and Lee, 2003; Umble et
    al., 2003; Kim et al., 2005; Motwani et al., 2005; Nah and Delgado, 2006;
    Maguire et al., 2010).' \autocite[682]{AliEtAl2017ERPSystemImplem} &
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    Management \\
Legacy Systems (-) & legacy systems & `The most common causes of ERP
    implementation failures are a combination of poor planning and high software
    customisation (Scheer and Habbermann, 2000), lack of top management
    commitment; ineffective communication; insufficient training; lack of user
    support, poor project management, relying on legacy systems, inter-
    departmental conflicts, poor composition of project teams, failure in
    redesigning business processes and, lack of clarity about required changes.'
    \autocite[682]{AliEtAl2017ERPSystemImplem} & Management \\
Legacy Systems (-) & legacy systems & `The appropriate management of IT legacy
    systems is a key success factor, whether it is replacement or development of
    interfaces (Lee et al., 2003).'
    \autocite[659]{BarthEtAl2019CriticSuccesFactor} & Management \\
Legacy Systems (-) & legacy systems & `Further success factors for ERP
    implementation projects, such as the selection of a project champion, the
    building of a business case or the appropriate management of legacy systems
    were rated as not very significant for upgrade projects by the
    interviewees.' \autocite[668]{BarthEtAl2019CriticSuccesFactor} & Management
    \\
Legacy Systems (-) & legacy systems & `Gyampah (2007) explained this negative
    relationship by the usage of legacy systems before the implementation of ERP
    systems, because after using legacy systems, learning a harder system is not
    an attractive issue for system users.'
    \autocite[84]{BasogluEtAl2007OrganiAdoptiEnterp} & Management \\
Legacy Systems (-) & legacy systems & `Mabert et al. (2003) findings indicate
    that the most important motivations for implementing an ERP system are to
    replace legacy systems and to standardize systems.'
    \autocite[432]{GargEtAl2014FactorInflueERP} & Management \\
Legacy Systems (-) & legacy systems & `All users move to the new system and
    manual/legacy systems are discontinued.'
    \autocite[440]{GargEtAl2014FactorInflueERP} & Management \\
Legacy Systems (-) & legacy systems & `The data residing in the legacy systems
    needs to be migrated to ERP system.'
    \autocite[440]{GargEtAl2014FactorInflueERP} & Management \\
Legacy Systems (-) & legacy systems & `According to the literature, the most
    studied factors were: Top Management Support, Effective Communication,
    Training, and Education, Business plan and vision, Project Management, BPR
    management, Change Management, Project team Composition/ Teamwork, Project
    champion, ERP Choices, Technical Implementation, Technological
    Infrastructure, Legacy systems consideration.'
    \autocite[112]{MahrazEtAl2020CompilAnalysCritic} & Management \\
Legacy Systems (-) & legacy systems & `Among these factors, ERP Choices,
    Technological Infrastructure, Legacy systems consideration are related to
    the technological dimension, while the other factors are more related to the
    organizational dimension.' \autocite[112]{MahrazEtAl2020CompilAnalysCritic}
    & Management \\
Legacy Systems (-) & legacy systems & `Technical requirements of the
    implementation may also change due to a new version of the software released
    which may create a temporal complexity challenges as well; Legacy systems
    Consideration: There must also be consideration of the current legacy system
    in place as this will be a good indicator of the nature and scale of
    potential problems.' \autocite[114]{MahrazEtAl2020CompilAnalysCritic} &
    Management \\
Legacy Systems (-) & legacy systems & `The findings of our study reveal that
    `appropriate business and IT legacy systems', `business
    plan/vision/goals/justification', `business process reengineering', `change
    management culture and programme', `communication', `ERP teamwork and
    composition', `monitoring and evaluation of performance', `project
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    champion', `project management', `software/system development, testing and
    troubleshooting', `top management support', `data management', `ERP strategy
    and implementation methodology', `ERP vendor', `organizational
    characteristics', `fit between ERP and business/process', `national culture'
    and `country-related functional requirement' were the commonly extracted
    factors across these 10 countries/regions.'
    \autocite[548]{NgaiEtAl2008ExaminCriticSucces} & Management \\
Legacy Systems (-) & legacy systems & `Appropriate business and IT legacy
    systems According to Holland and Light [28], `legacy systems encapsulated
    the existing business processes, organization structure, culture, and
    information technology'.' \autocite[551]{NgaiEtAl2008ExaminCriticSucces} &
    Management \\
Legacy Systems (-) & legacy systems & `It is necessary to evaluate the current
    legacy system, as greater and more complex legacy systems require more
    technological and organizational changes during the transitional period of
    ERP implementation [28,51].' \autocite[551]{NgaiEtAl2008ExaminCriticSucces}
    & Management \\
Legacy Systems (-) & legacy systems & `Nah et al. [51] pointed out that to be
    successful, ERP implementation efforts must overcome issues of complexity
    arising from business and IT legacy systems.'
    \autocite[551]{NgaiEtAl2008ExaminCriticSucces} & Management \\
Legacy Systems (-) & legacy systems & `Software may need to be developed to
    integrate the legacy systems and the ERP systems.'
    \autocite[556]{NgaiEtAl2008ExaminCriticSucces} & Management \\
Legacy Systems (-) & legacy systems & `Since ERP implementation involves a
    complex transition from legacy systems and business processes to an
    integrated infrastructure and common business process throughout a company,
    it is necessary to upgrade or revamp the poorly current IT infrastructure.'
    \autocite[39]{OsmanEtAl2019ERPCriticSucces} & Management \\
Legacy Systems (-) & legacy systems & `2 Legacy systems, in this study context,
    are defined as applications (often standalone) that have been built using a
    prior era's technology and been in the organisation for many years.'
    \autocite[1]{Rabaai2009IdentiCriticSucces} & Management \\
Legacy Systems (-) & legacy systems & `Eleven critical factors were identified,
    such as ERP teamwork and composition, change management program and culture,
    top management support, business plan and vision, business process
    reengineering (BPR) and minimum customisation, effective communications,
    project management, software development, testing and troubleshooting,
    monitoring and evaluating performance, project champion, and appropriate
    business and IT legacy systems.' \autocite[6]{Rabaai2009IdentiCriticSucces}
    & Management \\
Legacy Systems (-) & legacy systems & `The factors identified were management
    and leadership, visioning and planning, ERP package selection, communication
    process management, training and education, project management, legacy
    systems management, system integration, system testing, cultural and
    structural changes, and performance evaluation and management.'
    \autocite[6]{Rabaai2009IdentiCriticSucces} & Management \\
Legacy Systems (-) & legacy systems & `Their recommendation was that QUT replace
    its legacy systems with common integrated systems.'
    \autocite[460]{RabaaiEtAl2009ERPSystemHigher} & Management \\
Legacy Systems (-) & legacy systems & `Disruption to staff and resistance to
    received `best practices', together with required training, data mapping,
    customisations and their support, complexity of integration with remaining
    legacy systems are all commonly reported, and are often ongoing issues post-
    implementation.' \autocite[86]{RabaaiEtAl2015CulturPerspeon} & Management \\
Legacy Systems (-) & legacy systems & `Disruption to staff and resistance to
    received ``best practices'', together with required training, data mapping,
    customizations and their support, complexity of integration with remaining
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    legacy systems are all commonly reported, and are often ongoing issues post-
    implementation.' \autocite[46]{RabaaiEtAl2016SuccesFactorEnterp} &
    Management \\
Legacy Systems (-) & legacy systems & `Although classed as technology related,
    experience shows that business practices developed around legacy systems can
    cause the biggest challenge to a successful enterprise system
    implementation, and despite a product's configurability, they can still
    contain many non-modifiable functionalities that may or may not be
    applicable in a particular university (Yakovlev, 2001) .'
    \autocite[57]{RabaaiEtAl2016SuccesFactorEnterp} & Management \\
Legacy Systems (-) & legacy systems & `IT staff too may have a significant
    learning overhead, an inadequate budget for the training required, an extra
    learning curve (with an ongoing dependence on consultants) significant extra
    work necessitated while legacy systems remain critical.'
    \autocite[58]{RabaaiEtAl2016SuccesFactorEnterp} & Management \\
Legacy Systems (-) & legacy systems & `Certainly efficiency is desirable and
    several CSFs proved relevant in HES - mainly in efficient service delivery,
    IT support, easier access to reliable information by integrating disparate
    legacy systems and reengineered business processes, and data integrity.'
    \autocite[58]{RabaaiEtAl2016SuccesFactorEnterp} & Management \\
Legacy Systems (-) & legacy systems & `Critical success factors identified in
    Turkish studies Author (s) Critical Success Factors Baskak\& Cetisli (2003)
    Top management support, business plan and vision, ERP teamwork, ERP package
    selection, change management, user training and education, effective
    communication, project management, data integration, software testing and
    troubleshooting, appropriate legacy systems, monitoring and evaluation of
    performance.' \autocite[62]{SaygiliEtAl2017EndUsersPercep} & Management \\
Legacy Systems (-) & legacy systems & `Item Description 1 top management support
    25 application project costs 2 effective communication 26 interdepartmental
    cooperation 3 interdepartmental communication 27 dedicated resources 4 clear
    goal and objectives 28 ERP vendor relations 5 business plan-vision 29
    ongoing vendor support 6 change management 30 use of vendor's development
    tools 7 education on new business process 31 organizational characteristics
    8 user training\& education 32 employee / team morale-motivation 9 user
    acceptance 33 leadership of the project team 10 managing cultural change 34
    project team competence- composition 11 business process reengineering 35
    ERP team work 12 customization 36 steering committee 13 minimal
    customization 37 empowered decision makers 14 software configuration 38 use
    of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Management \\
Legacy Systems (-) & legacy systems & `Develop software to integrate legacy
    systems and ERP systems when necessary.'
    \autocite[74]{SaygiliEtAl2017EndUsersPercep} & Management \\
Legacy Systems (-) & legacy systems & `Evaluate the appropriateness of the
    current legacy systems.' \autocite[75]{SaygiliEtAl2017EndUsersPercep} &
    Management \\
Legacy Systems (-) & legacy systems & `Fifth, some legacy systems are not
    replaced, and new in-house systems continue to be developed despite the fact
    that companies have adopted ERP solutions because of the risks and time
    involved in replacing these legacy systems and current processes [Tanriverdi
    et al. 2007].' \autocite[18]{ShaulEtAl2013CriticSuccesFactor} & Management
    \\
Legacy Systems (-) & legacy systems & `Second, consider data analysis decisions,
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    activities, responsibilities, priorities, implemented processes, legacy
    systems, methods, and test plans.'
    \autocite[19]{ShaulEtAl2013CriticSuccesFactor} & Management \\
Management Changes (-) & management changes & `Wilson et al. (1994) Sun et al.
    (1997) Soh et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000)
    and Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons
    and Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline
    Organisational resistance Lack of organisational commitment Poor data
    accuracy Limited user involvement Mismatch between organisation requirements
    and functionalities offered Lack of readiness for integration Lack of focus
    on user education and training Excessive customisation Inadequate
    organisational analysis Costs Project duration Technical challenges
    Management changes Table V. Implementation failure attributes JEIM 30,4 682
    8.' \autocite[681]{AliEtAl2017ERPSystemImplem} & Management \\
Morale \& Motivation & morale & `Bingi et al. (1999) extended this list to
    include, implementation time and cost, ERP vendors, selecting right
    employees, and employee morale.' \autocite[674]{AliEtAl2017ERPSystemImplem}
    & Production \\
Morale \& Motivation & morale & `So, it is crucial for organizations to exploit
    proper mechanisms to recruit and preserve qualified employees, and nurture
    and maintain a high level of employees' morale and motivation among them
    [36,71-75].' \autocite[233]{AmidEtAl2012IdentiClassiERP} & Production \\
Morale \& Motivation & morale & `Here, lack of employees' morale and motivation
    is considered as one of the most important failure factors, which
    intensively relates to governmental structure of large Iranian organization
    by high levels of bureaucracy and heavy regulations.'
    \autocite[233]{AmidEtAl2012IdentiClassiERP} & Production \\
Morale \& Motivation & morale & `The management of the firm can boost the morale
    of the employees and motivate them so that they accept the ERP systems and
    use them in an effective manner for the benefit of the organization (Russo
    and Brandt, 1999).' \autocite[51]{BazhairEtAl2015FactorChangeManage} & Use
    \\
Morale \& Motivation & morale & `This CSF is related to the need for the project
    manager/champion to nurture and maintain a high level of employee morale and
    motivation during the project (Trimmer et al., 2002; Willcocks and Stykes,
    2000; Bingi et al., 1999).' \autocite[337]{FinneyEtAl2007ERPImplemCompil} &
    Production \\
Morale \& Motivation & morale & `Frequency analysis of CSFs in literature CSF
    category Top management commitment and support Change management BPR and
    software configuration Training and job redesign Project team: the best and
    brightest Implementation strategy and timeframe Consultant selection and
    relationship Visioning and planning Balanced team Project champion
    Communication plan IT infrastructure Managing cultural change Post-
    implementation evaluation Selection of ERP Team morale and motivation
    Vanilla ERP Project management Troubleshooting/crises management Legacy
    system consideration Data conversion and integrity System testing Client
    consultation Project cost planning and management Build a business case
    Empowered decision makers Number of instances cited in literature 25 25 23
    23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very
    often focused on only a specific aspect of the implementation process or a
    specific CSF.' \autocite[340]{FinneyEtAl2007ERPImplemCompil} & Production \\
Morale \& Motivation & morale & `So, it is crucial for organizations to exploit
    proper mechanisms to recruit and preserve qualified employees, and nurture
    and maintain a high level of employees' morale and motivation among them
    (Kim, Lee, \& Gosain, 2005; Metaxiotis, Zafeiropoulos, Nikolinakou, \&
    Psarras, 2005; Skok \& Legge, 2002; Umble, et al., 2003; Verville, Bernadas,
    \& Halingten, 2005; Willcocks \& Sykes, 2000).'
    \autocite[45]{RavasanEtAl2014FCM-BaDynamiModeli} & Production \\
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Morale \& Motivation & morale & `Item Description 1 top management support 25
    application project costs 2 effective communication 26 interdepartmental
    cooperation 3 interdepartmental communication 27 dedicated resources 4 clear
    goal and objectives 28 ERP vendor relations 5 business plan-vision 29
    ongoing vendor support 6 change management 30 use of vendor's development
    tools 7 education on new business process 31 organizational characteristics
    8 user training\& education 32 employee / team morale-motivation 9 user
    acceptance 33 leadership of the project team 10 managing cultural change 34
    project team competence- composition 11 business process reengineering 35
    ERP team work 12 customization 36 steering committee 13 minimal
    customization 37 empowered decision makers 14 software configuration 38 use
    of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Production \\
Morale \& Motivation & morale & `Related Sub-Factors 1 (11) Business project
    reengineering (18) Implementation strategies (23) Management of expectations
    (24) Project management (32) Employee / team morale \& motivation (33)
    Leadership of the project team (34) Project team competence and composition
    2 (14) Software configuration (21) IT infrastructure (28) ERP vendor
    relations (29) Ongoing vendor support (30) Support of vendor development
    tools (38) Use of consultants 3 (40) Project champion (46) National culture
    (47) Country related functional requirements (48) Centralization 4 (1) Top
    management support (2) Effective communication (3) Interdepartmental
    communication (4) Clear goals and objectives (5) Business plan \& vision 5
    (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6
    (7) Education on new business processes (8) User training and education (9)
    User acceptance (10) Managing cultural change this result maybe, end-users
    resist changing business processes instead they prefer customizations in ERP
    software.' \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Production \\
Morale \& Motivation & morale & `The sub-factors represent the fundamental
    management functions introduced by Draft (1991) planning (implementation
    strategies, project management), organizing (business process reengineering,
    management of expectations, project team competence and composition) and
    leading (leadership of project team, employee / team morale and
    motivation).' \autocite[68]{SaygiliEtAl2017EndUsersPercep} & Production \\
Morale \& Motivation & motivation & `So, it is crucial for organizations to
    exploit proper mechanisms to recruit and preserve qualified employees, and
    nurture and maintain a high level of employees' morale and motivation among
    them [36,71-75].' \autocite[233]{AmidEtAl2012IdentiClassiERP} & Production
    \\
Morale \& Motivation & motivation & `Here, lack of employees' morale and
    motivation is considered as one of the most important failure factors, which
    intensively relates to governmental structure of large Iranian organization
    by high levels of bureaucracy and heavy regulations.'
    \autocite[233]{AmidEtAl2012IdentiClassiERP} & Production \\
Morale \& Motivation & motivation & `This CSF is related to the need for the
    project manager/champion to nurture and maintain a high level of employee
    morale and motivation during the project (Trimmer et al., 2002; Willcocks
    and Stykes, 2000; Bingi et al., 1999).'
    \autocite[337]{FinneyEtAl2007ERPImplemCompil} & Production \\
Morale \& Motivation & motivation & `Frequency analysis of CSFs in literature
    CSF category Top management commitment and support Change management BPR and
    software configuration Training and job redesign Project team: the best and
    brightest Implementation strategy and timeframe Consultant selection and
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relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.' \autocite[340]{FinneyEtAl2007ERPImplemCompil} & Production \\
Morale \& Motivation & motivation & `Some of the interviewee indicated the absence of adequate incentives like performance recognition, sense of achievement or even monetary rewards for motivational purpose as the reasons of devoting low percentage of their time by the PMs to the ERP system implementation project.' \autocite[53]{KhattakEtAl2013InvestCriticSucces} & Management \\
Morale \& Motivation & motivation & `Therefore, this infers that the presence of a champion in a significant role may be useful for providing guidance \& motivation on the project but it cannot essentially guarantee the ERP project implementation success.' \autocite[59]{KhattakEtAl2013InvestCriticSucces} & Management \\
Morale \& Motivation & motivation & `So, it is crucial for organizations to exploit proper mechanisms to recruit and preserve qualified employees, and nurture and maintain a high level of employees' morale and motivation among them (Kim, Lee, \& Gosain, 2005; Metaxiotis, Zafeiropoulos, Nikolinakou, \& Psarras, 2005; Skok \& Legge, 2002; Umble, et al., 2003; Verville, Bernadas, \& Halingten, 2005; Willcocks \& Sykes, 2000).' \autocite[45]{RavasanEtAl2014FCM-BaDynamiModeli} & Production \\
Morale \& Motivation & motivation & `Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training\& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing \& troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope \& vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Production \\
Morale \& Motivation & motivation & `Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale \& motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan \& vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9)

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    User acceptance (10) Managing cultural change this result maybe, end-users
    resist changing business processes instead they prefer customizations in ERP
    software.' \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Production \\
Morale \& Motivation & motivation & `The sub-factors represent the fundamental
    management functions introduced by Draft (1991) planning (implementation
    strategies, project management), organizing (business process reengineering,
    management of expectations, project team competence and composition) and
    leading (leadership of project team, employee / team morale and
    motivation).' \autocite[68]{SaygiliEtAl2017EndUsersPercep} & Production \\
Organisational Change & change management & `They rate CSFs by a degree of
    importance during ERP implementation as follows: (1) top management support;
    (2) project team competence; (3) inter-departmental cooperation; (4) clear
    goals and objectives; (5) project management; (6) inter-departmental
    communication; (7) management of expectation; (8) project champion; (9)
    vendors' support; (10) careful package selection; (11) data analysis and
    conversion; (12) dedicated resources; (13) use of steering committee; (14)
    user training on software; (15) education on new business processes; (16)
    BPR; (17) minimal customisation; (18) architecture choices; (19) change
    management; (20) partnership with vendors; (21) use of vendors' tool; and
    (22) use of consultant.' \autocite[674]{AliEtAl2017ERPSystemImplem} &
    Management, Collection, Production, Use \\
Organisational Change & change management & `Important CSFs identified are: ERP
    team work and composition, top management support, business plan and vision,
    effective communication, project management, project champion, appropriate
    business and legacy systems, change management programmes, culture, BPR,
    minimum customisation, software development, testing, trouble shooting,
    monitoring, and evaluation of performance.'
    \autocite[675]{AliEtAl2017ERPSystemImplem} & Management, Collection,
    Production, Use \\
Organisational Change & change management & `CSFs identified for successful
    implementation are: a clear understanding of strategic goals, top management
    commitment and support, organisational change management strategy, good
    implementation team, data accuracy, extensive education and training,
    focussed performance measures, and multi-site issues.'
    \autocite[675]{AliEtAl2017ERPSystemImplem} & Management, Collection,
    Production, Use \\
Organisational Change & change management & `They identify causes of ERP
    implementation failure as excessive customisation, dilemma of internal
    integration, poor understanding of business implications and requirements,
    lack of change management strategy, poor data quality, misalignment of IT
    with business, hidden costs, limited training, and lack of top management
    support.' \autocite[681]{AliEtAl2017ERPSystemImplem} & Management,
    Collection, Production, Use \\
Organisational Change & change management & `Lesser, but still important CSFs
    are, having a good business plan, vision, having a project champion,
    appropriate business and legacy systems, change management programmes,
    culture, BPR, minimum customisation, software development, testing, trouble
    shooting, monitoring, and the evaluation of performance (Markus, Axline,
    Petrie and Tanis, 2000; Bancroft et al., 1998; Bingi et al., 1999; Nah et
    al., 2001; Umble et al., 2003; Ehie and Madsen, 2005; Sarkar and Lee, 2003;
    Umble et al., 2003; Kim et al., 2005; Motwani et al., 2005; Nah and Delgado,
    2006; Maguire et al., 2010).' \autocite[682]{AliEtAl2017ERPSystemImplem} &
    Management, Collection, Production, Use \\
Organisational Change & change management & `The findings of this research shows
    that change management activities within the organization can be helpful in
    increasing ERP acceptance within the firm.'
    \autocite[41]{BazhairEtAl2015FactorChangeManage} & Management, Collection,
    Production, Use \\
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Organisational Change & change management & `The results of this study show that
    ``Managers and employees readiness to change'', ``Top management Support'',
    ``Business Process Reengineering'', ``Software and user interface
    development'' and ``Change management'' are five top critical success
    factors.' \autocite[109]{Chan2013AustraQuantiSurvey} & Management,
    Collection, Production, Use \\
Organisational Change & change management & `Frequency analysis of CSFs in
    literature CSF category Top management commitment and support Change
    management BPR and software configuration Training and job redesign Project
    team: the best and brightest Implementation strategy and timeframe
    Consultant selection and relationship Visioning and planning Balanced team
    Project champion Communication plan IT infrastructure Managing cultural
    change Post-implementation evaluation Selection of ERP Team morale and
    motivation Vanilla ERP Project management Troubleshooting/crises management
    Legacy system consideration Data conversion and integrity System testing
    Client consultation Project cost planning and management Build a business
    case Empowered decision makers Number of instances cited in literature 25 25
    23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have
    very often focused on only a specific aspect of the implementation process
    or a specific CSF.' \autocite[340]{FinneyEtAl2007ERPImplemCompil} &
    Management, Collection, Production, Use \\
Organisational Change & change management & `Findings - Results suggest that 9
    critical failure items namely Inadequate resources, Poor User involvement,
    Users' resistance to change, High Attrition rate of project team members,
    Lack of top management commitment, Poor project management, Inadequate
    project team composition, Ineffective organizational change management and
    Unrealistic project scheduling have a high impact on ERP implementation and
    therefore deserve serious attention in the process of ERP implementation.'
    \autocite[496]{GargEtAl2013EmpiriStudyon} & Management, Collection,
    Production, Use \\
Organisational Change & change management & `Pareto chart per factors for ERP
    failure Pareto analysis suggest that nine critical failure items namely
    inadequate resources, poor user involvement, users' resistance to change,
    higher attrition rate of project team members, Lack of top management
    commitment, Poor project management, inadequate project team composition,
    ineffective organizational change management, unrealistic project scheduling
    have a high impact on ERP implementation and therefore deserve serious
    attention in the process of ERP implementation.'
    \autocite[507]{GargEtAl2013EmpiriStudyon} & Management, Collection,
    Production, Use \\
Organisational Change & change management & `P10: The cases partially supported
    this proposition because not in all successful cases, although proficient to
    changes i.e. the change management culture was prevailing in the past, yet
    no attention was given to devise a proper change management strategy
    particularly regarding the ERP system project implementation but still the
    implementation was gone successful.'
    \autocite[60]{KhattakEtAl2013InvestCriticSucces} & Management, Collection,
    Production, Use \\
Organisational Change & change management & `The research concludes that: (1)
    Quality (adequacy) and quantity of training and education of
    personnel/users, role and effectiveness of management in reducing the users'
    resistance, use of steering committee for control purpose, top management
    support or involvement, clearly specified goals/objectives/scope regarding
    ERP system, ease of system's use and users' acceptance, vendor's support,
    project management, effective communication among the organizational members
    and a balanced team for ERP implementation are practically considered by the
    successful enterprises in China while planning and going for the
    implementation of the ERP system and are thus critical for the success of
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    ERP systems implementation projects, ignoring of which may cause
    implementation failure in the Chinese organizations; (2) Some of the factors
    deemed imperative for ERP systems implementation success in the literature
    like; selection of a right full time project manager with extensive
    experience, presence/existence of a champion, integration of business
    planning with IT/ERP planning, use and role of consultant, change management
    strategy and programs, competency in use of IT and IT infrastructure,
    business...' \autocite[68]{KhattakEtAl2013InvestCriticSucces} & Management,
    Collection, Production, Use \\
Organisational Change & change management & `According to the literature, the
    most studied factors were: Top Management Support, Effective Communication,
    Training, and Education, Business plan and vision, Project Management, BPR
    management, Change Management, Project team Composition/ Teamwork, Project
    champion, ERP Choices, Technical Implementation, Technological
    Infrastructure, Legacy systems consideration.'
    \autocite[112]{MahrazEtAl2020CompilAnalysCritic} & Management, Collection,
    Production, Use \\
Organisational Change & change management & `The findings of our study reveal
    that `appropriate business and IT legacy systems', `business
    plan/vision/goals/justification', `business process reengineering', `change
    management culture and programme', `communication', `ERP teamwork and
    composition', `monitoring and evaluation of performance', `project
    champion', `project management', `software/system development, testing and
    troubleshooting', `top management support', `data management', `ERP strategy
    and implementation methodology', `ERP vendor', `organizational
    characteristics', `fit between ERP and business/process', `national culture'
    and `country-related functional requirement' were the commonly extracted
    factors across these 10 countries/regions.'
    \autocite[548]{NgaiEtAl2008ExaminCriticSucces} & Management, Collection,
    Production, Use \\
Organisational Change & change management & `Eleven critical factors were
    identified, such as ERP teamwork and composition, change management program
    and culture, top management support, business plan and vision, business
    process reengineering (BPR) and minimum customisation, effective
    communications, project management, software development, testing and
    troubleshooting, monitoring and evaluating performance, project champion,
    and appropriate business and IT legacy systems.'
    \autocite[6]{Rabaai2009IdentiCriticSucces} & Management, Collection,
    Production, Use \\
Organisational Change & change management & `Based on the work by Markus and
    Tanis (2000), Nah and Delgado organised these factors into seven main
    categories: (1) Business plan and vision; (2) Change management; (3)
    Communication; (4) ERP team composition, skills, and compensation; (5)
    Project management; (6) Top management support and championship; and (7)
    System analysis, selection, and technical implementation.'
    \autocite[6]{Rabaai2009IdentiCriticSucces} & Management, Collection,
    Production, Use \\
Organisational Change & change management & `The whole organisation should be
    aware of the project scope, its objectives and activities as an effective
    communication plan will have a direct impact on the success of the change
    management program (Mendel, 1999).'
    \autocite[10]{Rabaai2009IdentiCriticSucces} & Management, Collection,
    Production, Use \\
Organisational Change & change management & `Indeed ERPs have also proved
    challenging to implement even in Western organisations, often due to an
    underestimated requirement for change management and the repositioning of
    roles and their meaning for actors (Boersma and Kingma, 2005).'
    \autocite[84]{RabaaiEtAl2015CulturPerspeon} & Collection, Use \\
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Organisational Change & change management & `Several essential CSFs have been
    turned into valid and measurable constructs covering both technical and
    organisational factors (Bhatti, 2005), Many studies around this time
    detailed other specific CSFs applicable in implementation, but lacked
    attention to stakeholder perspective and change management aspects (Finney
    and Corbett, 2007).' \autocite[87]{RabaaiEtAl2015CulturPerspeon} &
    Management, Collection, Production, Use \\
Organisational Change & change management & `Organisational factors
    traditionally found to affect implementation success, including management
    support, project communication, change management and team composition do
    not differentiate the public from the private sector, at least in the case
    of Jordan.' \autocite[97]{RabaaiEtAl2015CulturPerspeon} & Management,
    Collection, Production, Use \\
Organisational Change & change management & `Resistance to new technology is a
    noted phenomenon in many cultures, but is one that requires effective change
    management strategies driven from the top.'
    \autocite[98]{RabaaiEtAl2015CulturPerspeon} & Management, Collection,
    Production, Use \\
Organisational Change & change management & `ERP failure factors and categories
    Failure Categories Failure Factors C4: Project Management F1: Conflicts
    between organization and consultants/ vendor C5: Technical F2: High rate of
    system customization C5: Technical F3: Data management issues C2: Human
    Resources F4: Inadequate education and training C2: Human Resources F5:
    Inadequate user involvement C2: Human Resources F6: Ineffective
    communications system C3: Organizational F7: Internal conflicts between
    departments C2: Human Resources F8: Inadequate change management C3:
    Organizational F9: Lack of performance measurement system C3: Organizational
    F10: Misfit between organization culture and ERP system C3: Organizational
    F11: Misfit between organization structure and ERP system C3: Organizational
    F12: Misfits between the IT and business strategies C1: Environmental F13:
    Environmental pressures C3: Organizational F14: Poor business process
    reengineering C1: Environmental F15: Poor consultant C4: Project Management
    F16: Poor project management C4: Project Management F17: Poor risk
    management C3: Organizational F18: Poor top management support C5: Technical
    F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...'
    \autocite[42]{RavasanEtAl2014FCM-BaDynamiModeli} & Management, Collection,
    Production, Use \\
Organisational Change & change management & `Critical success factors identified
    in Turkish studies Author (s) Critical Success Factors Baskak\& Cetisli
    (2003) Top management support, business plan and vision, ERP teamwork, ERP
    package selection, change management, user training and education, effective
    communication, project management, data integration, software testing and
    troubleshooting, appropriate legacy systems, monitoring and evaluation of
    performance.' \autocite[62]{SaygiliEtAl2017EndUsersPercep} & Management,
    Collection, Production, Use \\
Organisational Change & change management & `Item Description 1 top management
    support 25 application project costs 2 effective communication 26
    interdepartmental cooperation 3 interdepartmental communication 27 dedicated
    resources 4 clear goal and objectives 28 ERP vendor relations 5 business
    plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's
    development tools 7 education on new business process 31 organizational
    characteristics 8 user training\& education 32 employee / team morale-
    motivation 9 user acceptance 33 leadership of the project team 10 managing
    cultural change 34 project team competence- composition 11 business process
    reengineering 35 ERP team work 12 customization 36 steering committee 13
    minimal customization 37 empowered decision makers 14 software configuration
    38 use of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
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    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Management, Collection,
    Production, Use \\
Organisational Change & change management & `The proposed model confirms that
    following factors play a significant role during implementation of SCMIS-top
    management support, user involvement, pre-implementation analysis, user
    training, change management, data accuracy and communication.'
    \autocite[248]{SethEtAl2015DeveloModelSucces} & Management, Collection,
    Production, Use \\
Organisational Change & change management & `According to the regression
    analysis on the successful implementation of SCMIS, as shown in Table 8,
    factors that have significant impact at 5 per cent or higher level include
    top management support, user support and involvement, training and
    education, change management, pre-implementation analysis, communication and
    data Table 7.' \autocite[256]{SethEtAl2015DeveloModelSucces} & Management,
    Collection, Production, Use \\
Organisational Change & change management & `Note: Numbers are the beta weight
    and **p < 0.05. confirms that these CSVs has a significant impact, and in
    order to have a successful implementation of SCMIS, top management support,
    user support and involvement, preimplementation analysis, training, change
    management, data accuracy and communication are critical.'
    \autocite[257]{SethEtAl2015DeveloModelSucces} & Management, Collection,
    Production, Use \\
Organisational Change & organisational change & `For instance, Maguire et al.
    (2010) find the introduction of ERP systems often result in key
    organisational changes, which, if not managed carefully, can result in
    conflict within an organisation.' \autocite[673]{AliEtAl2017ERPSystemImplem}
    & Management, Collection, Production, Use \\
Organisational Change & organizational change & `Findings - Results suggest that
    9 critical failure items namely Inadequate resources, Poor User involvement,
    Users' resistance to change, High Attrition rate of project team members,
    Lack of top management commitment, Poor project management, Inadequate
    project team composition, Ineffective organizational change management and
    Unrealistic project scheduling have a high impact on ERP implementation and
    therefore deserve serious attention in the process of ERP implementation.'
    \autocite[496]{GargEtAl2013EmpiriStudyon} & Management, Collection,
    Production, Use \\
Organisational Change & organizational change & `Pareto chart per factors for
    ERP failure Pareto analysis suggest that nine critical failure items namely
    inadequate resources, poor user involvement, users' resistance to change,
    higher attrition rate of project team members, Lack of top management
    commitment, Poor project management, inadequate project team composition,
    ineffective organizational change management, unrealistic project scheduling
    have a high impact on ERP implementation and therefore deserve serious
    attention in the process of ERP implementation.'
    \autocite[507]{GargEtAl2013EmpiriStudyon} & Management, Collection,
    Production, Use \\
Organisational Change & organizational change & `Organizations with experience
    in projects involving IT or organizational change of a similar scale will
    find it much easier to handle the implementation of ERP [3,46].'
    \autocite[555]{NgaiEtAl2008ExaminCriticSucces} & Management, Collection,
    Production, Use \\
Organisational Change & resistance & `The authors report risk factors such as
    loss of qualified IT experts after implementation, inaccurate master
    production schedules, user resistance, loss of ERP-related know-how, lack of
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    vendor support, failure to produce an appropriate material requirement plan,
    and inefficient integration between modules are primary risk factors that
    can affect the viability of ERP projects.'
    \autocite[678]{AliEtAl2017ERPSystemImplem} & Collection, Use \\
Organisational Change & resistance & `Wilson et al. (1994) Sun et al. (1997) Soh
    et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and
    Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and
    Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline
    Organisational resistance Lack of organisational commitment Poor data
    accuracy Limited user involvement Mismatch between organisation requirements
    and functionalities offered Lack of readiness for integration Lack of focus
    on user education and training Excessive customisation Inadequate
    organisational analysis Costs Project duration Technical challenges
    Management changes Table V. Implementation failure attributes JEIM 30,4 682
    8.' \autocite[681]{AliEtAl2017ERPSystemImplem} & Collection, Use \\
Organisational Change & resistance & `As a result of the studies conducted, user
    resistance was found to be one of the significant factors.'
    \autocite[74]{BasogluEtAl2007OrganiAdoptiEnterp} & Management, Collection,
    Use \\
Organisational Change & resistance & `Lack of management support, poor
    organizational culture, communication problems, financial management
    problems, lack of clarity on scope, project management problems, poor
    project team, ERP software misfit, poor solution implementer performance,
    poor quality of testing, outdated it infrastructure, lack of training,
    highly customized ERP, poor process design, lack of user involvement,
    resistance to change, unrealistic expectations are the main failure factors
    that need to be analyzed in detail.'
    \autocite[3]{CoşkunEtAl2022ERPFailurSystem} & Collection, Use \\
Organisational Change & resistance & `In some cases, they have referenced the
    need to build acceptance and commitment to the change (Shanks and Parr,
    2000; Motwani et al., 2002; Bajwa et al., 2004; Holland and Light, 1999;
    Abdinnour-Helm et al., 2003; Kumar et al., 2002) and address resistance
    (Ross and Vitale, 2000; Hong and Kim, 2002; Skok and Legge, 2002); the need
    to communicate (Ribbers and Schoo, 2002); the need to understand benefits
    and drawbacks (Bingi et al., 1999; Aladwani, 2001); the need to educate
    (Siriginidi, 2000a, b); and the need to consider and address organizational
    culture issues (Davison, 2002; Al-Mashari et al., 2003; Aladwani, 2001; Nah
    et al., 2001; Scott and Vessey, 2000; Tarafdar and Roy, 2003; Skok and
    Legge, 2002).' \autocite[342]{FinneyEtAl2007ERPImplemCompil} & Management,
    Collection, Use \\
Organisational Change & resistance & `Findings – Results suggest that 9 critical
    failure items namely Inadequate resources, Poor User involvement, Users'
    resistance to change, High Attrition rate of project team members, Lack of
    top management commitment, Poor project management, Inadequate project team
    composition, Ineffective organizational change management and Unrealistic
    project scheduling have a high impact on ERP implementation and therefore
    deserve serious attention in the process of ERP implementation.'
    \autocite[496]{GargEtAl2013EmpiriStudyon} & Management, Collection, Use \\
Organisational Change & resistance & `Pareto chart per factors for ERP failure
    Pareto analysis suggest that nine critical failure items namely inadequate
    resources, poor user involvement, users' resistance to change, higher
    attrition rate of project team members, Lack of top management commitment,
    Poor project management, inadequate project team composition, ineffective
    organizational change management, unrealistic project scheduling have a high
    impact on ERP implementation and therefore deserve serious attention in the
    process of ERP implementation.' \autocite[507]{GargEtAl2013EmpiriStudyon} &
    Management, Collection, Use \\
Organisational Change & resistance & `Extrinsic(3) Organizational CSFs (15)
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    People CSFs (12) Technological CSFs (5) ● Communication within the company ●
    Organization resistance ● Project budget ● Project management ●
    Implementation strategy ● Strategic goals and objectives ● Business process
    reengineering ● organizational culture ● knowledge base of the company ●
    Project planning and control ● Facilitating conditions ● Organization size ●
    The vision of the organization ● Readiness of organizations ● Clarity of
    potential cost ● User involvement ● Selection of vendor/consult ant ●
    Project team ● Top management support ● Training of user ● Trust on vendor ●
    Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender
    ● Highest degree attained ● Selection of ERP package ● IT infrastructure ●
    Data integrity and system testing.'
    \autocite[4686]{HuangEtAl2021CriticSuccesFactor} & Collection, Use \\
Organisational Change & resistance & `The research concludes that: (1) Quality
    (adequacy) and quantity of training and education of personnel/users, role
    and effectiveness of management in reducing the users' resistance, use of
    steering committee for control purpose, top management support or
    involvement, clearly specified goals/objectives/scope regarding ERP system,
    ease of system's use and users' acceptance, vendor's support, project
    management, effective communication among the organizational members and a
    balanced team for ERP implementation are practically considered by the
    successful enterprises in China while planning and going for the
    implementation of the ERP system and are thus critical for the success of
    ERP systems implementation projects, ignoring of which may cause
    implementation failure in the Chinese organizations; (2) Some of the factors
    deemed imperative for ERP systems implementation success in the literature
    like; selection of a right full time project manager with extensive
    experience, presence/existence of a champion, integration of business
    planning with IT/ERP planning, use and role of consultant, change management
    strategy and programs, competency in use of IT and IT infrastructure,
    business...' \autocite[68]{KhattakEtAl2013InvestCriticSucces} & Collection,
    Use \\
Organisational Change & resistance & `Disruption to staff and resistance to
    received `best practices', together with required training, data mapping,
    customisations and their support, complexity of integration with remaining
    legacy systems are all commonly reported, and are often ongoing issues post-
    implementation.' \autocite[86]{RabaaiEtAl2015CulturPerspeon} & Collection,
    Use \\
Organisational Change & resistance & `Resistance to new technology is a noted
    phenomenon in many cultures, but is one that requires effective change
    management strategies driven from the top.'
    \autocite[98]{RabaaiEtAl2015CulturPerspeon} & Collection, Use \\
Organisational Change & resistance & `Disruption to staff and resistance to
    received ``best practices'', together with required training, data mapping,
    customizations and their support, complexity of integration with remaining
    legacy systems are all commonly reported, and are often ongoing issues post-
    implementation.' \autocite[46]{RabaaiEtAl2016SuccesFactorEnterp} &
    Management, Collection, Use \\
Organisational Change & resistance & `To overcome this misfit, companies can
    establish a framework that takes the primary failures of poor leadership,
    poor project management, poor data quality, poor training, and users'
    resistance into consideration.'
    \autocite[18]{ShaulEtAl2013CriticSuccesFactor} & Management, Collection, Use
    \\
Organisational Change & resistance & `● IT infrastructure ● System Training and
    knowledge transfer ● Over-dependence on detailed and heavy customization ●
    High turnover rate of project team members ● Business process re-engineering
    ● User's resistance to transform ● ERP system misfit Considering these
    critical factors, specifically affecting the agricultural business sectors
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    in Malaysia, there are a few possible suggestions proposed.'
    \autocite[2055]{ShukorEtAl2020EnterpResourPlanni} & Collection, Use \\
Organisational Culture & company culture & `Furthermore, ERP project changes the
    way a company is organized, often acting against the prevailing company
    culture, and any organization planning to introduce an ERP system needs to
    perform a socio-technical analysis before the actual implementation
    (Colmenares et al., 2004).' \autocite[114]{MahrazEtAl2020CompilAnalysCritic}
    & Management, Collection, Production, Use \\
Organisational Culture & organisational culture & `An organisational culture of
    shared values and common objectives is crucial for business success [46].'
    \autocite[1255]{ChatzoglouEtAl2016AnteceOutcomERP} & Management, Collection,
    Production, Use \\
Organisational Culture & organisational culture & `Mehlinger (2006) found that
    the organisational culture of 10 campuses in a university system that
    installed an ERP system, had little or no impact on the successful
    implementation of an ERP system.'
    \autocite[459]{RabaaiEtAl2009ERPSystemHigher} & Management, Collection,
    Production, Use \\
Organisational Culture & organisational culture & `ERP technology is also known
    for imposing rigid norms of workflows and particular practices upon
    workplaces and it is well noted that ERP demands changes to organisational
    culture.' \autocite[84]{RabaaiEtAl2015CulturPerspeon} & Management,
    Collection, Production, Use \\
Organisational Culture & organisational culture & `Organisational culture plays
    a critical role in ERP implementation success.'
    \autocite[84]{RabaaiEtAl2015CulturPerspeon} & Management, Collection,
    Production, Use \\
Organisational Culture & organisational culture & `Across various developing
    countries, Huang and Palvia (2001) identified many factors of national and
    organisational culture affecting ERP implementation including economic
    status and growth, infrastructure, government regulation, low IT maturity,
    small firm size, and lack of process management and BPR experience.'
    \autocite[88]{RabaaiEtAl2015CulturPerspeon} & Management, Collection,
    Production, Use \\
Organisational Culture & organisational culture & `Culture changes however are
    relatively slower, and it is known that societal culture attitudes do help
    shape organisational culture attitudes towards ICT adoption, including in
    the Arab world (Twati and Gammack, 2006).'
    \autocite[89]{RabaaiEtAl2015CulturPerspeon} & Management, Collection,
    Production, Use \\
Organisational Culture & organisational culture & `Whilst many conventional
    interpretations assume that the national cultural values of employees
    directly influence organisational cultures this has been strongly challenged
    (McSweeney, 20022).' \autocite[90]{RabaaiEtAl2015CulturPerspeon} &
    Management, Collection, Production, Use \\
Organisational Culture & organisational culture & `A further lack of fit with
    organisational culture is indicated by the extensive customisations that
    were required in the Jordanian organisations surveyed.'
    \autocite[98]{RabaaiEtAl2015CulturPerspeon} & Management, Collection,
    Production, Use \\
Organisational Culture & organizational culture & `Moreover, future works could
    focus on more specific areas such as change management, project management,
    organizational structure or organizational culture impact in ERP failures so
    that more detailed and in-depth information or deep-rooted failure reasons
    could be identified.' \autocite[234]{AmidEtAl2012IdentiClassiERP} &
    Management, Collection, Production, Use \\
Organisational Culture & organizational culture & `Exploring knowledge sharing
    in ERP implementation: An organizational culture framework.'
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    \autocite[95]{BasogluEtAl2007OrganiAdoptiEnterp} & Management, Collection,
    Production, Use \\
Organisational Culture & organizational culture & `An important insight,
    uncovered by the research was the importance of an open discussion
    environment and organizational culture.'
    \autocite[104]{Chan2013AustraQuantiSurvey} & Management, Collection,
    Production, Use \\
Organisational Culture & organizational culture & `In this study, the dimension
    of ``internal environment'' includes four factors (top management support,
    business process reengineering, organizational culture, change management).'
    \autocite[1255]{ChatzoglouEtAl2016AnteceOutcomERP} & Management, Collection,
    Production, Use \\
Organisational Culture & organizational culture & `Organizations should built an
    organizational culture that is open to change [32], since openness to change
    plays a pivotal role in today's business environment.'
    \autocite[1255]{ChatzoglouEtAl2016AnteceOutcomERP} & Management, Collection,
    Production, Use \\
Organisational Culture & organizational culture & `Lack of management support,
    poor organizational culture, communication problems, financial management
    problems, lack of clarity on scope, project management problems, poor
    project team, ERP software misfit, poor solution implementer performance,
    poor quality of testing, outdated it infrastructure, lack of training,
    highly customized ERP, poor process design, lack of user involvement,
    resistance to change, unrealistic expectations are the main failure factors
    that need to be analyzed in detail.'
    \autocite[3]{CoşkunEtAl2022ERPFailurSystem} & Management, Collection,
    Production, Use \\
Organisational Culture & organizational culture & `After 2016, ``Top Management
    Support'', ``Poor Organizational Culture'', and ``Poor Project Team'' had
    the same and second mostly encountered factors with 14 articles.'
    \autocite[14]{CoşkunEtAl2022ERPFailurSystem} & Management, Collection,
    Production, Use \\
Organisational Culture & organizational culture & `Therefore, the impact of
    organizational culture on ERP projects is inevitable.'
    \autocite[14]{CoşkunEtAl2022ERPFailurSystem} & Management, Collection,
    Production, Use \\
Organisational Culture & organizational culture & `According to results, in
    Asia, while mostly studied failure factor was ``Project Management
    Problems'' with twenty-three articles, ``Poor Organizational Culture''
    followed it with twenty-two articles.'
    \autocite[15]{CoşkunEtAl2022ERPFailurSystem} & Management, Collection,
    Production, Use \\
Organisational Culture & organizational culture & `In addition, in large
    companies, ``Poor Organizational Culture'' is the second most studied
    factor.' \autocite[15]{CoşkunEtAl2022ERPFailurSystem} & Management,
    Collection, Production, Use \\
Organisational Culture & organizational culture & `As expected, education,
    organizational culture, and communication problems come to the fore in
    large-scale companies, while financial problems come to the fore in small-
    scale companies.' \autocite[16]{CoşkunEtAl2022ERPFailurSystem} & Management,
    Collection, Production, Use \\
Organisational Culture & organizational culture & `However, the most important
    factors such as ``Project Management Problems'', ``Lack of Top Management
    Support'', and ``Poor Organizational Culture'' are related to project
    management, and these are completely specific to ERP.'
    \autocite[18]{CoşkunEtAl2022ERPFailurSystem} & Management, Collection,
    Production, Use \\
Organisational Culture & organizational culture & `In some cases, they have
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    referenced the need to build acceptance and commitment to the change (Shanks
    and Parr, 2000; Motwani et al., 2002; Bajwa et al., 2004; Holland and Light,
    1999; Abdinnour-Helm et al., 2003; Kumar et al., 2002) and address
    resistance (Ross and Vitale, 2000; Hong and Kim, 2002; Skok and Legge,
    2002); the need to communicate (Ribbers and Schoo, 2002); the need to
    understand benefits and drawbacks (Bingi et al., 1999; Aladwani, 2001); the
    need to educate (Siriginidi, 2000a, b); and the need to consider and address
    organizational culture issues (Davison, 2002; Al-Mashari et al., 2003;
    Aladwani, 2001; Nah et al., 2001; Scott and Vessey, 2000; Tarafdar and Roy,
    2003; Skok and Legge, 2002).' \autocite[342]{FinneyEtAl2007ERPImplemCompil}
    & Management, Collection, Production, Use \\
Organisational Culture & organizational culture & `Extrinsic(3) Organizational
    CSFs (15) People CSFs (12) Technological CSFs (5) ● Communication within the
    company ● Organization resistance ● Project budget ● Project management ●
    Implementation strategy ● Strategic goals and objectives ● Business process
    reengineering ● organizational culture ● knowledge base of the company ●
    Project planning and control ● Facilitating conditions ● Organization size ●
    The vision of the organization ● Readiness of organizations ● Clarity of
    potential cost ● User involvement ● Selection of vendor/consult ant ●
    Project team ● Top management support ● Training of user ● Trust on vendor ●
    Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender
    ● Highest degree attained ● Selection of ERP package ● IT infrastructure ●
    Data integrity and system testing.'
    \autocite[4686]{HuangEtAl2021CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Organisational Culture & organizational culture & `One of the most probable
    reasons among others may be diversity of the samples that are targeted in
    different regions and countries, which may have different national or
    organizational cultures, government laws or regulations and level of
    economic environments.' \autocite[46]{KhattakEtAl2013InvestCriticSucces} &
    Management, Collection, Production, Use \\
Organisational Culture & organizational culture & `In Pakistani companies,
    change management refers inevitably to enabling change through manipulation
    of or challenges to existing organizational culture.'
    \autocite[66]{KhattakEtAl2013InvestCriticSucces} & Management, Collection,
    Production, Use \\
Organisational Culture & organizational culture & `By contrast, in the Chinese
    context, we contend that the existing organizational culture is usually
    imposed and it is mostly determined by top management as to how and what to
    pursue and the change is accepted only if it is demanded.'
    \autocite[66]{KhattakEtAl2013InvestCriticSucces} & Management, Collection,
    Production, Use \\
Organisational Culture & organizational culture & `This is again because of the
    difference in national and organizational culture between both the
    countries.' \autocite[66]{KhattakEtAl2013InvestCriticSucces} & Management,
    Collection, Production, Use \\
Organisational Culture & organizational culture & `The importance of CSFs in ERP
    project affected by the existing organizational culture, but it will also
    change the current culture.'
    \autocite[119]{MahrazEtAl2020CompilAnalysCritic} & Management, Collection,
    Production, Use \\
Organisational Culture & organizational culture & `Change management culture and
    programme The effective implementation of an ERP system requires change
    management strategies and an understanding of organizational culture.'
    \autocite[551]{NgaiEtAl2008ExaminCriticSucces} & Management, Collection,
    Production, Use \\
Organisational Culture & organizational culture & `National culture Several
    studies have recently pointed out the relevance of national culture to ERP
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    implementation since it is embedded in organizational culture [23,32,88].'
    \autocite[556]{NgaiEtAl2008ExaminCriticSucces} & Management, Collection,
    Production, Use \\
Organisational Culture & organizational culture & `Academic research has pointed
    out the impacts of national culture on organizational culture, and business
    practices.' \autocite[557]{NgaiEtAl2008ExaminCriticSucces} & Management,
    Collection, Production, Use \\
Organisational Culture & organizational culture & `Change management and
    organizational culture are also frequently cited as factors critical to the
    success of the implementation of ERP systems.'
    \autocite[557]{NgaiEtAl2008ExaminCriticSucces} & Management, Collection,
    Production, Use \\
Organisational Culture & organizational culture & `In order to improve the
    chances for the successful implementation of the system, organizations
    should also review their organizational culture and attributes, as well as
    the readiness of management and employees to change before implementing an
    ERP system.' \autocite[558]{NgaiEtAl2008ExaminCriticSucces} & Management,
    Collection, Production, Use \\
Organisational Culture & organizational culture & `Jackson (2011) describes the
    critical influence of organizational culture on IS adoption, detailing a
    failed enterprise-wide implementation in a multi-campus higher education
    college in the UK.' \autocite[48]{RabaaiEtAl2016SuccesFactorEnterp} &
    Management, Collection, Production, Use \\
Organisational Culture & organizational culture & `The contribution of the study
    is that it brings forward the corporate and organizational culture as a
    critical success factor.' \autocite[68]{SaygiliEtAl2017EndUsersPercep} &
    Management, Collection, Production, Use \\
Organisational Culture & organizational culture & `Managing cultural change
    (Jones et al., 2006) and user training and education (Ke \& Wei, 2008),
    remarked by end-users as components of factor five are determinants of
    organizational culture.' \autocite[69]{SaygiliEtAl2017EndUsersPercep} &
    Management, Collection, Production, Use \\
Organisational Culture & organizational culture & `According to this study end-
    users perceive ERP application as an organization wide software project with
    components of organizational culture and users.'
    \autocite[69]{SaygiliEtAl2017EndUsersPercep} & Management, Collection,
    Production, Use \\
Organisational Culture & organizational culture & `Organizational culture is
    another important factor that needs to be considered for the success of the
    information system.' \autocite[250]{SethEtAl2015DeveloModelSucces} &
    Management, Collection, Production, Use \\
Organisational Culture & organizational culture & `The studies by Leidner and
    Kayworth (2006) have shown that the success rate of the system that is being
    implemented increases if the system is aligned with the organizational
    culture.' \autocite[250]{SethEtAl2015DeveloModelSucces} & Management,
    Collection, Production, Use \\
Organisational Culture & organizational culture & `Organizational culture is
    embedded within national culture and it is regarded as a unique factor
    affecting ERP systems implementation success [Zhang et al. 2005].'
    \autocite[9]{ShaulEtAl2013CriticSuccesFactor} & Management, Collection,
    Production, Use \\
Organisational Integration & internal integration & `They identify causes of ERP
    implementation failure as excessive customisation, dilemma of internal
    integration, poor understanding of business implications and requirements,
    lack of change management strategy, poor data quality, misalignment of IT
    with business, hidden costs, limited training, and lack of top management
    support.' \autocite[681]{AliEtAl2017ERPSystemImplem} & Management,
    Collection, Use \\
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Organisational Integration & internal integration & `As well as improving the
    efficiency of an individual company success, BPR can be envisaged as a
    hierarchy of business reconfiguration, from local exploitation through
    internal integration and business process redesign to business network
    redesign and ultimately business scope redefinition (Venkatraman, 1991).'
    \autocite[81]{BasogluEtAl2007OrganiAdoptiEnterp} & Management, Collection,
    Use \\
Organisational Structure & organisation structure & `These systems are often
    `due' for retirement, but still exist within the organisation encapsulating
    the existing business processes, organisation structure, culture, and
    information technology (adopted from Aiken 1995; Tayntor, 2005; Holland and
    Light, 1999).' \autocite[1]{Rabaai2009IdentiCriticSucces} & Management \\
Organisational Structure & organisational structure & `If 92 A.A. Rabaa'i and E.
    AlJamal organisational structures are lacking in rigorous lines of
    authority, as Hutchings and Weir suggest, the culture imposed by ERPs may
    not fit without major customisation or culture change, attitudes to which
    may differ between the traditional public sector and emerging private
    enterprises.' \autocite[91]{RabaaiEtAl2015CulturPerspeon} & Management \\
Organisational Structure & organization structure & `Appropriate business and IT
    legacy systems According to Holland and Light [28], `legacy systems
    encapsulated the existing business processes, organization structure,
    culture, and information technology'.'
    \autocite[551]{NgaiEtAl2008ExaminCriticSucces} & Management \\
Organisational Structure & organization structure & `Also, F11 (misfit between
    organization structure and ERP system) has the weakest path effect from
    failure factors to project failure modes with an average effect of 0.40.'
    \autocite[39]{RavasanEtAl2014FCM-BaDynamiModeli} & Management \\
Organisational Structure & organization structure & `ERP failure factors and
    categories Failure Categories Failure Factors C4: Project Management F1:
    Conflicts between organization and consultants/ vendor C5: Technical F2:
    High rate of system customization C5: Technical F3: Data management issues
    C2: Human Resources F4: Inadequate education and training C2: Human
    Resources F5: Inadequate user involvement C2: Human Resources F6:
    Ineffective communications system C3: Organizational F7: Internal conflicts
    between departments C2: Human Resources F8: Inadequate change management C3:
    Organizational F9: Lack of performance measurement system C3: Organizational
    F10: Misfit between organization culture and ERP system C3: Organizational
    F11: Misfit between organization structure and ERP system C3: Organizational
    F12: Misfits between the IT and business strategies C1: Environmental F13:
    Environmental pressures C3: Organizational F14: Poor business process
    reengineering C1: Environmental F15: Poor consultant C4: Project Management
    F16: Poor project management C4: Project Management F17: Poor risk
    management C3: Organizational F18: Poor top management support C5: Technical
    F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...'
    \autocite[42]{RavasanEtAl2014FCM-BaDynamiModeli} & Management \\
Organisational Structure & organization structure & `Scenario 3 or
    organizational category (e.g., poor top management support, misfit between
    organization structure and ERP system, and misfits between the IT and
    business strategies) is the third ranked scenario among our five scenario.'
    \autocite[45]{RavasanEtAl2014FCM-BaDynamiModeli} & Management \\
Organisational Structure & organizational structure & `Low degrees of management
    tendency to long and midterm planning as another failure factor is a
    probable result of immature organizational structures in Iranian industries,
    which is more explained in organizational component.'
    \autocite[233]{AmidEtAl2012IdentiClassiERP} & Management \\
Organisational Structure & organizational structure & `Moreover, future works
    could focus on more specific areas such as change management, project
    management, organizational structure or organizational culture impact in ERP
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    failures so that more detailed and in-depth information or deep-rooted
    failure reasons could be identified.'
    \autocite[234]{AmidEtAl2012IdentiClassiERP} & Management \\
Organisational Structure & organizational structure & `Depending on the
    organizational structure, economic issues, the intricacy of the firm, time
    constrictions and environmental locations and strategic partners (Markus and
    Tanis, 2000), the suitable execution strategy should be preferred.'
    \autocite[629]{AnjumEtAl2015FactorManipuERP} & Management \\
Organisational Structure & organizational structure & `Related issues will be of
    increasing relevance and importance in the next years for practice though
    (Botta-Genoulaz et al., 2005; Salmeron and Lopez, 2010; Law et al., 2010),
    as in times of rapidly changing business environments and newly emerging
    technologies, companies are not only forced to adapt their business models,
    their strategy and their organizational structures but also their
    information systems.' \autocite[656]{BarthEtAl2019CriticSuccesFactor} &
    Management \\
Organisational Structure & organizational structure & `Organizational structures
    have to be adapted to new or changed processes and necessary staffing
    changes have to be managed to prepare the organization in the best way
    possible for the time after the upgrade (E, H).'
    \autocite[667]{BarthEtAl2019CriticSuccesFactor} & Management \\
Organisational Structure & organizational structure & `BPC is an organizational
    initiative to design business processes to achieve significant improvement
    through changes in the relationships between management, information
    technology, organizational structure, and people (Kettinger et al., 1995).'
    \autocite[81]{BasogluEtAl2007OrganiAdoptiEnterp} & Management \\
Organisational Structure & organizational structure & `Depending on the
    organizational structure, the complexity of the organization, economical
    issues, strategic partners, time constraints and geographical locations
    (Markus and Tanis, 2000), the appropriate implementation strategy should be
    selected.' \autocite[432]{GargEtAl2014FactorInflueERP} & Management \\
Organisational Structure & organizational structure & `P2: The current study
    does not support the second proposition that reporting level of the project
    manager that is an organizational structure in which the project manager
    directly reports to the business division's senior management leads to
    implementation project success.'
    \autocite[53]{KhattakEtAl2013InvestCriticSucces} & Management \\
Organisational Structure & organizational structure & `Existing organizational
    structures and business processes may not fit with the new system, which
    introduces a certain level of change.'
    \autocite[557]{NgaiEtAl2008ExaminCriticSucces} & Management \\
Organisational Structure & organizational structure & `Detailing the case of
    resistance to the introduction of an integrated student information
    management system, Noble and Newman (1993) use the term ``organizational
    invalidity'' to describe when a technology does not fit organizational
    structures.' \autocite[48]{RabaaiEtAl2016SuccesFactorEnterp} & Management \\
Organisational Structure & organizational structure & `The ERP life cycle is
    assumed different from the software life cycle since the ERP package
    involves configuring and adapting the generic functionality to fit
    organizational structures and processes developed by a known vendor.'
    \autocite[20]{ShaulEtAl2013CriticSuccesFactor} & Management \\
Organisational Structure & structure of the organization & `High rate of
    managements' substitution or replacement in top levels of organizations'
    hierarchy and absence of any stable managerial position in governmental
    organizations as a result of governmental structure of the organizations,
    prevent managers to consider any long or even midterm goals and objectives.'
    \autocite[231]{AmidEtAl2012IdentiClassiERP} & Management \\
Organisational Structure & structure of the organization & `The high expectation
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    of achieving all-round cost savings and service improvements is very much
    dependent on how good the chosen ERP system fits to the organizational
    functionalities and how well the tailoring and configuration process of the
    system matches with the business culture, strategy and structure of the
    organization (Rashid, Hossain, \& Patrick, 2002).'
    \autocite[74]{BasogluEtAl2007OrganiAdoptiEnterp} & Management \\
Performance Measurement System & performance measurement & `Lack of performance
    measurement system 24.' \autocite[235]{AmidEtAl2012IdentiClassiERP} &
    Management \\
Performance Measurement System & performance measurement & `ERP failure factors
    and categories Failure Categories Failure Factors C4: Project Management F1:
    Conflicts between organization and consultants/ vendor C5: Technical F2:
    High rate of system customization C5: Technical F3: Data management issues
    C2: Human Resources F4: Inadequate education and training C2: Human
    Resources F5: Inadequate user involvement C2: Human Resources F6:
    Ineffective communications system C3: Organizational F7: Internal conflicts
    between departments C2: Human Resources F8: Inadequate change management C3:
    Organizational F9: Lack of performance measurement system C3: Organizational
    F10: Misfit between organization culture and ERP system C3: Organizational
    F11: Misfit between organization structure and ERP system C3: Organizational
    F12: Misfits between the IT and business strategies C1: Environmental F13:
    Environmental pressures C3: Organizational F14: Poor business process
    reengineering C1: Environmental F15: Poor consultant C4: Project Management
    F16: Poor project management C4: Project Management F17: Poor risk
    management C3: Organizational F18: Poor top management support C5: Technical
    F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...'
    \autocite[42]{RavasanEtAl2014FCM-BaDynamiModeli} & Management \\
Project Management Skills \& Competencies & project management & `The authors
    find that top management support, good project management teams, and good
    communications are the top three most important critical successful factors
    during implementation.' \autocite[666]{AliEtAl2017ERPSystemImplem} &
    Management \\
Project Management Skills \& Competencies & project management & `They rate CSFs
    by a degree of importance during ERP implementation as follows: (1) top
    management support; (2) project team competence; (3) inter-departmental
    cooperation; (4) clear goals and objectives; (5) project management; (6)
    inter-departmental communication; (7) management of expectation; (8) project
    champion; (9) vendors' support; (10) careful package selection; (11) data
    analysis and conversion; (12) dedicated resources; (13) use of steering
    committee; (14) user training on software; (15) education on new business
    processes; (16) BPR; (17) minimal customisation; (18) architecture choices;
    (19) change management; (20) partnership with vendors; (21) use of vendors'
    tool; and (22) use of consultant.'
    \autocite[674]{AliEtAl2017ERPSystemImplem} & Management \\
Project Management Skills \& Competencies & project management & `Important CSFs
    identified are: ERP team work and composition, top management support,
    business plan and vision, effective communication, project management,
    project champion, appropriate business and legacy systems, change management
    programmes, culture, BPR, minimum customisation, software development,
    testing, trouble shooting, monitoring, and evaluation of performance.'
    \autocite[675]{AliEtAl2017ERPSystemImplem} & Management \\
Project Management Skills \& Competencies & project management & `In another
    country-specific study, Amid et al. (2012) examine critical failure factors
    in Iranian companies and identify and classify failure attributes as vendors
    and consultants, human resources, managerial, project management, processes,
    organisational, and technical issues (Table V).'
    \autocite[681]{AliEtAl2017ERPSystemImplem} & Management \\
Project Management Skills \& Competencies & project management & `The most
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    common causes of ERP implementation failures are a combination of poor
    planning and high software customisation (Scheer and Habbermann, 2000), lack
    of top management commitment; ineffective communication; insufficient
    training; lack of user support, poor project management, relying on legacy
    systems, inter-departmental conflicts, poor composition of project teams,
    failure in redesigning business processes and, lack of clarity about
    required changes.' \autocite[682]{AliEtAl2017ERPSystemImplem} & Management
    \\
Project Management Skills \& Competencies & project management & `The study
    founds a significant association of technological, strategic, project
    management, people, top management support and communication factor with ERP
    implementation.' \autocite[628]{AnjumEtAl2015FactorManipuERP} & Management
    \\
Project Management Skills \& Competencies & project management & `Project
    management: The study of Suganthalakshmi and Mothuvelayuthan (2012),
    concluded that the formation of the project team has robust influence on the
    ERP execution process and two significant issues are the combination of
    third-party professionals within the team and the preservation within the
    firm with the pertinent ERP knowledge.'
    \autocite[630]{AnjumEtAl2015FactorManipuERP} & Management \\
Project Management Skills \& Competencies & project management & `Organizations
    should have an effective project management strategy to control the
    implementation process to avoid overrun of budget and ensuring
    implementation on schedule.'
    \autocite[91]{BasogluEtAl2007OrganiAdoptiEnterp} & Management \\
Project Management Skills \& Competencies & project management & `Lack of
    management support, poor organizational culture, communication problems,
    financial management problems, lack of clarity on scope, project management
    problems, poor project team, ERP software misfit, poor solution implementer
    performance, poor quality of testing, outdated it infrastructure, lack of
    training, highly customized ERP, poor process design, lack of user
    involvement, resistance to change, unrealistic expectations are the main
    failure factors that need to be analyzed in detail.'
    \autocite[3]{CoşkunEtAl2022ERPFailurSystem} & Management \\
Project Management Skills \& Competencies & project management & `It should not
    be confused that many factors such as ``budget'', ``communication'', and
    ``project team'' are not examined in the ``Project Management Problems''
    category since they are examined in separate categories because many
    articles analyzed in this study show that project management is handled as
    project coordination.' \autocite[13]{CoşkunEtAl2022ERPFailurSystem} &
    Management \\
Project Management Skills \& Competencies & project management & `Frequency
    analysis of CSFs in literature CSF category Top management commitment and
    support Change management BPR and software configuration Training and job
    redesign Project team: the best and brightest Implementation strategy and
    timeframe Consultant selection and relationship Visioning and planning
    Balanced team Project champion Communication plan IT infrastructure Managing
    cultural change Post-implementation evaluation Selection of ERP Team morale
    and motivation Vanilla ERP Project management Troubleshooting/crises
    management Legacy system consideration Data conversion and integrity System
    testing Client consultation Project cost planning and management Build a
    business case Empowered decision makers Number of instances cited in
    literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3
    Researchers have very often focused on only a specific aspect of the
    implementation process or a specific CSF.'
    \autocite[340]{FinneyEtAl2007ERPImplemCompil} & Management \\
Project Management Skills \& Competencies & project management & `Findings -
    Results suggest that 9 critical failure items namely Inadequate resources,
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    Poor User involvement, Users' resistance to change, High Attrition rate of
    project team members, Lack of top management commitment, Poor project
    management, Inadequate project team composition, Ineffective organizational
    change management and Unrealistic project scheduling have a high impact on
    ERP implementation and therefore deserve serious attention in the process of
    ERP implementation.' \autocite[496]{GargEtAl2013EmpiriStudyon} & Management
    \\
Project Management Skills \& Competencies & project management & `Developing
    software systems is an expensive, and often a difficult process as software
    development projects are affected by a series of problems, such as poor
    project management, cost and schedule overruns, poor quality software and
    under-motivated developers.' \autocite[500]{GargEtAl2013EmpiriStudyon} &
    Management \\
Project Management Skills \& Competencies & project management & `Pareto chart
    per factors for ERP failure Pareto analysis suggest that nine critical
    failure items namely inadequate resources, poor user involvement, users'
    resistance to change, higher attrition rate of project team members, Lack of
    top management commitment, Poor project management, inadequate project team
    composition, ineffective organizational change management, unrealistic
    project scheduling have a high impact on ERP implementation and therefore
    deserve serious attention in the process of ERP implementation.'
    \autocite[507]{GargEtAl2013EmpiriStudyon} & Management \\
Project Management Skills \& Competencies & project management & `The results of
    this research support the suggested hypothesis (H4) that there is positive
    influence between ``Project management'' related items on ERP implementation
    success (b = 0.788, t-value = 17.521, p-value = 0.007).'
    \autocite[438]{GargEtAl2014FactorInflueERP} & Management \\
Project Management Skills \& Competencies & project management & `(4) The
    Project Management factor in this study is defined by team composition,
    project team competence, scope management, expectation management,
    communication within project team and budget control items which may affect
    the success of ERP implementation in Indian retail sector.'
    \autocite[1332]{GargEtAl2015FactorAffectERP} & Management \\
Project Management Skills \& Competencies & project management & `The most
    widely cited CSFs were found to be: security, project management,
    communication, compliance, network and the reaction of organization.'
    \autocite[4685]{HuangEtAl2021CriticSuccesFactor} & Management \\
Project Management Skills \& Competencies & project management & `Extrinsic(3)
    Organizational CSFs (15) People CSFs (12) Technological CSFs (5) ●
    Communication within the company ● Organization resistance ● Project budget
    ● Project management ● Implementation strategy ● Strategic goals and
    objectives ● Business process reengineering ● organizational culture ●
    knowledge base of the company ● Project planning and control ● Facilitating
    conditions ● Organization size ● The vision of the organization ● Readiness
    of organizations ● Clarity of potential cost ● User involvement ● Selection
    of vendor/consult ant ● Project team ● Top management support ● Training of
    user ● Trust on vendor ● Performance expectancy ● Effort expectancy ● Social
    influence ● Age ● Gender ● Highest degree attained ● Selection of ERP
    package ● IT infrastructure ● Data integrity and system testing.'
    \autocite[4686]{HuangEtAl2021CriticSuccesFactor} & Management \\
Project Management Skills \& Competencies & project management & `Discussion
    From the systematic literature review conducted into Cloud ERP
    implementation, we found that the top five most widely cited CSFs for the
    successful implementation of Cloud ERP are: security, project management,
    communication, compliance, and network.'
    \autocite[4689]{HuangEtAl2021CriticSuccesFactor} & Management \\
Project Management Skills \& Competencies & project management & `The research
    concludes that: (1) Quality (adequacy) and quantity of training and
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    education of personnel/users, role and effectiveness of management in
    reducing the users' resistance, use of steering committee for control
    purpose, top management support or involvement, clearly specified
    goals/objectives/scope regarding ERP system, ease of system's use and users'
    acceptance, vendor's support, project management, effective communication
    among the organizational members and a balanced team for ERP implementation
    are practically considered by the successful enterprises in China while
    planning and going for the implementation of the ERP system and are thus
    critical for the success of ERP systems implementation projects, ignoring of
    which may cause implementation failure in the Chinese organizations; (2)
    Some of the factors deemed imperative for ERP systems implementation success
    in the literature like; selection of a right full time project manager with
    extensive experience, presence/existence of a champion, integration of
    business planning with IT/ERP planning, use and role of consultant, change
    management strategy and programs, competency in use of IT and IT
    infrastructure, business...'
    \autocite[68]{KhattakEtAl2013InvestCriticSucces} & Management \\
Project Management Skills \& Competencies & project management & `According to
    the literature, the most studied factors were: Top Management Support,
    Effective Communication, Training, and Education, Business plan and vision,
    Project Management, BPR management, Change Management, Project team
    Composition/ Teamwork, Project champion, ERP Choices, Technical
    Implementation, Technological Infrastructure, Legacy systems consideration.'
    \autocite[112]{MahrazEtAl2020CompilAnalysCritic} & Management \\
Project Management Skills \& Competencies & project management & `The findings
    of our study reveal that `appropriate business and IT legacy systems',
    `business plan/vision/goals/justification', `business process
    reengineering', `change management culture and programme', `communication',
    `ERP teamwork and composition', `monitoring and evaluation of performance',
    `project champion', `project management', `software/system development,
    testing and troubleshooting', `top management support', `data management',
    `ERP strategy and implementation methodology', `ERP vendor', `organizational
    characteristics', `fit between ERP and business/process', `national culture'
    and `country-related functional requirement' were the commonly extracted
    factors across these 10 countries/regions.'
    \autocite[548]{NgaiEtAl2008ExaminCriticSucces} & Management \\
Project Management Skills \& Competencies & project management & `For ERP
    implementation, a clear and welldefined project plan, including the goals,
    objectives, strategy, scope, and schedule of the project, are significant
    issues in project management.'
    \autocite[557]{NgaiEtAl2008ExaminCriticSucces} & Management \\
Project Management Skills \& Competencies & project management & `Other more
    specific aspects of project management, such as setting realistic deadlines
    for implementation, dedicated resources, and the management of expectations
    were suggested in companies in the USA, United Kingdom, Demark, Europe and
    Australia.' \autocite[557]{NgaiEtAl2008ExaminCriticSucces} & Management \\
Project Management Skills \& Competencies & project management & `Eleven
    critical factors were identified, such as ERP teamwork and composition,
    change management program and culture, top management support, business plan
    and vision, business process reengineering (BPR) and minimum customisation,
    effective communications, project management, software development, testing
    and troubleshooting, monitoring and evaluating performance, project
    champion, and appropriate business and IT legacy systems.'
    \autocite[6]{Rabaai2009IdentiCriticSucces} & Management \\
Project Management Skills \& Competencies & project management & `The factors
    identified were management and leadership, visioning and planning, ERP
    package selection, communication process management, training and education,
    project management, legacy systems management, system integration, system
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    testing, cultural and structural changes, and performance evaluation and
    management.' \autocite[6]{Rabaai2009IdentiCriticSucces} & Management \\
Project Management Skills \& Competencies & project management & `Based on the
    work by Markus and Tanis (2000), Nah and Delgado organised these factors
    into seven main categories: (1) Business plan and vision; (2) Change
    management; (3) Communication; (4) ERP team composition, skills, and
    compensation; (5) Project management; (6) Top management support and
    championship; and (7) System analysis, selection, and technical
    implementation.' \autocite[6]{Rabaai2009IdentiCriticSucces} & Management \\
Project Management Skills \& Competencies & project management & `They are the
    few key areas where things must go right. . . '' An earlier paper by this team
    (Ram, Corkindale and Wu, 2013) tabulated the relationships found in the
    literature between CSFs and implementation or performance output success to
    identify four factors consistently emerging as central, namely project
    management, training and education, business process re-engineering and
    system integration.' \autocite[87]{RabaaiEtAl2015CulturPerspeon} &
    Management \\
Project Management Skills \& Competencies & project management & `The critical
    success factors consistently identified in the literature include top
    management support, the presence of a champion, good communication with all
    stakeholders, effective project management, reengineering of business
    processes, an understanding of corporate cultural change, and the use of
    business analysts on the project team.'
    \autocite[88]{RabaaiEtAl2015CulturPerspeon} & Management \\
Project Management Skills \& Competencies & project management & `5 Discussion,
    conclusion and future research Apart from two differences on project
    management aspects, the overwhelming impression is that the CSFs for
    implementation success were similar between the Cultural perspectives on ERP
    implementation in Jordan 97 Jordanian public and the private sector.'
    \autocite[96]{RabaaiEtAl2015CulturPerspeon} & Management \\
Project Management Skills \& Competencies & project management & `Project
    managers, surprised by the scope, size, and complexity of ERP projects may
    fail to initiate the necessary level of detailed project management planning
    and control (Umble and Umble, 2002).'
    \autocite[98]{RabaaiEtAl2015CulturPerspeon} & Management \\
Project Management Skills \& Competencies & project management & `ERP failure
    factors and categories Failure Categories Failure Factors C4: Project
    Management F1: Conflicts between organization and consultants/ vendor C5:
    Technical F2: High rate of system customization C5: Technical F3: Data
    management issues C2: Human Resources F4: Inadequate education and training
    C2: Human Resources F5: Inadequate user involvement C2: Human Resources F6:
    Ineffective communications system C3: Organizational F7: Internal conflicts
    between departments C2: Human Resources F8: Inadequate change management C3:
    Organizational F9: Lack of performance measurement system C3: Organizational
    F10: Misfit between organization culture and ERP system C3: Organizational
    F11: Misfit between organization structure and ERP system C3: Organizational
    F12: Misfits between the IT and business strategies C1: Environmental F13:
    Environmental pressures C3: Organizational F14: Poor business process
    reengineering C1: Environmental F15: Poor consultant C4: Project Management
    F16: Poor project management C4: Project Management F17: Poor risk
    management C3: Organizational F18: Poor top management support C5: Technical
    F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...'
    \autocite[42]{RavasanEtAl2014FCM-BaDynamiModeli} & Management \\
Project Management Skills \& Competencies & project management & `Critical
    success factors identified in Turkish studies Author (s) Critical Success
    Factors Baskak\& Cetisli (2003) Top management support, business plan and
    vision, ERP teamwork, ERP package selection, change management, user
    training and education, effective communication, project management, data
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    integration, software testing and troubleshooting, appropriate legacy
    systems, monitoring and evaluation of performance.'
    \autocite[62]{SaygiliEtAl2017EndUsersPercep} & Management \\
Project Management Skills \& Competencies & project management & `...mentation
    evaluation 22 implementation time 46 national culture 23 management of
    expectations 47 country related functional requirements 24 project
    management 48 centralization' \autocite[64]{SaygiliEtAl2017EndUsersPercep} &
    Management \\
Project Management Skills \& Competencies & project management & `Related Sub-
    Factors 1 (11) Business project reengineering (18) Implementation strategies
    (23) Management of expectations (24) Project management (32) Employee / team
    morale \& motivation (33) Leadership of the project team (34) Project team
    competence and composition 2 (14) Software configuration (21) IT
    infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30)
    Support of vendor development tools (38) Use of consultants 3 (40) Project
    champion (46) National culture (47) Country related functional requirements
    (48) Centralization 4 (1) Top management support (2) Effective communication
    (3) Interdepartmental communication (4) Clear goals and objectives (5)
    Business plan \& vision 5 (15) Data accuracy (16) Data integration (42) Data
    analysis and conversion 6 (7) Education on new business processes (8) User
    training and education (9) User acceptance (10) Managing cultural change
    this result maybe, end-users resist changing business processes instead they
    prefer customizations in ERP software.'
    \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Management \\
Project Management Skills \& Competencies & project management & `To overcome
    this misfit, companies can establish a framework that takes the primary
    failures of poor leadership, poor project management, poor data quality,
    poor training, and users' resistance into consideration.'
    \autocite[18]{ShaulEtAl2013CriticSuccesFactor} & Management \\
Project Management Skills \& Competencies & project manager & `Each new
    functionality has to be discussed in detail and benefits have to be weighed
    against the costs in order to find the best solution for the company.'' A
    special focus was often put on the project manager.'
    \autocite[664]{BarthEtAl2019CriticSuccesFactor} & Management \\
Project Management Skills \& Competencies & project manager & `Despite the
    benefits that can be achieved from a successful ERP implementation, project
    managers focus on the technical and financial aspects of a project and
    neglect to take into account the non-technical issues like people (Genoulaz
    \& Millet, 2006).' \autocite[79]{BasogluEtAl2007OrganiAdoptiEnterp} &
    Management \\
Project Management Skills \& Competencies & project manager & `The propositions
    are as under: P1: Selection of a right full time project manager with
    extensive experience whose sole responsibilities is the project is
    positively related to the successful implementation of ERP project.'
    \autocite[46]{KhattakEtAl2013InvestCriticSucces} & Management \\
Project Management Skills \& Competencies & project manager & `RESULTS AND
    DISCUSSION P1: After going through the summary of the survey results in
    Table 4; it is found that all the successful cases deployed the project
    managers (PMs) with having reasonable business experiences in the past to
    formally look after the ERP system implementation project in their
    respective organizations.' \autocite[53]{KhattakEtAl2013InvestCriticSucces}
    & Management \\
Project Management Skills \& Competencies & project manager & `The research
    concludes that: (1) Quality (adequacy) and quantity of training and
    education of personnel/users, role and effectiveness of management in
    reducing the users' resistance, use of steering committee for control
    purpose, top management support or involvement, clearly specified
    goals/objectives/scope regarding ERP system, ease of system's use and users'
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    acceptance, vendor's support, project management, effective communication
    among the organizational members and a balanced team for ERP implementation
    are practically considered by the successful enterprises in China while
    planning and going for the implementation of the ERP system and are thus
    critical for the success of ERP systems implementation projects, ignoring of
    which may cause implementation failure in the Chinese organizations; (2)
    Some of the factors deemed imperative for ERP systems implementation success
    in the literature like; selection of a right full time project manager with
    extensive experience, presence/existence of a champion, integration of
    business planning with IT/ERP planning, use and role of consultant, change
    management strategy and programs, competency in use of IT and IT
    infrastructure, business...'
    \autocite[68]{KhattakEtAl2013InvestCriticSucces} & Management \\
Project Management Skills \& Competencies & project manager & `Project managers,
    surprised by the scope, size, and complexity of ERP projects may fail to
    initiate the necessary level of detailed project management planning and
    control (Umble and Umble, 2002).'
    \autocite[98]{RabaaiEtAl2015CulturPerspeon} & Management \\
Project Management Skills \& Competencies & project manager & `To ensure ERP
    implementation success the project manager should control the financial
    resources (Frye et al., 2007).' \autocite[98]{RabaaiEtAl2015CulturPerspeon}
    & Management \\
Project Management Skills \& Competencies & project manager & `In Jordan,
    critical decisions and approvals are only taken by top management, thus,
    project managers do not have access or control over financial resources
    without approval from top management.'
    \autocite[98]{RabaaiEtAl2015CulturPerspeon} & Management \\
Project Planning & project planning & `CSFs for successful ERP implementation
    are identified as top management support, presence of a champion, good
    communication with stakeholders, effective project planning, business
    process re-engineering (BPR), and using a business analyst on the project
    team (Bancroft et al., 1998; Bingi et al., 1999).'
    \autocite[674]{AliEtAl2017ERPSystemImplem} & Management \\
Project Planning & project planning & `For a project implementation team, a more
    intimate understanding of CSFs of the various stakeholder groups would make
    it possible to assess the project planning phases and determine if the
    concerns of these relevant groups are being addressed as effectively as
    possible.' \autocite[330]{FinneyEtAl2007ERPImplemCompil} & Management \\
Project Planning & project planning & `Consultants who are not able to
    demonstrate a mastery of professional communication skills, good language
    capability, industrial knowledge, and business analytical skills, are not
    able to provide expertise concerning project planning, ERP systems and BPR
    during ERP implementation and hence cannot act as change agents and fill the
    knowledge gaps (Ngai et al., 2008; Stebel, 1992; Ganesh and Mehta, 2010; Nah
    and Lau, 2001) (for example, communicating with project team members and
    users for acquiring business requirements, conducting BPR and delivering
    professional training).' \autocite[499]{GargEtAl2013EmpiriStudyon} &
    Management \\
Project Planning & project planning & `Among the more important factors are top
    management support and involvement (Duchessi et al., 1989) the need for a
    project champion (Ehie and Madsen, 2005), user training (Stefanou and
    Revanoglou, 2006), technological competence, process delineation, project
    planning, change management and PM (Krumbholz and Maiden, 2001).'
    \autocite[404]{GargEtAl2014CriticSuccesFactor} & Management \\
Project Planning & project planning & `The most important factors are top
    management support and involvement, the need for project champion user
    training, technological competence, process delineation, project planning,
    change management and PM (Umble et al., 2003).'
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    \autocite[404]{GargEtAl2014CriticSuccesFactor} & Management \\
Project Planning & project planning & `Extrinsic(3) Organizational CSFs (15)
    People CSFs (12) Technological CSFs (5) ● Communication within the company ●
    Organization resistance ● Project budget ● Project management ●
    Implementation strategy ● Strategic goals and objectives ● Business process
    reengineering ● organizational culture ● knowledge base of the company ●
    Project planning and control ● Facilitating conditions ● Organization size ●
    The vision of the organization ● Readiness of organizations ● Clarity of
    potential cost ● User involvement ● Selection of vendor/consult ant ●
    Project team ● Top management support ● Training of user ● Trust on vendor ●
    Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender
    ● Highest degree attained ● Selection of ERP package ● IT infrastructure ●
    Data integrity and system testing.'
    \autocite[4686]{HuangEtAl2021CriticSuccesFactor} & Management \\
Project Planning & project planning & `Project planning, forming the project
    team, choosing the ERP package and the ERP implementer, the project sponsor
    and supervisor are among the duties that can only be done by top managers.'
    \autocite[37]{OsmanEtAl2019ERPCriticSucces} & Management \\
Project Planning & project planning & `The project planning must be looked upon
    as a change management initiative not an IT initiative.'
    \autocite[38]{OsmanEtAl2019ERPCriticSucces} & Management \\
Project Planning & project planning & `The success factors related to top
    management's engagement with the project - not just mere involvement,
    project leaders are veterans, change management goes hand-in-hand with
    project planning, satisficing mindset prevails, and team members were
    decision makers.' \autocite[6]{Rabaai2009IdentiCriticSucces} & Management \\
Project Planning & project planning & `Project planning follows from the
    visioning which must be clear enough to specify a project mission and
    objectives, which can then turn into a detailed plan with measurable
    outcomes as implementation proceeds and thus ensure alignment with strategic
    direction.' \autocite[55]{RabaaiEtAl2016SuccesFactorEnterp} & Management \\
Project Planning & project planning & `QUT apply a developed risk management
    framework to manage risk as an integral part of project planning and
    execution, with a regularly updated risk register.'
    \autocite[55]{RabaaiEtAl2016SuccesFactorEnterp} & Management \\
Realistic Expectations & expectation & `They rate CSFs by a degree of importance
    during ERP implementation as follows: (1) top management support; (2)
    project team competence; (3) inter-departmental cooperation; (4) clear goals
    and objectives; (5) project management; (6) inter-departmental
    communication; (7) management of expectation; (8) project champion; (9)
    vendors' support; (10) careful package selection; (11) data analysis and
    conversion; (12) dedicated resources; (13) use of steering committee; (14)
    user training on software; (15) education on new business processes; (16)
    BPR; (17) minimal customisation; (18) architecture choices; (19) change
    management; (20) partnership with vendors; (21) use of vendors' tool; and
    (22) use of consultant.' \autocite[674]{AliEtAl2017ERPSystemImplem} &
    Management, Collection, Use \\
Realistic Expectations & expectation & `In this work, authors mentioned that
    lack of education, BPR, project management, top management support and
    unrealistic expectations of users could lead companies to fail.'
    \autocite[229]{AmidEtAl2012IdentiClassiERP} & Management, Collection, Use \\
Realistic Expectations & expectation & `The involvement of users augments user
    satisfaction and approval by increasing pragmatic expectations about system
    competences (Esteves and Casanovas, 2003).'
    \autocite[630]{AnjumEtAl2015FactorManipuERP} & Management, Collection, Use
    \\
Realistic Expectations & expectation & `It is furthermore crucial that
    expectations and goals are communicated effectively among stakeholders and
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    throughout all levels of an organization, including capabilities as well as
    limitations of the system (Nah and Delgado, 2006), also to prevent
    frustration due to ``over-selling'' (Somers and Nelson, 2004).'
    \autocite[658]{BarthEtAl2019CriticSuccesFactor} & Management, Collection,
    Use \\
Realistic Expectations & expectation & `Nevertheless, I states: ``To qualify a
    project as successful, also time and budget targets have to be met.'' As a
    result of the high complexity of the project and the huge dependency on the
    ERP system, B and J scale down the expectations and consider an ERP upgrade
    project as successful when time targets are nearly met and the company is
    able to continue their business without complications.'
    \autocite[663]{BarthEtAl2019CriticSuccesFactor} & Management, Collection,
    Use \\
Realistic Expectations & expectation & `At the end of the project it has to be
    checked if the project has been executed as planned, if expectations are met
    and if users get along with the upgraded system (I).'
    \autocite[664]{BarthEtAl2019CriticSuccesFactor} & Management, Collection,
    Use \\
Realistic Expectations & expectation & `Another important factor within the
    communication with end users is the management of expectations.'
    \autocite[666]{BarthEtAl2019CriticSuccesFactor} & Management, Collection,
    Use \\
Realistic Expectations & expectation & `The high expectation of achieving all-
    round cost savings and service improvements is very much dependent on how
    good the chosen ERP system fits to the organizational functionalities and
    how well the tailoring and configuration process of the system matches with
    the business culture, strategy and structure of the organization (Rashid,
    Hossain, \& Patrick, 2002).'
    \autocite[74]{BasogluEtAl2007OrganiAdoptiEnterp} & Management, Collection,
    Use \\
Realistic Expectations & expectation & `Many of these companies struggled with
    issues like globalization, acquisition consolidation, process
    standardization, and changes in customer expectations (Genoulaz \& Millet,
    2006).' \autocite[77]{BasogluEtAl2007OrganiAdoptiEnterp} & Management,
    Collection, Use \\
Realistic Expectations & expectation & `In spite of high expectations of the
    organizations purchasing ERP software, most of ERP projects become
    overbudget, late and even fail (Genoulaz \& Millet, 2006; Griffith et al.,
    1999; Hong \& Kim, 2002; Kumar et al., 2003; Seewald, 2002).'
    \autocite[79]{BasogluEtAl2007OrganiAdoptiEnterp} & Management, Collection,
    Use \\
Realistic Expectations & expectation & `Unless the organizational context and
    the information technology are made compatible, waiting for people to use
    new technologies will not be more than an expectation.'
    \autocite[80]{BasogluEtAl2007OrganiAdoptiEnterp} & Management, Collection,
    Use \\
Realistic Expectations & expectation & `Lack of management support, poor
    organizational culture, communication problems, financial management
    problems, lack of clarity on scope, project management problems, poor
    project team, ERP software misfit, poor solution implementer performance,
    poor quality of testing, outdated it infrastructure, lack of training,
    highly customized ERP, poor process design, lack of user involvement,
    resistance to change, unrealistic expectations are the main failure factors
    that need to be analyzed in detail.'
    \autocite[3]{CoşkunEtAl2022ERPFailurSystem} & Management, Collection, Use \\
Realistic Expectations & expectation & `Failures can be defined in other forms
    like exceeding budget, lagging behind projected schedule, and failure to
    match expectations.' \autocite[498]{GargEtAl2013EmpiriStudyon} & Management,
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    Collection, Use \\
Realistic Expectations & expectation & `These factors include, but not limited
    to, poor consultant effectiveness, ERP software misfit, unrealistic
    expectations from top management concerning the ERP systems, over-reliance
    on heavy customization, poor quality of Business Process Reengineering
    (BPR), high turnover rate of project team members, poor IT Infrastructure,
    functionality problems with the system, unclear concept of the nature and
    use of the ERP system from the users perspective, too tight project
    schedule, lack of formal communication, part-time dedication, etc.'
    \autocite[498]{GargEtAl2013EmpiriStudyon} & Management, Collection, Use \\
Realistic Expectations & expectation & `UI increase user satisfaction and
    acceptance by developing realistic expectations about system capabilities
    (Esteves et al., 2003).' \autocite[408]{GargEtAl2014CriticSuccesFactor} &
    Management, Collection, Use \\
Realistic Expectations & expectation & `Nah et al. (2003) stated that one of the
    biggest problems ERP project leaders face comes not from the implementation
    itself, but from expectations of board members, senior staff, and other key
    stakeholders.' \autocite[431]{GargEtAl2014FactorInflueERP} & Management,
    Collection, Use \\
Realistic Expectations & expectation & `Expectations at every level need to be
    communicated.' \autocite[434]{GargEtAl2014FactorInflueERP} & Management,
    Collection, Use \\
Realistic Expectations & expectation & `Management of communication, education
    and expectations are critical throughout the organization (Wee, 2000).'
    \autocite[434]{GargEtAl2014FactorInflueERP} & Management, Collection, Use \\
Realistic Expectations & expectation & `Training and education helps to improve
    the quality of ERP project results and to meet user's expectations.'
    \autocite[440]{GargEtAl2014FactorInflueERP} & Management, Collection, Use \\
Realistic Expectations & expectation & `Also it is extremely important to set
    the right expectations with all the project stakeholders so that there
    should not be any scope creep at the time of user acceptance test.'
    \autocite[441]{GargEtAl2014FactorInflueERP} & Management, Collection, Use \\
Realistic Expectations & expectation & `User involvement increase user
    satisfaction and acceptance by developing realistic expectations about
    system capabilities (Esteves and Casanovas, 2003).'
    \autocite[1320]{GargEtAl2015FactorAffectERP} & Management, Collection, Use
    \\
Realistic Expectations & expectation & `(4) The Project Management factor in
    this study is defined by team composition, project team competence, scope
    management, expectation management, communication within project team and
    budget control items which may affect the success of ERP implementation in
    Indian retail sector.' \autocite[1332]{GargEtAl2015FactorAffectERP} &
    Management, Collection, Use \\
Realistic Expectations & expectation & `So it is advisable for the manager to
    clearly define the scope statement and set the right expectations with all
    the project stakeholders so that there should not be any scope creep at the
    time of user acceptance test (UAT).'
    \autocite[1333]{GargEtAl2015FactorAffectERP} & Management, Collection, Use
    \\
Realistic Expectations & expectation & `The size of the organization is
    significant to ERP implementation since expectations and requirements differ
    among SMEs and large organizations [16].'
    \autocite[4688]{HuangEtAl2021CriticSuccesFactor} & Management, Collection,
    Use \\
Realistic Expectations & expectation & `While, most of the existing papers only
    focus on the SMEs' context [14, 19-21, 23, 25], the size of the organization
    is a significant factor in assessing ERP implementation since expectations
    and requirements largely differ between SMEs and large organizations [39].'
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    \autocite[4690]{HuangEtAl2021CriticSuccesFactor} & Management, Collection,
    Use \\
Realistic Expectations & expectation & `Unrealistic expectations and incompetent
    or unskilled project teams frequently lead to implementation failures (Xue
    et al., 2005).ERP team-work and its composition is important throughout the
    ERP implementation project and it should be balanced, cross-sectional and
    comprised of a mix of external consultants and organizational internal staff
    so that the internal staff can develop the necessary technical skills and
    expertise for designing, implementing, maintaining and enhancing the ERP
    systems.' \autocite[65]{KhattakEtAl2013InvestCriticSucces} & Management,
    Collection, Use \\
Realistic Expectations & expectation & `The Involvement of users may develop
    rational expectations about system capabilities and thus may increase their
    satisfaction level and easy acceptance of the new system (Esteves et al.,
    2003).' \autocite[67]{KhattakEtAl2013InvestCriticSucces} & Management,
    Collection, Use \\
Realistic Expectations & expectation & `It includes communication of
    expectations at all company levels, formal presentations by the project
    teams and the announcement of the project results within the company and
    announcement of the project scope, objectives and activities before the
    project onset (Doom et al., 2010); Training and Education: Training and
    Education are considered actually as one of the preconditions of building a
    successful ERP system.' \autocite[112]{MahrazEtAl2020CompilAnalysCritic} &
    Management, Collection, Use \\
Realistic Expectations & expectation & `Some of the ERP project team roles and
    responsibilities below are often utilized to put together the winning team
    who will achieve implementation success that meets the expectations and
    objectives set forth by the company management.'
    \autocite[113]{MahrazEtAl2020CompilAnalysCritic} & Management, Collection,
    Use \\
Realistic Expectations & expectation & `ERP implementation projects are very
    different from most other types of projects such as building construction,
    network installation, etc., and defining success seems to be more difficult
    than defining successful financial expectations, or manufacturing objectives
    (Romney, 2012).' \autocite[117]{MahrazEtAl2020CompilAnalysCritic} &
    Management, Collection, Use \\
Realistic Expectations & expectation & `Other more specific aspects of project
    management, such as setting realistic deadlines for implementation,
    dedicated resources, and the management of expectations were suggested in
    companies in the USA, United Kingdom, Demark, Europe and Australia.'
    \autocite[557]{NgaiEtAl2008ExaminCriticSucces} & Management, Collection, Use
    \\
Realistic Expectations & expectation & `For example; continuing decline in
    perstudent government funding and support, globalisation and global
    competition, continuing growth in student numbers, changes in the nature of
    academic work, increasing competition between institutions, government
    pressure to improve operational efficiency, and generally diverse and
    shifting expectations of stakeholders.'
    \autocite[1]{Rabaai2009IdentiCriticSucces} & Management, Collection, Use \\
Realistic Expectations & expectation & `The top five were top management
    support, project team competence, project champion, inter-departmental
    cooperation, and clear goals and expectations.'
    \autocite[6]{Rabaai2009IdentiCriticSucces} & Management, Collection, Use \\
Realistic Expectations & expectation & `ERP Systems in the HE Sector
    Environmental pressures for change on Universities worldwide (McCredie and
    Updegrove, 1999) and in Australia (Beekhuyzen et al, 2002) have been many
    (Crase et al, 2000; Brown, 2002); including: continuing decline in per-
    student government funding and support, globalisation and global
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    competition, continuing growth in student numbers, changes in the nature of
    academic work, increasing competition between institutions, government
    pressure to improve operational efficiency, and generally diverse and
    shifting expectations of stakeholders.'
    \autocite[457]{RabaaiEtAl2009ERPSystemHigher} & Management, Collection, Use
    \\
Realistic Expectations & expectation & `Watson et al. (2003) for example argued
    that state government officials have three major concerns with ERP
    implementations: high expectations of ERP systems; inconsistent technology
    diffusion within government agencies and (despite the standardisation ERP
    implementations warrant), many agencies are effectively independent.'
    \autocite[85]{RabaaiEtAl2015CulturPerspeon} & Management, Collection, Use \\
Realistic Expectations & expectation & `One of the first articles that has been
    published about analyzing ERP failures returned to Umble and Umble (2002) in
    which they mentioned that lack of education, BPR, project management, top
    management support and unrealistic expectations of users could lead
    companies to fail.' \autocite[35]{RavasanEtAl2014FCM-BaDynamiModeli} &
    Management, Collection, Use \\
Realistic Expectations & expectation & `b) Expectation failure, when the IT
    systems do not live up to user expectations.'
    \autocite[39]{RavasanEtAl2014FCM-BaDynamiModeli} & Management, Collection,
    Use \\
Realistic Expectations & expectation & `Generally, it is believed that the
    project is partially failed because it is not completed within time and/or
    budget (process failure), the ERP systems do not live up to user
    expectations (expectation failure), and there is no match between ERP
    systems and the planned objectives (correspondence failure).'
    \autocite[40]{RavasanEtAl2014FCM-BaDynamiModeli} & Management, Collection,
    Use \\
Realistic Expectations & expectation & `...mentation evaluation 22
    implementation time 46 national culture 23 management of expectations 47
    country related functional requirements 24 project management 48
    centralization' \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Management,
    Collection, Use \\
Realistic Expectations & expectation & `Related Sub-Factors 1 (11) Business
    project reengineering (18) Implementation strategies (23) Management of
    expectations (24) Project management (32) Employee / team morale \&
    motivation (33) Leadership of the project team (34) Project team competence
    and composition 2 (14) Software configuration (21) IT infrastructure (28)
    ERP vendor relations (29) Ongoing vendor support (30) Support of vendor
    development tools (38) Use of consultants 3 (40) Project champion (46)
    National culture (47) Country related functional requirements (48)
    Centralization 4 (1) Top management support (2) Effective communication (3)
    Interdepartmental communication (4) Clear goals and objectives (5) Business
    plan \& vision 5 (15) Data accuracy (16) Data integration (42) Data analysis
    and conversion 6 (7) Education on new business processes (8) User training
    and education (9) User acceptance (10) Managing cultural change this result
    maybe, end-users resist changing business processes instead they prefer
    customizations in ERP software.'
    \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Management, Collection, Use
    \\
Realistic Expectations & expectation & `The sub-factors represent the
    fundamental management functions introduced by Draft (1991) planning
    (implementation strategies, project management), organizing (business
    process reengineering, management of expectations, project team competence
    and composition) and leading (leadership of project team, employee / team
    morale and motivation).' \autocite[68]{SaygiliEtAl2017EndUsersPercep} &
    Management, Collection, Use \\
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Realistic Expectations & expectation & `Identify user and organizational
    expectations effectively.' \autocite[74]{SaygiliEtAl2017EndUsersPercep} &
    Management, Collection, Use \\
Realistic Expectations & expectation & `However, a substantial number of
    companies still suffer from ERP project overruns because of unrealistic
    expectations concerning duration and resources allocated [Panorama 2011].'
    \autocite[9]{ShaulEtAl2013CriticSuccesFactor} & Management, Collection, Use
    \\
Realistic Expectations & expectation & `Unrealistic expectations on the part of
    vendors and the intangible system prior to implementation can lead companies
    to misinterpret the role of senior management in ERP implementation
    outcomes.' \autocite[19]{ShaulEtAl2013CriticSuccesFactor} & Management,
    Collection, Use \\
Realistic Expectations & expectation & `Therefore, there is still a need to
    continuously adapt and enhance an ERP after its first implementation to
    resolve users' dissatisfactions regarding expectations and the requirement
    backlog given the gap between actual functionality and benefits promised by
    the ERP [Motiwalla and Thompson 2009].'
    \autocite[22]{ShaulEtAl2013CriticSuccesFactor} & Management, Collection, Use
    \\
Realistic Expectations & expectation & `Managing user acceptance towards
    enterprise resource planning (erp) systems: Understanding the dissonance
    between user expectations and managerial policies.'
    \autocite[34]{ShaulEtAl2013CriticSuccesFactor} & Management, Collection, Use
    \\
Regulatory \& Statutory Compliance & compliance & `According to the same
    research, 14% of organizations implement ERP systems for ensure compliance,
    14% for make employees' jobs easier, and 13% better integrate systems across
    locations [17].' \autocite[2]{CoşkunEtAl2022ERPFailurSystem} & Management \\
Regulatory \& Statutory Compliance & compliance & `Also, they need to meet the
    compliance requirement of their customers' countries.'
    \autocite[425]{GargEtAl2014FactorInflueERP} & Management \\
Regulatory \& Statutory Compliance & compliance & `The most widely cited CSFs
    were found to be: security, project management, communication, compliance,
    network and the reaction of organization.'
    \autocite[4685]{HuangEtAl2021CriticSuccesFactor} & Management \\
Regulatory \& Statutory Compliance & compliance & `Compliance represents the
    next widely cited CSF [14, 15, 20, 23].'
    \autocite[4685]{HuangEtAl2021CriticSuccesFactor} & Management \\
Regulatory \& Statutory Compliance & compliance & `Since organizations are
    uncertain about the means of data storage in the cloud, Cloudbased data
    archiving, segregation of duties, global compliance standards, and
    regulations are considered as the three major issues in compliance [23].'
    \autocite[4685]{HuangEtAl2021CriticSuccesFactor} & Management \\
Regulatory \& Statutory Compliance & compliance & `According to Gupta and Misra
    [14] and Gupta, Misra [15], high compliance will increase the possibility of
    successful implementation.' \autocite[4685]{HuangEtAl2021CriticSuccesFactor}
    & Management \\
Regulatory \& Statutory Compliance & compliance & `Compliance also has a
    moderating effect between organizational factors and successful
    implementation of Cloud ERP [23].'
    \autocite[4685]{HuangEtAl2021CriticSuccesFactor} & Management \\
Regulatory \& Statutory Compliance & compliance & `Extrinsic factors include:
    compliance, network, and security as these CSFs are primarily controlled by
    the cloud vendor.' \autocite[4686]{HuangEtAl2021CriticSuccesFactor} &
    Management \\
Regulatory \& Statutory Compliance & compliance & `For example, Gupta and Misra
    [14] analyzed statistics and found network, compliance, security is
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    positively related to the success of Cloud ERP implementation.'
    \autocite[4687]{HuangEtAl2021CriticSuccesFactor} & Management \\
Regulatory \& Statutory Compliance & compliance & `For example, Gupta and Misra
    [23] found the moderating effects of security, compliance and Page 4687
    network on the relationship between organizational factors and successful
    implementation of Cloud ERP.'
    \autocite[4687]{HuangEtAl2021CriticSuccesFactor} & Management \\
Regulatory \& Statutory Compliance & compliance & `Discussion From the
    systematic literature review conducted into Cloud ERP implementation, we
    found that the top five most widely cited CSFs for the successful
    implementation of Cloud ERP are: security, project management,
    communication, compliance, and network.'
    \autocite[4689]{HuangEtAl2021CriticSuccesFactor} & Management \\
Regulatory \& Statutory Compliance & compliance & `Globalization,
    centralization, and regulatory compliance were the key drivers for continued
    ERP investment among LEs.' \autocite[9]{ShaulEtAl2013CriticSuccesFactor} &
    Management \\
Regulatory \& Statutory Compliance & regulation & `Here, lack of employees'
    morale and motivation is considered as one of the most important failure
    factors, which intensively relates to governmental structure of large
    Iranian organization by high levels of bureaucracy and heavy regulations.'
    \autocite[233]{AmidEtAl2012IdentiClassiERP} & Management \\
Regulatory \& Statutory Compliance & regulation & `These regulations limit
    managers to recruit and preserve qualified employees due to low levels of
    salaries and wages paid to employees in governmental structures.'
    \autocite[233]{AmidEtAl2012IdentiClassiERP} & Management \\
Regulatory \& Statutory Compliance & regulation & `Since organizations are
    uncertain about the means of data storage in the cloud, Cloudbased data
    archiving, segregation of duties, global compliance standards, and
    regulations are considered as the three major issues in compliance [23].'
    \autocite[4685]{HuangEtAl2021CriticSuccesFactor} & Management \\
Regulatory \& Statutory Compliance & regulation & `One of the most probable
    reasons among others may be diversity of the samples that are targeted in
    different regions and countries, which may have different national or
    organizational cultures, government laws or regulations and level of
    economic environments.' \autocite[46]{KhattakEtAl2013InvestCriticSucces} &
    Management \\
Regulatory \& Statutory Compliance & regulation & `Cultures, government
    regulations, and economic environments differ among countries, a fact that
    raises some issues and challenges for ERP implementation [30,42,64].'
    \autocite[549]{NgaiEtAl2008ExaminCriticSucces} & Management \\
Regulatory \& Statutory Compliance & regulation & `Sheu et al. [64] pointed out
    that the differences in language, culture, politics, government,
    regulations, management style, and labour skills have an impact on ERP
    implementation practices in different countries.'
    \autocite[549]{NgaiEtAl2008ExaminCriticSucces} & Management \\
Regulatory \& Statutory Compliance & regulation & `Across various developing
    countries, Huang and Palvia (2001) identified many factors of national and
    organisational culture affecting ERP implementation including economic
    status and growth, infrastructure, government regulation, low IT maturity,
    small firm size, and lack of process management and BPR experience.'
    \autocite[88]{RabaaiEtAl2015CulturPerspeon} & Management \\
Regulatory \& Statutory Compliance & regulation & `Regardless of the misfit
    between organization structure and ERP system, some of Iranian unique
    regulations and procedures especially in finance processes, prevent
    international systems to being implemented and fitted in Iranian
    organizations or force vendors to do major customizations in their systems.'
    \autocite[45]{RavasanEtAl2014FCM-BaDynamiModeli} & Management \\
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Regulatory \& Statutory Compliance & regulatory & `Although national
    characteristics can and do play a role in shaping organisational practices,
    Bhaskaran and Sukumaran (2007) found that other factors, such as the
    economic and regulatory environment of organisations, were more influential
    than simple cultural `stereotyping' based on business managers'
    nationality.' \autocite[90]{RabaaiEtAl2015CulturPerspeon} & Management \\
Regulatory \& Statutory Compliance & regulatory & `Globalization,
    centralization, and regulatory compliance were the key drivers for continued
    ERP investment among LEs.' \autocite[9]{ShaulEtAl2013CriticSuccesFactor} &
    Management \\
Resource Availability & availability of resource & `In addition, the effect of
    other on-going projects, including the management of the overall IT
    architecture, and nonavailability of resources for organisational
    transformation, are the most critical risk factors for implementation.'
    \autocite[678]{AliEtAl2017ERPSystemImplem} & Production \\
Resource Availability & dedicated resource & `They rate CSFs by a degree of
    importance during ERP implementation as follows: (1) top management support;
    (2) project team competence; (3) inter-departmental cooperation; (4) clear
    goals and objectives; (5) project management; (6) inter-departmental
    communication; (7) management of expectation; (8) project champion; (9)
    vendors' support; (10) careful package selection; (11) data analysis and
    conversion; (12) dedicated resources; (13) use of steering committee; (14)
    user training on software; (15) education on new business processes; (16)
    BPR; (17) minimal customisation; (18) architecture choices; (19) change
    management; (20) partnership with vendors; (21) use of vendors' tool; and
    (22) use of consultant.' \autocite[674]{AliEtAl2017ERPSystemImplem} &
    Production \\
Resource Availability & dedicated resource & `Other more specific aspects of
    project management, such as setting realistic deadlines for implementation,
    dedicated resources, and the management of expectations were suggested in
    companies in the USA, United Kingdom, Demark, Europe and Australia.'
    \autocite[557]{NgaiEtAl2008ExaminCriticSucces} & Production \\
Resource Availability & dedicated resource & `Item Description 1 top management
    support 25 application project costs 2 effective communication 26
    interdepartmental cooperation 3 interdepartmental communication 27 dedicated
    resources 4 clear goal and objectives 28 ERP vendor relations 5 business
    plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's
    development tools 7 education on new business process 31 organizational
    characteristics 8 user training\& education 32 employee / team morale-
    motivation 9 user acceptance 33 leadership of the project team 10 managing
    cultural change 34 project team competence- composition 11 business process
    reengineering 35 ERP team work 12 customization 36 steering committee 13
    minimal customization 37 empowered decision makers 14 software configuration
    38 use of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Production \\
Resource Availability & human resource & `They observe that vendor failure to
    adapt to local culture, BPR, managing local human resources, lack of
    information sharing, failure to understand cultural characteristics, lack of
    adaptability towards a changing business and economic environment, lack of
    cost control functions (i.e. adapting to changing costs), and failure to
    understand technical issues are the main causes of ERP implementation
    failure.' \autocite[681]{AliEtAl2017ERPSystemImplem} & Production \\
Resource Availability & human resource & `In another country-specific study,
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    Amid et al. (2012) examine critical failure factors in Iranian companies and
    identify and classify failure attributes as vendors and consultants, human
    resources, managerial, project management, processes, organisational, and
    technical issues (Table V).' \autocite[681]{AliEtAl2017ERPSystemImplem} &
    Production \\
Resource Availability & human resource & `Another important failure factor in
    Iran relates to poor human resources management.'
    \autocite[232]{AmidEtAl2012IdentiClassiERP} & Production \\
Resource Availability & human resource & `One of the main problems in ERP
    projects is focusing on technical and financial aspects of a project and
    neglecting to take into account the non-technical issues like people [70],
    while many ERP studies indicate that failure is largely due to human
    resources issues, rather than technical factors.'
    \autocite[232]{AmidEtAl2012IdentiClassiERP} & Production \\
Resource Availability & human resource & `Then, using 236 questionnaire data
    gathered through ERP project team members in Iranian industries, which
    completely failed in their ERP projects implementation, a robust EFA is
    conducted and 35 finally failure factors are categorized into seven main
    components consist of ``Vendor and Consultant'', ``Human Resources'',
    ``Managerial'' ``Project Management'', ``Processes'', ``Organizational'' and
    ``Technical''.' \autocite[233]{AmidEtAl2012IdentiClassiERP} & Production \\
Resource Availability & human resource & `In other words, for an organization to
    work correctly, holistic, fast, and reliable information is required in
    production, human resources, purchasing, financial affairs, and stock [1].'
    \autocite[1]{CoşkunEtAl2022ERPFailurSystem} & Production \\
Resource Availability & human resource & `Therefore, it involves not only the
    planning stages, but also the allocating of responsibilities to various
    players, the definition of milestones and critical paths, training and human
    resource planning, and finally the determination of measures of success (Nah
    et al., 2001).' \autocite[336]{FinneyEtAl2007ERPImplemCompil} & Production
    \\
Resource Availability & human resource & `The main reasons among many others as
    to why the Chinese enterprises faced the kind of challenges include data
    maintenance and integration problems, system integration problems (Lai,
    2006), the involvement of knowledgeable consultants in respective projects,
    selection of reputable vendors, low implementation experience, weak or
    unsophisticated IT infrastructure, lack of access to knowledge and human
    resource etc., to name some of few.'
    \autocite[43]{KhattakEtAl2013InvestCriticSucces} & Production \\
Resource Availability & human resource & `In addition to the flexibility that
    they prefer to retain, Chinese leaders are less willing to invest in the
    longterm development of company infrastructure such as in technology
    adoption, internal human resources, and processes since they are thrifty,
    and focus on short-term profit maximization [15].'
    \autocite[558]{NgaiEtAl2008ExaminCriticSucces} & Production \\
Resource Availability & human resource & `ERP failure factors and categories
    Failure Categories Failure Factors C4: Project Management F1: Conflicts
    between organization and consultants/ vendor C5: Technical F2: High rate of
    system customization C5: Technical F3: Data management issues C2: Human
    Resources F4: Inadequate education and training C2: Human Resources F5:
    Inadequate user involvement C2: Human Resources F6: Ineffective
    communications system C3: Organizational F7: Internal conflicts between
    departments C2: Human Resources F8: Inadequate change management C3:
    Organizational F9: Lack of performance measurement system C3: Organizational
    F10: Misfit between organization culture and ERP system C3: Organizational
    F11: Misfit between organization structure and ERP system C3: Organizational
    F12: Misfits between the IT and business strategies C1: Environmental F13:
    Environmental pressures C3: Organizational F14: Poor business process
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    reengineering C1: Environmental F15: Poor consultant C4: Project Management
    F16: Poor project management C4: Project Management F17: Poor risk
    management C3: Organizational F18: Poor top management support C5: Technical
    F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...'
    \autocite[42]{RavasanEtAl2014FCM-BaDynamiModeli} & Production \\
Resource Availability & human resource & `Organizations where top management is
    committed for IOS and relationship are bound to be more successful as they
    will allocate more financial and human resources.'
    \autocite[250]{SethEtAl2015DeveloModelSucces} & Production \\
Resource Availability & human resource & `Furthermore, there can also be
    underestimation of the available funding, human resources, hardware,
    suppliers, consultants and physical space, etc., needed for successful ERP
    implementation.' \autocite[19]{ShaulEtAl2013CriticSuccesFactor} & Production
    \\
Resource Availability & inadequate resource & `Findings – Results suggest that 9
    critical failure items namely Inadequate resources, Poor User involvement,
    Users' resistance to change, High Attrition rate of project team members,
    Lack of top management commitment, Poor project management, Inadequate
    project team composition, Ineffective organizational change management and
    Unrealistic project scheduling have a high impact on ERP implementation and
    therefore deserve serious attention in the process of ERP implementation.'
    \autocite[496]{GargEtAl2013EmpiriStudyon} & Production \\
Resource Availability & inadequate resource & `Pareto chart per factors for ERP
    failure Pareto analysis suggest that nine critical failure items namely
    inadequate resources, poor user involvement, users' resistance to change,
    higher attrition rate of project team members, Lack of top management
    commitment, Poor project management, inadequate project team composition,
    ineffective organizational change management, unrealistic project scheduling
    have a high impact on ERP implementation and therefore deserve serious
    attention in the process of ERP implementation.'
    \autocite[507]{GargEtAl2013EmpiriStudyon} & Production \\
Resource Availability & inadequate resource & `Inadequate resources for ERP
    Implementation at Indian retail sector lead to many problems and failure so
    it should not be there.' \autocite[507]{GargEtAl2013EmpiriStudyon} &
    Production \\
Resource Availability & inadequate resource & `This is a similar finding to
    research conducted by Rockford Consulting Group; the greatest reason for ERP
    implementation failures is inadequate resources.'
    \autocite[507]{GargEtAl2013EmpiriStudyon} & Production \\
Resource Availability & inadequate resource & `Inadequate resources and a lack
    of financial and political support will inevitably lead to failure as
    demonstrated in some case studies [87].'
    \autocite[557]{NgaiEtAl2008ExaminCriticSucces} & Production \\
Resource Availability & resource availability & `Therefore, Yusuf et al. (2004)
    recommend that before embarking on an ERP implementation, organisations
    should not only plan for resource availability, but also assess its
    readiness for ERP system the changes that ERP implementation will unleash.'
    \autocite[676]{AliEtAl2017ERPSystemImplem} & Production \\
Scope: Features & ERP package & `Extrinsic(3) Organizational CSFs (15) People
    CSFs (12) Technological CSFs (5) ● Communication within the company ●
    Organization resistance ● Project budget ● Project management ●
    Implementation strategy ● Strategic goals and objectives ● Business process
    reengineering ● organizational culture ● knowledge base of the company ●
    Project planning and control ● Facilitating conditions ● Organization size ●
    The vision of the organization ● Readiness of organizations ● Clarity of
    potential cost ● User involvement ● Selection of vendor/consult ant ●
    Project team ● Top management support ● Training of user ● Trust on vendor ●
    Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender
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    ● Highest degree attained ● Selection of ERP package ● IT infrastructure ●
    Data integrity and system testing.'
    \autocite[4686]{HuangEtAl2021CriticSuccesFactor} & Management \\
Scope: Features & ERP package & `The factors identified were management and
    leadership, visioning and planning, ERP package selection, communication
    process management, training and education, project management, legacy
    systems management, system integration, system testing, cultural and
    structural changes, and performance evaluation and management.'
    \autocite[6]{Rabaai2009IdentiCriticSucces} & Management \\
Scope: Features & ERP package & `Critical success factors identified in Turkish
    studies Author (s) Critical Success Factors Baskak\& Cetisli (2003) Top
    management support, business plan and vision, ERP teamwork, ERP package
    selection, change management, user training and education, effective
    communication, project management, data integration, software testing and
    troubleshooting, appropriate legacy systems, monitoring and evaluation of
    performance.' \autocite[62]{SaygiliEtAl2017EndUsersPercep} & Management \\
Scope: Features & ERP package & `Item Description 1 top management support 25
    application project costs 2 effective communication 26 interdepartmental
    cooperation 3 interdepartmental communication 27 dedicated resources 4 clear
    goal and objectives 28 ERP vendor relations 5 business plan-vision 29
    ongoing vendor support 6 change management 30 use of vendor's development
    tools 7 education on new business process 31 organizational characteristics
    8 user training\& education 32 employee / team morale-motivation 9 user
    acceptance 33 leadership of the project team 10 managing cultural change 34
    project team competence- composition 11 business process reengineering 35
    ERP team work 12 customization 36 steering committee 13 minimal
    customization 37 empowered decision makers 14 software configuration 38 use
    of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Management \\
Scope: Features & ERP product selection & `(1) The ``Organizational'' factor in
    this study is defined by business plan and vision, top management support,
    business process reengineering, ERP product selection, selection of
    implementation partner/consultants and enterprise wide communication plan
    items which may affect the success of ERP implementation in Indian retail
    sector.' \autocite[1327]{GargEtAl2015FactorAffectERP} & Management \\
Scope: Features & clarity on scope & `Lack of management support, poor
    organizational culture, communication problems, financial management
    problems, lack of clarity on scope, project management problems, poor
    project team, ERP software misfit, poor solution implementer performance,
    poor quality of testing, outdated it infrastructure, lack of training,
    highly customized ERP, poor process design, lack of user involvement,
    resistance to change, unrealistic expectations are the main failure factors
    that need to be analyzed in detail.'
    \autocite[3]{CoşkunEtAl2022ERPFailurSystem} & Management \\
Scope: Features & features & `E also points out that responsible persons should
    think thoroughly about features to be implemented and their benefits.'
    \autocite[664]{BarthEtAl2019CriticSuccesFactor} & Management \\
Scope: Features & features & `In the project context, the term scope can refer
    to two components[41]: Product scope the features and functions that
    characterized product, service or result Project scope its work performed to
    deliver a product, service or result with specific features and functions
    From requirement and product scope definitions can conclude requirement is a
    component of product scope and the functional requirements are typically
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    used in IT and software development to describe product scope, also project
    scope management deal with requirement collecting which help to validate and
    control scope[42].' \autocite[39]{OsmanEtAl2019ERPCriticSucces} & Management
    \\
Scope: Features & functional & `Markus, Tanis and Fenema (2000) and Markus,
    Axline, Petrie and Tanis (2000) identify several other attributes associated
    with implementation failures, including approaching ERP implementation from
    an excessively functional perspective, inappropriately cutting the scope of
    the project, eliminating user training, inadequate testing, not improving
    business processes initially, underestimating data quality problems, fragile
    human capital, and data migration problems.'
    \autocite[680]{AliEtAl2017ERPSystemImplem} & Management \\
Scope: Features & functional & `Wilson et al. (1994) Sun et al. (1997) Soh et
    al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and Markus,
    Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and Adam
    (2005) Kamhawi (2008) Changes in personnel Lack of discipline Organisational
    resistance Lack of organisational commitment Poor data accuracy Limited user
    involvement Mismatch between organisation requirements and functionalities
    offered Lack of readiness for integration Lack of focus on user education
    and training Excessive customisation Inadequate organisational analysis
    Costs Project duration Technical challenges Management changes Table V.
    Implementation failure attributes JEIM 30,4 682 8.'
    \autocite[681]{AliEtAl2017ERPSystemImplem} & Management \\
Scope: Features & functional & `Each new functionality has to be discussed in
    detail and benefits have to be weighed against the costs in order to find
    the best solution for the company.'' A special focus was often put on the
    project manager.' \autocite[664]{BarthEtAl2019CriticSuccesFactor} &
    Management \\
Scope: Features & functional & `Sheu, Chae, and Yang (2004) and Soh, Kien, and
    Tay-Yap (2000) highlighted that there are often significant gaps between the
    functionality offered by ERP systems and the one required by the adopting
    company.' \autocite[80]{BasogluEtAl2007OrganiAdoptiEnterp} & Management \\
Scope: Features & functional & `These factors include, but not limited to, poor
    consultant effectiveness, ERP software misfit, unrealistic expectations from
    top management concerning the ERP systems, over-reliance on heavy
    customization, poor quality of Business Process Reengineering (BPR), high
    turnover rate of project team members, poor IT Infrastructure, functionality
    problems with the system, unclear concept of the nature and use of the ERP
    system from the users perspective, too tight project schedule, lack of
    formal communication, part-time dedication, etc.'
    \autocite[498]{GargEtAl2013EmpiriStudyon} & Management \\
Scope: Features & functional & `The findings of our study reveal that
    `appropriate business and IT legacy systems', `business
    plan/vision/goals/justification', `business process reengineering', `change
    management culture and programme', `communication', `ERP teamwork and
    composition', `monitoring and evaluation of performance', `project
    champion', `project management', `software/system development, testing and
    troubleshooting', `top management support', `data management', `ERP strategy
    and implementation methodology', `ERP vendor', `organizational
    characteristics', `fit between ERP and business/process', `national culture'
    and `country-related functional requirement' were the commonly extracted
    factors across these 10 countries/regions.'
    \autocite[548]{NgaiEtAl2008ExaminCriticSucces} & Management \\
Scope: Features & functional & `In the project context, the term scope can refer
    to two components[41]: Product scope the features and functions that
    characterized product, service or result Project scope its work performed to
    deliver a product, service or result with specific features and functions
    From requirement and product scope definitions can conclude requirement is a
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    component of product scope and the functional requirements are typically
    used in IT and software development to describe product scope, also project
    scope management deal with requirement collecting which help to validate and
    control scope[42].' \autocite[39]{OsmanEtAl2019ERPCriticSucces} & Management
    \\
Scope: Features & functional & `Although classed as technology related,
    experience shows that business practices developed around legacy systems can
    cause the biggest challenge to a successful enterprise system
    implementation, and despite a product's configurability, they can still
    contain many non-modifiable functionalities that may or may not be
    applicable in a particular university (Yakovlev, 2001) .'
    \autocite[57]{RabaaiEtAl2016SuccesFactorEnterp} & Management \\
Scope: Features & functional & `...mentation evaluation 22 implementation time
    46 national culture 23 management of expectations 47 country related
    functional requirements 24 project management 48 centralization'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Management \\
Scope: Features & functional & `Related Sub-Factors 1 (11) Business project
    reengineering (18) Implementation strategies (23) Management of expectations
    (24) Project management (32) Employee / team morale \& motivation (33)
    Leadership of the project team (34) Project team competence and composition
    2 (14) Software configuration (21) IT infrastructure (28) ERP vendor
    relations (29) Ongoing vendor support (30) Support of vendor development
    tools (38) Use of consultants 3 (40) Project champion (46) National culture
    (47) Country related functional requirements (48) Centralization 4 (1) Top
    management support (2) Effective communication (3) Interdepartmental
    communication (4) Clear goals and objectives (5) Business plan \& vision 5
    (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6
    (7) Education on new business processes (8) User training and education (9)
    User acceptance (10) Managing cultural change this result maybe, end-users
    resist changing business processes instead they prefer customizations in ERP
    software.' \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Management \\
Scope: Features & lack of fit & `A further lack of fit with organisational
    culture is indicated by the extensive customisations that were required in
    the Jordanian organisations surveyed.'
    \autocite[98]{RabaaiEtAl2015CulturPerspeon} & Management \\
Scope: Features & package selection & `They rate CSFs by a degree of importance
    during ERP implementation as follows: (1) top management support; (2)
    project team competence; (3) inter-departmental cooperation; (4) clear goals
    and objectives; (5) project management; (6) inter-departmental
    communication; (7) management of expectation; (8) project champion; (9)
    vendors' support; (10) careful package selection; (11) data analysis and
    conversion; (12) dedicated resources; (13) use of steering committee; (14)
    user training on software; (15) education on new business processes; (16)
    BPR; (17) minimal customisation; (18) architecture choices; (19) change
    management; (20) partnership with vendors; (21) use of vendors' tool; and
    (22) use of consultant.' \autocite[674]{AliEtAl2017ERPSystemImplem} &
    Management \\
Scope: Features & package selection & `The factors identified were management
    and leadership, visioning and planning, ERP package selection, communication
    process management, training and education, project management, legacy
    systems management, system integration, system testing, cultural and
    structural changes, and performance evaluation and management.'
    \autocite[6]{Rabaai2009IdentiCriticSucces} & Management \\
Scope: Features & package selection & `Critical success factors identified in
    Turkish studies Author (s) Critical Success Factors Baskak\& Cetisli (2003)
    Top management support, business plan and vision, ERP teamwork, ERP package
    selection, change management, user training and education, effective
    communication, project management, data integration, software testing and
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troubleshooting, appropriate legacy systems, monitoring and evaluation of performance.' \autocite[62]{SaygiliEtAl2017EndUsersPercep} & Management \\
Scope: Features & package selection & `Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training\& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing \& troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope \& vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Management \\
Scope: Features & requirements & `They identify causes of ERP implementation failure as excessive customisation, dilemma of internal integration, poor understanding of business implications and requirements, lack of change management strategy, poor data quality, misalignment of IT with business, hidden costs, limited training, and lack of top management support.' \autocite[681]{AliEtAl2017ERPSystemImplem} & Management \\
Scope: Features & requirements & `Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline Organisational resistance Lack of organisational commitment Poor data accuracy Limited user involvement Mismatch between organisation requirements and functionalities offered Lack of readiness for integration Lack of focus on user education and training Excessive customisation Inadequate organisational analysis Costs Project duration Technical challenges Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.' \autocite[681]{AliEtAl2017ERPSystemImplem} & Management \\
Scope: Features & requirements & `Consultants who are not able to demonstrate a mastery of professional communication skills, good language capability, industrial knowledge, and business analytical skills, are not able to provide expertise concerning project planning, ERP systems and BPR during ERP implementation and hence cannot act as change agents and fill the knowledge gaps (Ngai et al., 2008; Stebel, 1992; Ganesh and Mehta, 2010; Nah and Lau, 2001) (for example, communicating with project team members and users for acquiring business requirements, conducting BPR and delivering professional training).' \autocite[499]{GargEtAl2013EmpiriStudyon} & Management \\
Scope: Features & requirements & `In the project context, the term scope can refer to two components[41]: Product scope the features and functions that characterized product, service or result Project scope its work performed to deliver a product, service or result with specific features and functions From requirement and product scope definitions can conclude requirement is a component of product scope and the functional requirements are typically used in IT and software development to describe product scope, also project scope management deal with requirement collecting which help to validate and control scope[42].' \autocite[39]{OsmanEtAl2019ERPCriticSucces} & Management \\
Scope: Features & requirements & `Considerable customisation was required in

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    both sectors, and the traditional style of management in Jordan did not fit
    well with the requirements for successful implementation.'
    \autocite[83]{RabaaiEtAl2015CulturPerspeon} & Management \\
Scope: Features & requirements & `...mentation evaluation 22 implementation time
    46 national culture 23 management of expectations 47 country related
    functional requirements 24 project management 48 centralization'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Management \\
Scope: Features & requirements & `This paper offers the following suggestion in
    order to achieve the best out of an ERP system for Malaysia agriculture
    industry: ● A company must concentrate on the quality of integration between
    company requirements and ERP scope.'
    \autocite[2055]{ShukorEtAl2020EnterpResourPlanni} & Management \\
Scope: Features & scope management & `(4) The Project Management factor in this
    study is defined by team composition, project team competence, scope
    management, expectation management, communication within project team and
    budget control items which may affect the success of ERP implementation in
    Indian retail sector.' \autocite[1332]{GargEtAl2015FactorAffectERP} &
    Management \\
Scope: Features & scope management & `In the project context, the term scope can
    refer to two components[41]: Product scope the features and functions that
    characterized product, service or result Project scope its work performed to
    deliver a product, service or result with specific features and functions
    From requirement and product scope definitions can conclude requirement is a
    component of product scope and the functional requirements are typically
    used in IT and software development to describe product scope, also project
    scope management deal with requirement collecting which help to validate and
    control scope[42].' \autocite[39]{OsmanEtAl2019ERPCriticSucces} & Management
    \\
Scope: Features & selection of ERP & `Frequency analysis of CSFs in literature
    CSF category Top management commitment and support Change management BPR and
    software configuration Training and job redesign Project team: the best and
    brightest Implementation strategy and timeframe Consultant selection and
    relationship Visioning and planning Balanced team Project champion
    Communication plan IT infrastructure Managing cultural change Post-
    implementation evaluation Selection of ERP Team morale and motivation
    Vanilla ERP Project management Troubleshooting/crises management Legacy
    system consideration Data conversion and integrity System testing Client
    consultation Project cost planning and management Build a business case
    Empowered decision makers Number of instances cited in literature 25 25 23
    23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very
    often focused on only a specific aspect of the implementation process or a
    specific CSF.' \autocite[340]{FinneyEtAl2007ERPImplemCompil} & Management \\
Scope: Features & selection of ERP & `Extrinsic(3) Organizational CSFs (15)
    People CSFs (12) Technological CSFs (5) ● Communication within the company ●
    Organization resistance ● Project budget ● Project management ●
    Implementation strategy ● Strategic goals and objectives ● Business process
    reengineering ● organizational culture ● knowledge base of the company ●
    Project planning and control ● Facilitating conditions ● Organization size ●
    The vision of the organization ● Readiness of organizations ● Clarity of
    potential cost ● User involvement ● Selection of vendor/consult ant ●
    Project team ● Top management support ● Training of user ● Trust on vendor ●
    Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender
    ● Highest degree attained ● Selection of ERP package ● IT infrastructure ●
    Data integrity and system testing.'
    \autocite[4686]{HuangEtAl2021CriticSuccesFactor} & Management \\
Scope: Minimal Customisation & customisation & `They rate CSFs by a degree of
    importance during ERP implementation as follows: (1) top management support;
    (2) project team competence; (3) inter-departmental cooperation; (4) clear
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    goals and objectives; (5) project management; (6) inter-departmental
    communication; (7) management of expectation; (8) project champion; (9)
    vendors' support; (10) careful package selection; (11) data analysis and
    conversion; (12) dedicated resources; (13) use of steering committee; (14)
    user training on software; (15) education on new business processes; (16)
    BPR; (17) minimal customisation; (18) architecture choices; (19) change
    management; (20) partnership with vendors; (21) use of vendors' tool; and
    (22) use of consultant.' \autocite[674]{AliEtAl2017ERPSystemImplem} &
    Production \\
Scope: Minimal Customisation & customisation & `Important CSFs identified are:
    ERP team work and composition, top management support, business plan and
    vision, effective communication, project management, project champion,
    appropriate business and legacy systems, change management programmes,
    culture, BPR, minimum customisation, software development, testing, trouble
    shooting, monitoring, and evaluation of performance.'
    \autocite[675]{AliEtAl2017ERPSystemImplem} & Production \\
Scope: Minimal Customisation & customisation & `They identify causes of ERP
    implementation failure as excessive customisation, dilemma of internal
    integration, poor understanding of business implications and requirements,
    lack of change management strategy, poor data quality, misalignment of IT
    with business, hidden costs, limited training, and lack of top management
    support.' \autocite[681]{AliEtAl2017ERPSystemImplem} & Production \\
Scope: Minimal Customisation & customisation & `Wilson et al. (1994) Sun et al.
    (1997) Soh et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000)
    and Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons
    and Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline
    Organisational resistance Lack of organisational commitment Poor data
    accuracy Limited user involvement Mismatch between organisation requirements
    and functionalities offered Lack of readiness for integration Lack of focus
    on user education and training Excessive customisation Inadequate
    organisational analysis Costs Project duration Technical challenges
    Management changes Table V. Implementation failure attributes JEIM 30,4 682
    8.' \autocite[681]{AliEtAl2017ERPSystemImplem} & Production \\
Scope: Minimal Customisation & customisation & `Lesser, but still important CSFs
    are, having a good business plan, vision, having a project champion,
    appropriate business and legacy systems, change management programmes,
    culture, BPR, minimum customisation, software development, testing, trouble
    shooting, monitoring, and the evaluation of performance (Markus, Axline,
    Petrie and Tanis, 2000; Bancroft et al., 1998; Bingi et al., 1999; Nah et
    al., 2001; Umble et al., 2003; Ehie and Madsen, 2005; Sarkar and Lee, 2003;
    Umble et al., 2003; Kim et al., 2005; Motwani et al., 2005; Nah and Delgado,
    2006; Maguire et al., 2010).' \autocite[682]{AliEtAl2017ERPSystemImplem} &
    Production \\
Scope: Minimal Customisation & customisation & `The most common causes of ERP
    implementation failures are a combination of poor planning and high software
    customisation (Scheer and Habbermann, 2000), lack of top management
    commitment; ineffective communication; insufficient training; lack of user
    support, poor project management, relying on legacy systems, inter-
    departmental conflicts, poor composition of project teams, failure in
    redesigning business processes and, lack of clarity about required changes.'
    \autocite[682]{AliEtAl2017ERPSystemImplem} & Production \\
Scope: Minimal Customisation & customisation & `Eleven critical factors were
    identified, such as ERP teamwork and composition, change management program
    and culture, top management support, business plan and vision, business
    process reengineering (BPR) and minimum customisation, effective
    communications, project management, software development, testing and
    troubleshooting, monitoring and evaluating performance, project champion,
    and appropriate business and IT legacy systems.'
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    \autocite[6]{Rabaai2009IdentiCriticSucces} & Production \\
Scope: Minimal Customisation & customisation & `Disruption to staff and
    resistance to received `best practices', together with required training,
    data mapping, customisations and their support, complexity of integration
    with remaining legacy systems are all commonly reported, and are often
    ongoing issues post-implementation.'
    \autocite[86]{RabaaiEtAl2015CulturPerspeon} & Production \\
Scope: Minimal Customisation & customisation & `If 92 A.A. Rabaa'i and E.
    AlJamal organisational structures are lacking in rigorous lines of
    authority, as Hutchings and Weir suggest, the culture imposed by ERPs may
    not fit without major customisation or culture change, attitudes to which
    may differ between the traditional public sector and emerging private
    enterprises.' \autocite[91]{RabaaiEtAl2015CulturPerspeon} & Production \\
Scope: Minimal Customisation & customisation & `In both sectors half of all
    respondents strongly agreed that `major customisation was required'.'
    \autocite[95]{RabaaiEtAl2015CulturPerspeon} & Production \\
Scope: Minimal Customisation & customisation & `A further lack of fit with
    organisational culture is indicated by the extensive customisations that
    were required in the Jordanian organisations surveyed.'
    \autocite[98]{RabaaiEtAl2015CulturPerspeon} & Production \\
Scope: Minimal Customisation & customisation & `Customisation increases project
    time, ruins schedules, introduce new bugs into the system, and make the
    upgrade to new release harder (Shehab et al. 2004).'
    \autocite[98]{RabaaiEtAl2015CulturPerspeon} & Production \\
Scope: Minimal Customisation & customisation & `Customisation within any culture
    should therefore be avoided, or at least minimised, in order to achieve the
    full benefits of an ERP system.' \autocite[98]{RabaaiEtAl2015CulturPerspeon}
    & Production \\
Scope: Minimal Customisation & customization & `This is also emphasized by Koch
    and Mitteregger (2016), who have shown that amount of customization during
    implementation affects support costs in maintenance, similar to Light
    (2001).' \autocite[659]{BarthEtAl2019CriticSuccesFactor} & Production \\
Scope: Minimal Customisation & customization & `ERP customization at an
    acceptable level brings some advantages to the organizations, like lower
    user resistance, reduced training needs and more organizational adaptation
    (Bingi et al., 1999; Hong \& Kim, 2002).'
    \autocite[88]{BasogluEtAl2007OrganiAdoptiEnterp} & Production \\
Scope: Minimal Customisation & customization & `Work practices, poor data
    quality, BPR activities, customization of the ERP system, internal staff
    adequacy, training, top management support, quality of consultants are the
    main problems (Genoulaz \& Millet, 2006).'
    \autocite[89]{BasogluEtAl2007OrganiAdoptiEnterp} & Production \\
Scope: Minimal Customisation & customization & `ERP customization at an
    acceptable level is an important determinant of organizational adoption
    (Bingi et al., 1999; Hong \& Kim, 2002).'
    \autocite[90]{BasogluEtAl2007OrganiAdoptiEnterp} & Production \\
Scope: Minimal Customisation & customization & `Therefore, organizations should
    be willing to adjust their processes, so as to fit with the new software and
    minimize the degree of customization needed [34].'
    \autocite[1255]{ChatzoglouEtAl2016AnteceOutcomERP} & Production \\
Scope: Minimal Customisation & customization & `These factors include, but not
    limited to, poor consultant effectiveness, ERP software misfit, unrealistic
    expectations from top management concerning the ERP systems, over-reliance
    on heavy customization, poor quality of Business Process Reengineering
    (BPR), high turnover rate of project team members, poor IT Infrastructure,
    functionality problems with the system, unclear concept of the nature and
    use of the ERP system from the users perspective, too tight project
    schedule, lack of formal communication, part-time dedication, etc.'
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    \autocite[498]{GargEtAl2013EmpiriStudyon} & Production \\
Scope: Minimal Customisation & customization & `in Indian retail sector (2) The
    ``Technological'' factor in this study is defined by Implementation
    strategy, Adequate IT infrastructure, Minimal customization and Data
    conversion and accuracy items which may affect the success of ERP
    implementation in Indian retail sector.'
    \autocite[1331]{GargEtAl2015FactorAffectERP} & Production \\
Scope: Minimal Customisation & customization & `P13: A certain level of business
    process re-engineering (BPR) and minimal customization of ERP software
    system to fit into current processes of the organization is positively
    related to ERP implementation success.'
    \autocite[48]{KhattakEtAl2013InvestCriticSucces} & Production \\
Scope: Minimal Customisation & customization & `The complexity and magnitude of
    the efforts required may deter organizations from the approach of ERP
    customization.' \autocite[551]{NgaiEtAl2008ExaminCriticSucces} & Production
    \\
Scope: Minimal Customisation & customization & `In literature, BPR and minimal
    customization is the third most commonly cited CSF.'
    \autocite[38]{OsmanEtAl2019ERPCriticSucces} & Production \\
Scope: Minimal Customisation & customization & `Disruption to staff and
    resistance to received ``best practices'', together with required training,
    data mapping, customizations and their support, complexity of integration
    with remaining legacy systems are all commonly reported, and are often
    ongoing issues post-implementation.'
    \autocite[46]{RabaaiEtAl2016SuccesFactorEnterp} & Production \\
Scope: Minimal Customisation & customization & `ERP failure factors and
    categories Failure Categories Failure Factors C4: Project Management F1:
    Conflicts between organization and consultants/ vendor C5: Technical F2:
    High rate of system customization C5: Technical F3: Data management issues
    C2: Human Resources F4: Inadequate education and training C2: Human
    Resources F5: Inadequate user involvement C2: Human Resources F6:
    Ineffective communications system C3: Organizational F7: Internal conflicts
    between departments C2: Human Resources F8: Inadequate change management C3:
    Organizational F9: Lack of performance measurement system C3: Organizational
    F10: Misfit between organization culture and ERP system C3: Organizational
    F11: Misfit between organization structure and ERP system C3: Organizational
    F12: Misfits between the IT and business strategies C1: Environmental F13:
    Environmental pressures C3: Organizational F14: Poor business process
    reengineering C1: Environmental F15: Poor consultant C4: Project Management
    F16: Poor project management C4: Project Management F17: Poor risk
    management C3: Organizational F18: Poor top management support C5: Technical
    F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...'
    \autocite[42]{RavasanEtAl2014FCM-BaDynamiModeli} & Production \\
Scope: Minimal Customisation & customization & `But as mentioned before,
    international ERPs need major customizations to fit Iranian organizations'
    structures and processes which is the source of future problems in system
    performance.' \autocite[46]{RavasanEtAl2014FCM-BaDynamiModeli} & Production
    \\
Scope: Minimal Customisation & customization & `ERP customization failure:
    Institutionalized accounting practices, power relations and market forces.'
    \autocite[49]{RavasanEtAl2014FCM-BaDynamiModeli} & Production \\
Scope: Minimal Customisation & customization & `Item Description 1 top
    management support 25 application project costs 2 effective communication 26
    interdepartmental cooperation 3 interdepartmental communication 27 dedicated
    resources 4 clear goal and objectives 28 ERP vendor relations 5 business
    plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's
    development tools 7 education on new business process 31 organizational
    characteristics 8 user training\& education 32 employee / team morale-
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    motivation 9 user acceptance 33 leadership of the project team 10 managing
    cultural change 34 project team competence- composition 11 business process
    reengineering 35 ERP team work 12 customization 36 steering committee 13
    minimal customization 37 empowered decision makers 14 software configuration
    38 use of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Production \\
Scope: Minimal Customisation & customization & `Related Sub-Factors 1 (11)
    Business project reengineering (18) Implementation strategies (23)
    Management of expectations (24) Project management (32) Employee / team
    morale \& motivation (33) Leadership of the project team (34) Project team
    competence and composition 2 (14) Software configuration (21) IT
    infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30)
    Support of vendor development tools (38) Use of consultants 3 (40) Project
    champion (46) National culture (47) Country related functional requirements
    (48) Centralization 4 (1) Top management support (2) Effective communication
    (3) Interdepartmental communication (4) Clear goals and objectives (5)
    Business plan \& vision 5 (15) Data accuracy (16) Data integration (42) Data
    analysis and conversion 6 (7) Education on new business processes (8) User
    training and education (9) User acceptance (10) Managing cultural change
    this result maybe, end-users resist changing business processes instead they
    prefer customizations in ERP software.'
    \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Production \\
Scope: Minimal Customisation & customization & `● IT infrastructure ● System
    Training and knowledge transfer ● Over-dependence on detailed and heavy
    customization ● High turnover rate of project team members ● Business
    process re-engineering ● User's resistance to transform ● ERP system misfit
    Considering these critical factors, specifically affecting the agricultural
    business sectors in Malaysia, there are a few possible suggestions
    proposed.' \autocite[2055]{ShukorEtAl2020EnterpResourPlanni} & Production \\
Short-term Thinking (-) & short term & `In summary, achieving short term
    operational goals is of more importance in Iranian industries, rather than
    long term plans, which is on the contrary with ERP philosophy.'
    \autocite[231]{AmidEtAl2012IdentiClassiERP} & Management \\
Short-term Thinking (-) & short term & `With regard to the former point, it is
    of great importance to note that companies implementing ERP system encounter
    problems associated to start-up matters which consequently bring about a
    performance dip instantly after the implementation in the short term [131 -
    132].' \autocite[2054]{ShukorEtAl2020EnterpResourPlanni} & Management \\
Short-term Thinking (-) & short-term & `LITERATURE REVIEW An ERP system entails
    long-term application processes (strategic level) and short-term
    applications (operational level).'
    \autocite[1254]{ChatzoglouEtAl2016AnteceOutcomERP} & Management \\
Short-term Thinking (-) & short-term & `Meanwhile, ERP implementation is not a
    short-term project lasting only two or three months, but a longterm program
    which may last for one or quite a few years.'
    \autocite[418]{GargEtAl2014CriticSuccesFactor} & Management \\
Short-term Thinking (-) & short-term & `In addition to the flexibility that they
    prefer to retain, Chinese leaders are less willing to invest in the longterm
    development of company infrastructure such as in technology adoption,
    internal human resources, and processes since they are thrifty, and focus on
    short-term profit maximization [15].'
    \autocite[558]{NgaiEtAl2008ExaminCriticSucces} & Management \\
Short-term Thinking (-) & short-term & `However, the failure to provide
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    significant resources for these purposes has seen short-term gains, but end-
    user ignorance and discontinuance have led to long- term failure.'
    \autocite[9]{Rabaai2009IdentiCriticSucces} & Management \\
Short-term Thinking (-) & short-term & `At the organisational level public
    sector organisations have more rigid hierarchies and structures, and more
    paperwork, while at the environmental level public sector organisations are
    more strongly influenced by the Cultural perspectives on ERP implementation
    in Jordan 85 political rather than the economic environment, entailing
    strong measures of accountability, short-term vision and public monitoring
    of performance.' \autocite[84]{RabaaiEtAl2015CulturPerspeon} & Management \\
Short-term Thinking (-) & short-term & `While the results suggested most
    respondents considered the training adequate, it can be argued that the
    failure to provide significant resources for training purposes has seen
    short-term gains, but ultimately end-users ignorance and 98 A.A. Rabaa'i and
    E. AlJamal system rejection led to long-term failure.'
    \autocite[97]{RabaaiEtAl2015CulturPerspeon} & Management \\
Short-term Thinking (-) & short-term & `However, the failure to provide
    significant resources for these purposes has seen short-term gains, but end-
    user ignorance and discontinuance have led to long- term failure.'
    \autocite[53]{RabaaiEtAl2016SuccesFactorEnterp} & Management \\
Short-term Thinking (-) & short-term & `Senior management often assumes that
    performance will increase instantly after the initial implementation,
    whereas a short-term decline in effectiveness and productivity is the
    general rule [Yu 2005].' \autocite[19]{ShaulEtAl2013CriticSuccesFactor} &
    Management \\
Software \& Hardware Configuration & configuration & `The merchant of ERP
    software normally endorse which hardware and hardware configuration must be
    utilized to run the ERP system (Al-Mashari, 2002; Yasser, 2000).'
    \autocite[629]{AnjumEtAl2015FactorManipuERP} & Production \\
Software \& Hardware Configuration & configuration & `The high expectation of
    achieving all-round cost savings and service improvements is very much
    dependent on how good the chosen ERP system fits to the organizational
    functionalities and how well the tailoring and configuration process of the
    system matches with the business culture, strategy and structure of the
    organization (Rashid, Hossain, \& Patrick, 2002).'
    \autocite[74]{BasogluEtAl2007OrganiAdoptiEnterp} & Production \\
Software \& Hardware Configuration & configuration & `Control and coordination
    in global ERP configuration.'
    \autocite[94]{BasogluEtAl2007OrganiAdoptiEnterp} & Production \\
Software \& Hardware Configuration & configuration & `A whole commitment from
    the organization has become one of the critical success factors (CSF) but
    the temporary nature of projects in the construction industry with
    constantly shifting partners, each with their own individual objectives and
    working practices makes it difficult to achieve the ideal ICT
    configurations.' \autocite[107]{Chan2013AustraQuantiSurvey} & Production \\
Software \& Hardware Configuration & configuration & `The need to conduct BPR
    and software configuration was the third most commonly cited CSF.'
    \autocite[337]{FinneyEtAl2007ERPImplemCompil} & Production \\
Software \& Hardware Configuration & configuration & `Table III reveals that the
    five most widely cited categories, top management commitment and support,
    change management, BPR and software configuration, training and job
    redesign, and project team: the best and brightest, are significantly more
    often researched than the others.'
    \autocite[339]{FinneyEtAl2007ERPImplemCompil} & Production \\
Software \& Hardware Configuration & configuration & `Frequency analysis of CSFs
    in literature CSF category Top management commitment and support Change
    management BPR and software configuration Training and job redesign Project
    team: the best and brightest Implementation strategy and timeframe
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    Consultant selection and relationship Visioning and planning Balanced team
    Project champion Communication plan IT infrastructure Managing cultural
    change Post-implementation evaluation Selection of ERP Team morale and
    motivation Vanilla ERP Project management Troubleshooting/crises management
    Legacy system consideration Data conversion and integrity System testing
    Client consultation Project cost planning and management Build a business
    case Empowered decision makers Number of instances cited in literature 25 25
    23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 5 5 5 4 4 3 3 Researchers have
    very often focused on only a specific aspect of the implementation process
    or a specific CSF.' \autocite[340]{FinneyEtAl2007ERPImplemCompil} &
    Production \\
Software \& Hardware Configuration & configuration & `The poor quality of BPR
    led to incorrect system configuration problems and hence failed
    implementation.' \autocite[499]{GargEtAl2013EmpiriStudyon} & Production \\
Software \& Hardware Configuration & configuration & `The ERP software vendor
    generally certifies which hardware (and hardware configurations) must be
    used to run the ERP system (Al-Mashari, 2002; Yasser, 2000).'
    \autocite[432]{GargEtAl2014FactorInflueERP} & Production \\
Software \& Hardware Configuration & configuration & `In addition to this IT
    infrastructure, the software configuration has critical influence on the
    success of ERP implementation.' \autocite[1331]{GargEtAl2015FactorAffectERP}
    & Production \\
Software \& Hardware Configuration & configuration & `Moreover, end-users
    involvement is helpful in the ERP configuration analysis and in data
    conversion as well as in system testing.'
    \autocite[38]{OsmanEtAl2019ERPCriticSucces} & Production \\
Software \& Hardware Configuration & configuration & `But change management goes
    far beyond technical change or configuration requests and strikes at the
    heart of an organisation's culture and identity.'
    \autocite[55]{RabaaiEtAl2016SuccesFactorEnterp} & Production \\
Software \& Hardware Configuration & configuration & `Item Description 1 top
    management support 25 application project costs 2 effective communication 26
    interdepartmental cooperation 3 interdepartmental communication 27 dedicated
    resources 4 clear goal and objectives 28 ERP vendor relations 5 business
    plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's
    development tools 7 education on new business process 31 organizational
    characteristics 8 user training\& education 32 employee / team morale-
    motivation 9 user acceptance 33 leadership of the project team 10 managing
    cultural change 34 project team competence- composition 11 business process
    reengineering 35 ERP team work 12 customization 36 steering committee 13
    minimal customization 37 empowered decision makers 14 software configuration
    38 use of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Production \\
Software \& Hardware Configuration & configuration & `Related Sub-Factors 1 (11)
    Business project reengineering (18) Implementation strategies (23)
    Management of expectations (24) Project management (32) Employee / team
    morale \& motivation (33) Leadership of the project team (34) Project team
    competence and composition 2 (14) Software configuration (21) IT
    infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30)
    Support of vendor development tools (38) Use of consultants 3 (40) Project
    champion (46) National culture (47) Country related functional requirements
    (48) Centralization 4 (1) Top management support (2) Effective communication
    (3) Interdepartmental communication (4) Clear goals and objectives (5)
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    Business plan \& vision 5 (15) Data accuracy (16) Data integration (42) Data
    analysis and conversion 6 (7) Education on new business processes (8) User
    training and education (9) User acceptance (10) Managing cultural change
    this result maybe, end-users resist changing business processes instead they
    prefer customizations in ERP software.'
    \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Production \\
Software \& Hardware Configuration & configuration & `To prepare the technical
    system, Davenport (2000) describes the following processes: configuration,
    interface development, data standardization and conversion, testing and
    performance management.' \autocite[250]{SethEtAl2015DeveloModelSucces} &
    Production \\
Software \& Hardware Development & software development & `Important CSFs
    identified are: ERP team work and composition, top management support,
    business plan and vision, effective communication, project management,
    project champion, appropriate business and legacy systems, change management
    programmes, culture, BPR, minimum customisation, software development,
    testing, trouble shooting, monitoring, and evaluation of performance.'
    \autocite[675]{AliEtAl2017ERPSystemImplem} & Production \\
Software \& Hardware Development & software development & `Lesser, but still
    important CSFs are, having a good business plan, vision, having a project
    champion, appropriate business and legacy systems, change management
    programmes, culture, BPR, minimum customisation, software development,
    testing, trouble shooting, monitoring, and the evaluation of performance
    (Markus, Axline, Petrie and Tanis, 2000; Bancroft et al., 1998; Bingi et
    al., 1999; Nah et al., 2001; Umble et al., 2003; Ehie and Madsen, 2005;
    Sarkar and Lee, 2003; Umble et al., 2003; Kim et al., 2005; Motwani et al.,
    2005; Nah and Delgado, 2006; Maguire et al., 2010).'
    \autocite[682]{AliEtAl2017ERPSystemImplem} & Production \\
Software \& Hardware Development & software development & `Two researchers
    conducted a research study on the success issues of ERP which identified ten
    successive issues through investigate ten selective articles which are:
    effective decision making, Business Plan and vision, project management,
    effective communication, testing and troubleshooting, appropriate business
    and legacy system, ERP teamwork and composition, top management support and
    software development (Nah and Lau, 2001).'
    \autocite[628]{AnjumEtAl2015FactorManipuERP} & Production \\
Software \& Hardware Development & software development & `Software Development:
    Software and user interface development is in relation to change in software
    or interfaces to meet the organization and users' requirements include local
    languages.' \autocite[109]{Chan2013AustraQuantiSurvey} & Production \\
Software \& Hardware Development & software development & `Developing software
    systems is an expensive, and often a difficult process as software
    development projects are affected by a series of problems, such as poor
    project management, cost and schedule overruns, poor quality software and
    under-motivated developers.' \autocite[500]{GargEtAl2013EmpiriStudyon} &
    Production \\
Software \& Hardware Development & software development & `Software development,
    testing, and troubleshooting To enjoy the full benefits of implementation,
    various ERP software or packages are required to integrate the ERP system
    into the organization [10].' \autocite[556]{NgaiEtAl2008ExaminCriticSucces}
    & Production \\
Software \& Hardware Development & software development & `In the project
    context, the term scope can refer to two components[41]: Product scope the
    features and functions that characterized product, service or result Project
    scope its work performed to deliver a product, service or result with
    specific features and functions From requirement and product scope
    definitions can conclude requirement is a component of product scope and the
    functional requirements are typically used in IT and software development to
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    describe product scope, also project scope management deal with requirement
    collecting which help to validate and control scope[42].'
    \autocite[39]{OsmanEtAl2019ERPCriticSucces} & Production \\
Software \& Hardware Development & software development & `Eleven critical
    factors were identified, such as ERP teamwork and composition, change
    management program and culture, top management support, business plan and
    vision, business process reengineering (BPR) and minimum customisation,
    effective communications, project management, software development, testing
    and troubleshooting, monitoring and evaluating performance, project
    champion, and appropriate business and IT legacy systems.'
    \autocite[6]{Rabaai2009IdentiCriticSucces} & Production \\
Software \& Hardware Development & software development & `Item Description 1
    top management support 25 application project costs 2 effective
    communication 26 interdepartmental cooperation 3 interdepartmental
    communication 27 dedicated resources 4 clear goal and objectives 28 ERP
    vendor relations 5 business plan-vision 29 ongoing vendor support 6 change
    management 30 use of vendor's development tools 7 education on new business
    process 31 organizational characteristics 8 user training\& education 32
    employee / team morale-motivation 9 user acceptance 33 leadership of the
    project team 10 managing cultural change 34 project team competence-
    composition 11 business process reengineering 35 ERP team work 12
    customization 36 steering committee 13 minimal customization 37 empowered
    decision makers 14 software configuration 38 use of consultants 15 data
    accuracy 39 obtain business analysts 16 data analysis- conversion 40 project
    champion 17 software development testing \& troubleshooting 41 appropriate
    business-legacy systems 18 implementation strategies 42 data integration 19
    ERP package selection 43 scope \& vision based performance 20 feasible
    evaluation of ERP project 44 monitoring- evaluation of performance 21 IT
    infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Production \\
Software \& Hardware Development & software modification & `To avoid ERP
    software modifications which were perceived as slowing down the project, the
    cause of risky bugs needing to be rewritten in an upgrade, many
    organizations were committed to a ``vanilla'' implementation [Al-Mudimigh
    2007; Finney and Corbett 2007].'
    \autocite[9]{ShaulEtAl2013CriticSuccesFactor} & Production \\
Software \& Hardware Development & system development & `The findings of our
    study reveal that `appropriate business and IT legacy systems', `business
    plan/vision/goals/justification', `business process reengineering', `change
    management culture and programme', `communication', `ERP teamwork and
    composition', `monitoring and evaluation of performance', `project
    champion', `project management', `software/system development, testing and
    troubleshooting', `top management support', `data management', `ERP strategy
    and implementation methodology', `ERP vendor', `organizational
    characteristics', `fit between ERP and business/process', `national culture'
    and `country-related functional requirement' were the commonly extracted
    factors across these 10 countries/regions.'
    \autocite[548]{NgaiEtAl2008ExaminCriticSucces} & Production \\
Steering Committee & steering committee & `They rate CSFs by a degree of
    importance during ERP implementation as follows: (1) top management support;
    (2) project team competence; (3) inter-departmental cooperation; (4) clear
    goals and objectives; (5) project management; (6) inter-departmental
    communication; (7) management of expectation; (8) project champion; (9)
    vendors' support; (10) careful package selection; (11) data analysis and
    conversion; (12) dedicated resources; (13) use of steering committee; (14)
    user training on software; (15) education on new business processes; (16)
    BPR; (17) minimal customisation; (18) architecture choices; (19) change
    management; (20) partnership with vendors; (21) use of vendors' tool; and
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    (22) use of consultant.' \autocite[674]{AliEtAl2017ERPSystemImplem} &
    Management \\
Steering Committee & steering committee & `Somers and Nelson (2004) showed that
    the importance of individual actors and activities within the company over
    the life cycle of an ERP system is not constant, for example a steering
    committee and change management lose importance in the later phases.'
    \autocite[659]{BarthEtAl2019CriticSuccesFactor} & Management \\
Steering Committee & steering committee & `Somers and Nelson (2001, 2004) also
    advocate the need to establish a steering committee comprised of senior
    management from different corporate functions, senior project management
    reps, and ERP end-users.' \autocite[336]{FinneyEtAl2007ERPImplemCompil} &
    Management \\
Steering Committee & steering committee & `Steering committee members should be
    involved in ERP selection, monitoring during implementation and management
    of outside consultants.' \autocite[336]{FinneyEtAl2007ERPImplemCompil} &
    Management \\
Steering Committee & steering committee & `This could be achieved by being an
    active member of a Steering Committee: a team comprised of the company's
    core hands-on representatives and decision makers, with effectively defining
    the goals and requirements of the ERP project.'
    \autocite[418]{GargEtAl2014CriticSuccesFactor} & Management \\
Steering Committee & steering committee & `Kamhawi, 2007 F6 Use of Steering
    Committee for control purpose Gupta \& Raghunathan, 1989; Mabert et
    al.,2003; Browen et al.,2007; Ngai et al.,2008; Zhang et al.,2003.'
    \autocite[47]{KhattakEtAl2013InvestCriticSucces} & Management \\
Steering Committee & steering committee & `In all the cases, either successful
    or unsuccessful, the PMs were supposed to report to almost different
    personnel in their respective enterprises for example; to organizational
    head/chief, steering committee and senior manager of a business unit.'
    \autocite[53]{KhattakEtAl2013InvestCriticSucces} & Management \\
Steering Committee & steering committee & `P6: All the organizations with
    successful cases of ERP system implementation, surveyed in the current
    study, properly constituted steering committees for the purpose of
    monitoring and controlling of the activities related to the ERP project
    implementation.' \autocite[59]{KhattakEtAl2013InvestCriticSucces} &
    Management \\
Steering Committee & steering committee & `The steering committee was to be
    headed by different personnel in different enterprises i.e., in some cases
    it was to be headed by Chairman or President while in others CEO or GM or
    CIO was the head of the same.'
    \autocite[59]{KhattakEtAl2013InvestCriticSucces} & Management \\
Steering Committee & steering committee & `The presence of steering committee
    was absolutely lacking in the enterprises where the ERP implementation got
    collapsed and did not accomplished on time and under/within allocated
    budget.' \autocite[60]{KhattakEtAl2013InvestCriticSucces} & Management \\
Steering Committee & steering committee & `In Chinese context, ERP project is
    seen as the utilization of such a project to promote deployment and
    automation of effective processes and to enhance organizational
    effectiveness to which the project management efforts of the steering
    committee are crucial.' \autocite[66]{KhattakEtAl2013InvestCriticSucces} &
    Management \\
Steering Committee & steering committee & `Whereas, in Pakistani context the
    steering committee efforts for control purpose are less important as the
    controlled is mostly exercised by the project manager or top manager.'
    \autocite[66]{KhattakEtAl2013InvestCriticSucces} & Management \\
Steering Committee & steering committee & `The research concludes that: (1)
    Quality (adequacy) and quantity of training and education of
    personnel/users, role and effectiveness of management in reducing the users'
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    resistance, use of steering committee for control purpose, top management
    support or involvement, clearly specified goals/objectives/scope regarding
    ERP system, ease of system's use and users' acceptance, vendor's support,
    project management, effective communication among the organizational members
    and a balanced team for ERP implementation are practically considered by the
    successful enterprises in China while planning and going for the
    implementation of the ERP system and are thus critical for the success of
    ERP systems implementation projects, ignoring of which may cause
    implementation failure in the Chinese organizations; (2) Some of the factors
    deemed imperative for ERP systems implementation success in the literature
    like; selection of a right full time project manager with extensive
    experience, presence/existence of a champion, integration of business
    planning with IT/ERP planning, use and role of consultant, change management
    strategy and programs, competency in use of IT and IT infrastructure,
    business...' \autocite[68]{KhattakEtAl2013InvestCriticSucces} & Management
    \\
Steering Committee & steering committee & `A steering committee should be
    established with members committed to participate in project team meetings,
    to closely monitor the progress of the project, and to provide clear
    direction to the project [54,88].'
    \autocite[557]{NgaiEtAl2008ExaminCriticSucces} & Management \\
Steering Committee & steering committee & `For example, the Australian Vice
    Chancellor's Committee (AVCC) created the Core Australian Specification for
    Management and Administrative Computing (CASMAC) steering committee in 1991
    (AVCC, 1996).' \autocite[3]{Rabaai2009IdentiCriticSucces} & Management \\
Steering Committee & steering committee & `Item Description 1 top management
    support 25 application project costs 2 effective communication 26
    interdepartmental cooperation 3 interdepartmental communication 27 dedicated
    resources 4 clear goal and objectives 28 ERP vendor relations 5 business
    plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's
    development tools 7 education on new business process 31 organizational
    characteristics 8 user training\& education 32 employee / team morale-
    motivation 9 user acceptance 33 leadership of the project team 10 managing
    cultural change 34 project team competence- composition 11 business process
    reengineering 35 ERP team work 12 customization 36 steering committee 13
    minimal customization 37 empowered decision makers 14 software configuration
    38 use of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Management \\
Steering Committee & steering committee & `On the other hand, other factors
    referring to project management like steering committee and empowered
    decision makers were not recognized by end-users.'
    \autocite[68]{SaygiliEtAl2017EndUsersPercep} & Management \\
Steering Committee & steering committee & `Such consequences can be avoided by
    open communication with top management, vendors, and consultants through the
    establishment of senior and professional steering committees, a balanced
    project team, and a ``responsible'' definition of success measures.'
    \autocite[19]{ShaulEtAl2013CriticSuccesFactor} & Management \\
Steering Committee & steering committee & `These activities are run by a
    professional steering committee in which ``lowlevel'' stakeholders get a
    chance to air their views and reduce uncertainties regarding business
    concerns.' \autocite[20]{ShaulEtAl2013CriticSuccesFactor} & Management \\
System Architecture & architecture & `At the operational level, Gable (1998)
    defines ERP as a ``comprehensive packaged software solution, which seeks to
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    integrate the complete range of business processes and functions in order to
    present a holistic view of the business from a single information and IT
    architecture''.' \autocite[668]{AliEtAl2017ERPSystemImplem} & Management \\
System Architecture & architecture & `They rate CSFs by a degree of importance
    during ERP implementation as follows: (1) top management support; (2)
    project team competence; (3) inter-departmental cooperation; (4) clear goals
    and objectives; (5) project management; (6) inter-departmental
    communication; (7) management of expectation; (8) project champion; (9)
    vendors' support; (10) careful package selection; (11) data analysis and
    conversion; (12) dedicated resources; (13) use of steering committee; (14)
    user training on software; (15) education on new business processes; (16)
    BPR; (17) minimal customisation; (18) architecture choices; (19) change
    management; (20) partnership with vendors; (21) use of vendors' tool; and
    (22) use of consultant.' \autocite[674]{AliEtAl2017ERPSystemImplem} &
    Management \\
System Architecture & architecture & `In addition, the effect of other on-going
    projects, including the management of the overall IT architecture, and
    nonavailability of resources for organisational transformation, are the most
    critical risk factors for implementation.'
    \autocite[678]{AliEtAl2017ERPSystemImplem} & Management \\
System Architecture & architecture & `Technical issues like system architecture,
    language, data modeling and ERP integration with other systems like Supply
    Chain Management (SCM) systems are other branches that have made a
    contribution.' \autocite[79]{BasogluEtAl2007OrganiAdoptiEnterp} & Management
    \\
System Architecture & architecture & `It is critical to assess the IT readiness
    of the organization, including the architecture and skills (Tarafdar and
    Roy, 2003; Somers and Nelson, 2001; Somers and Nelson, 2004; Bajwa et al.,
    2004; Siriginidi, 2000a, b).' \autocite[338]{FinneyEtAl2007ERPImplemCompil}
    & Management \\
System Architecture & architecture & `This unique network architecture provides
    expert care to our patients and a level of confidence in receiving the
    latest medicine has to offer.'
    \autocite[407]{GargEtAl2014CriticSuccesFactor} & Management \\
System Architecture & architecture & `Therefore, it is critical to evaluate
    company's current IT readiness, including architecture and skills, before
    implementation.' \autocite[39]{OsmanEtAl2019ERPCriticSucces} & Management \\
System Architecture & architecture & `QUT uses an explicit Enterprise
    Architecture model as a tool for planning and prioritization to help achieve
    both strong ROI and ensure efficient business operations that are aligned to
    the blueprint.' \autocite[56]{RabaaiEtAl2016SuccesFactorEnterp} & Management
    \\
System Architecture & architecture & `When QUTs Constellar hub was replaced with
    a service oriented architecture solution around 2011 the activity completion
    report noted a successful completion of the project with all project
    benefits realised.' \autocite[56]{RabaaiEtAl2016SuccesFactorEnterp} &
    Management \\
System Architecture & architecture & `The recent direction has been towards a
    real time integration using a service oriented architecture such that every
    touchpoint for the student system communicates both ways using web
    services.' \autocite[56]{RabaaiEtAl2016SuccesFactorEnterp} & Management \\
System Integration & integration & `The authors report risk factors such as loss
    of qualified IT experts after implementation, inaccurate master production
    schedules, user resistance, loss of ERP-related know-how, lack of vendor
    support, failure to produce an appropriate material requirement plan, and
    inefficient integration between modules are primary risk factors that can
    affect the viability of ERP projects.'
    \autocite[678]{AliEtAl2017ERPSystemImplem} & Production \\
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System Integration & integration & `They identify causes of ERP implementation
    failure as excessive customisation, dilemma of internal integration, poor
    understanding of business implications and requirements, lack of change
    management strategy, poor data quality, misalignment of IT with business,
    hidden costs, limited training, and lack of top management support.'
    \autocite[681]{AliEtAl2017ERPSystemImplem} & Production \\
System Integration & integration & `Wilson et al. (1994) Sun et al. (1997) Soh
    et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and
    Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and
    Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline
    Organisational resistance Lack of organisational commitment Poor data
    accuracy Limited user involvement Mismatch between organisation requirements
    and functionalities offered Lack of readiness for integration Lack of focus
    on user education and training Excessive customisation Inadequate
    organisational analysis Costs Project duration Technical challenges
    Management changes Table V. Implementation failure attributes JEIM 30,4 682
    8.' \autocite[681]{AliEtAl2017ERPSystemImplem} & Production \\
System Integration & integration & `Lack of proper integration and knowledge of
    business process reengineering are other problems of local solutions.'
    \autocite[229]{AmidEtAl2012IdentiClassiERP} & Production \\
System Integration & integration & `Through data integration, ERP systems
    eliminate counter-productive processes and cross-functional coordination
    problems that hinder the integration of organizations.'
    \autocite[73]{BasogluEtAl2007OrganiAdoptiEnterp} & Production \\
System Integration & integration & `Technical issues like system architecture,
    language, data modeling and ERP integration with other systems like Supply
    Chain Management (SCM) systems are other branches that have made a
    contribution.' \autocite[79]{BasogluEtAl2007OrganiAdoptiEnterp} & Production
    \\
System Integration & integration & `The architecture of the software facilitates
    transparent integration of modules providing flow of information amongall
    functions within the enterprise in a consistently visible manner (2002).'
    \autocite[104]{Chan2013AustraQuantiSurvey} & Production \\
System Integration & integration & `The main reasons among many others as to why
    the Chinese enterprises faced the kind of challenges include data
    maintenance and integration problems, system integration problems (Lai,
    2006), the involvement of knowledgeable consultants in respective projects,
    selection of reputable vendors, low implementation experience, weak or
    unsophisticated IT infrastructure, lack of access to knowledge and human
    resource etc., to name some of few.'
    \autocite[43]{KhattakEtAl2013InvestCriticSucces} & Production \\
System Integration & integration & `However, the integration of software is not
    an easy task, and should be managed properly.'
    \autocite[556]{NgaiEtAl2008ExaminCriticSucces} & Production \\
System Integration & integration & `The factors identified were management and
    leadership, visioning and planning, ERP package selection, communication
    process management, training and education, project management, legacy
    systems management, system integration, system testing, cultural and
    structural changes, and performance evaluation and management.'
    \autocite[6]{Rabaai2009IdentiCriticSucces} & Production \\
System Integration & integration & `Hence, the integration of data from the
    organisation's wider system is essential in ensuring the successful
    implementation of an ERP system (e.g.'
    \autocite[11]{Rabaai2009IdentiCriticSucces} & Production \\
System Integration & integration & `Other critical factors include visioning and
    planning, consultant selection and relationship, effective communication
    plan, ERP system selection, ERP systems integration, and post-implementation
    evaluation measures.' \autocite[11]{Rabaai2009IdentiCriticSucces} &
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    Production \\
System Integration & integration & `This paper aims to address different areas
    of emphasis, including: (i) ERP adoption decisions, (ii) ERP selection,
    (iii) customisation procedures, (iv) integration aspects, (v) role of
    consultants, and (vi) ERP system evaluation; each of which has been raised
    in the literature as an important area of interest, and all of which are
    among the most commonly reported challenges.'
    \autocite[457]{RabaaiEtAl2009ERPSystemHigher} & Production \\
System Integration & integration & `US HEIs viewed ERP adoption as a method of
    gaining greater integration of their management systems to better manage
    increasingly complex operations (Frantz, 2001).'
    \autocite[457]{RabaaiEtAl2009ERPSystemHigher} & Production \\
System Integration & integration & `While the interviews were far-ranging and
    insights rich and many, distillation of the evidence surfaced the following
    six main areas of emphasis: (i) ERP adoption decisions, (ii) ERP selection,
    (iii) customisation procedures, (iv) integration aspects, (v) role of
    consultants, and (vi) ERP system evaluation at QUT; each of which has been
    raised in the literature as an important area of interest, and all of which
    are among the most commonly reported challenges (e.g.'
    \autocite[460]{RabaaiEtAl2009ERPSystemHigher} & Production \\
System Integration & integration & `Best-of-breed offers organisations more
    choice and flexibility with functionality, but can complicate integration
    and implementation (Miranda, 1999).'
    \autocite[461]{RabaaiEtAl2009ERPSystemHigher} & Production \\
System Integration & integration & `Moreover, the integration of organisation-
    wide data is essential to ensure the successful implementation of an ERP
    system (Somers and Nelson, 2001).'
    \autocite[463]{RabaaiEtAl2009ERPSystemHigher} & Production \\
System Integration & integration & `However, as suggested earlier, a best-of-
    breed approach has limitations, an obvious potential complication being
    integration of different vendors' modules and legacy modules.'
    \autocite[463]{RabaaiEtAl2009ERPSystemHigher} & Production \\
System Integration & integration & `So, systems integration is working well at
    QUT, but I'm not totally satisfied as a number of our systems are still
    using batched or cycling run integration rather than using real-time
    integration.'' (The associate IT director at QUT, Personal Communication,
    3rd of March, 2009).' \autocite[463]{RabaaiEtAl2009ERPSystemHigher} &
    Production \\
System Integration & integration & `However, the integration can be done better;
    what we really would like to see is a real-time or immediate integration
    between the various systems.'' (The business manager of Archibus/FM,
    Personal Communication, 6th of November, 2008).'
    \autocite[463]{RabaaiEtAl2009ERPSystemHigher} & Production \\
System Integration & integration & `Even though I think that the integration
    process between these systems can be done better, but I believe that our
    integration process is running smoothly.'' (The business manager of BEIMS,
    Personal Communication, 4th of Novermber, 2008).'
    \autocite[464]{RabaaiEtAl2009ERPSystemHigher} & Production \\
System Integration & integration & `Also, the business manager of the Syllabus
    Plus, a system that prepares QUT's class and examination timetables, which
    was implemented at QUT in 1998, said: ``Syllabus Plus is actually integrated
    with many systems at QUT, ERP packages and in-house built applications,
    which make the integration between these systems a bit problematic.'
    \autocite[464]{RabaaiEtAl2009ERPSystemHigher} & Production \\
System Integration & integration & `However, the strength of the best-of-breed
    approach is you get the richest functionality in each of the area you are
    looking at, but the problem with that you then need to do your own
    integration.' \autocite[464]{RabaaiEtAl2009ERPSystemHigher} & Production \\
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System Integration & integration & `So this was the first stage of our
    integration process, where, for example, the Payroll system is interfaced
    with the Financials system.' \autocite[464]{RabaaiEtAl2009ERPSystemHigher} &
    Production \\
System Integration & integration & `The second phase of the integration process
    we followed, is that you want the integration to be a bit more active, and
    therefore instead of interfacing the systems; you actually have some form of
    a tool, that's called a transformational tool, that allows to perform the
    integration in an active way.' \autocite[464]{RabaaiEtAl2009ERPSystemHigher}
    & Production \\
System Integration & integration & `The associate IT director at QUT gave more
    examples in regards to systems integration at QUT, including: ``As part of
    the new student implementation, we've decided that batched or cycling run
    integration is not sufficient.'
    \autocite[464]{RabaaiEtAl2009ERPSystemHigher} & Production \\
System Integration & integration & `For example, if a student just got his
    student card, he expects that all the systems should recognise him as a
    student, so he wants to go to the library and borrow a book, that implies
    that you have real-time integration as an oppose to cycling run
    integration.' \autocite[464]{RabaaiEtAl2009ERPSystemHigher} & Production \\
System Integration & integration & `However, QUT is looking at means to better
    improve system integration and have dedicated projects/ resources working on
    this issue.' \autocite[464]{RabaaiEtAl2009ERPSystemHigher} & Production \\
System Integration & integration & `The Role of Consultants at QUT Consultants
    often play an essential role in ERP system selection, customisation and
    integration.' \autocite[464]{RabaaiEtAl2009ERPSystemHigher} & Production \\
System Integration & integration & `The descriptive case study of Queensland
    University of Technology (QUT) provided details of the: (i) ERP adoption
    decisions and alternatives, (ii) ERP selection, (iii) customisation
    procedures, (iv) integration aspects, (v) role of consultants, and (vi) ERP
    system evaluation perceptions.'
    \autocite[466]{RabaaiEtAl2009ERPSystemHigher} & Production \\
System Integration & integration & `Disruption to staff and resistance to
    received `best practices', together with required training, data mapping,
    customisations and their support, complexity of integration with remaining
    legacy systems are all commonly reported, and are often ongoing issues post-
    implementation.' \autocite[86]{RabaaiEtAl2015CulturPerspeon} & Production \\
System Integration & integration & `They are the few key areas where things must
    go right. . . '' An earlier paper by this team (Ram, Corkindale and Wu, 2013)
    tabulated the relationships found in the literature between CSFs and
    implementation or performance output success to identify four factors
    consistently emerging as central, namely project management, training and
    education, business process re-engineering and system integration.'
    \autocite[87]{RabaaiEtAl2015CulturPerspeon} & Production \\
System Integration & integration & `Similarly, on technical aspects, testing and
    system integration were perceived as generally effective, though there were
    substantial minorities in each sector who did not consider that departments
    had been integrated by the ERP.' \autocite[97]{RabaaiEtAl2015CulturPerspeon}
    & Production \\
System Integration & integration & `Disruption to staff and resistance to
    received ``best practices'', together with required training, data mapping,
    customizations and their support, complexity of integration with remaining
    legacy systems are all commonly reported, and are often ongoing issues post-
    implementation.' \autocite[46]{RabaaiEtAl2016SuccesFactorEnterp} &
    Production \\
System Integration & integration & `Their empirical study found that whilst
    training/education and system integration factor were critical for output
    performance, the former two (organizational) CSFs were essential for
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    implementation success.' \autocite[47]{RabaaiEtAl2016SuccesFactorEnterp} &
    Production \\
System Integration & integration & `In regards to project-related CSFs which are
    concerned with system and consultant selection, system integration,
    training, communication plan and team composition as well as general project
    management around these.' \autocite[55]{RabaaiEtAl2016SuccesFactorEnterp} &
    Production \\
System Integration & integration & `The widespread usage of internet expanded
    the scope of ERP by providing inter-organizational integration (Eckhartz et
    al., 2010; Alimazighi \& Bouhmadi, 2011; Grant et al., 2013).'
    \autocite[58]{SaygiliEtAl2017EndUsersPercep} & Production \\
System Integration & integration & `Critical success factors identified in
    Turkish studies Author (s) Critical Success Factors Baskak\& Cetisli (2003)
    Top management support, business plan and vision, ERP teamwork, ERP package
    selection, change management, user training and education, effective
    communication, project management, data integration, software testing and
    troubleshooting, appropriate legacy systems, monitoring and evaluation of
    performance.' \autocite[62]{SaygiliEtAl2017EndUsersPercep} & Production \\
System Integration & integration & `Item Description 1 top management support 25
    application project costs 2 effective communication 26 interdepartmental
    cooperation 3 interdepartmental communication 27 dedicated resources 4 clear
    goal and objectives 28 ERP vendor relations 5 business plan-vision 29
    ongoing vendor support 6 change management 30 use of vendor's development
    tools 7 education on new business process 31 organizational characteristics
    8 user training\& education 32 employee / team morale-motivation 9 user
    acceptance 33 leadership of the project team 10 managing cultural change 34
    project team competence- composition 11 business process reengineering 35
    ERP team work 12 customization 36 steering committee 13 minimal
    customization 37 empowered decision makers 14 software configuration 38 use
    of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Production \\
System Integration & integration & `Related Sub-Factors 1 (11) Business project
    reengineering (18) Implementation strategies (23) Management of expectations
    (24) Project management (32) Employee / team morale \& motivation (33)
    Leadership of the project team (34) Project team competence and composition
    2 (14) Software configuration (21) IT infrastructure (28) ERP vendor
    relations (29) Ongoing vendor support (30) Support of vendor development
    tools (38) Use of consultants 3 (40) Project champion (46) National culture
    (47) Country related functional requirements (48) Centralization 4 (1) Top
    management support (2) Effective communication (3) Interdepartmental
    communication (4) Clear goals and objectives (5) Business plan \& vision 5
    (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6
    (7) Education on new business processes (8) User training and education (9)
    User acceptance (10) Managing cultural change this result maybe, end-users
    resist changing business processes instead they prefer customizations in ERP
    software.' \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Production \\
System Integration & integration & `Moreover, key aspects like data conversion,
    integration and analysis provided by ERP applications are pointed out by
    end-users.' \autocite[69]{SaygiliEtAl2017EndUsersPercep} & Production \\
System Integration & integration & `At present, focus is on integration of
    upstream and downstream partners through supply chain management information
    system (SCMIS).' \autocite[248]{SethEtAl2015DeveloModelSucces} & Production
    \\
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System Integration & integration & `However, King and Burgess [2008] found
    similarities between ERP and CRM implementations and between their
    respective CSFs as they both are large-scale integration technologies, and
    often are packages supplied by large software vendors.'
    \autocite[24]{ShaulEtAl2013CriticSuccesFactor} & Production \\
System Integration & integration & `Shaul and Tauber [2011] showed that SMEs,
    unlike LEs, face much greater constraints in terms of resources that can be
    committed to all stages of information gathering in order to reduce
    uncertainty, although the complexity and amount of IT functionality and
    integration requirements are often similar.'
    \autocite[25]{ShaulEtAl2013CriticSuccesFactor} & Production \\
System Security & security & `Also, non-functional aspects, such as performance,
    security, stability or reliability must at least reach the level from before
    (G, K).' \autocite[663]{BarthEtAl2019CriticSuccesFactor} & Production \\
System Security & security & `Another important factor which is influenced by
    code modification is revision security.'
    \autocite[666]{BarthEtAl2019CriticSuccesFactor} & Production \\
System Security & security & `Drawing from the literature, we found security,
    project management, and communication are the top three widely cited CSFs
    during implementation.' \autocite[4683]{HuangEtAl2021CriticSuccesFactor} &
    Production \\
System Security & security & `The most widely cited CSFs were found to be:
    security, project management, communication, compliance, network and the
    reaction of organization.' \autocite[4685]{HuangEtAl2021CriticSuccesFactor}
    & Production \\
System Security & security & `The most widely cited CSF is security [14, 15,
    1921, 23, 28].' \autocite[4685]{HuangEtAl2021CriticSuccesFactor} &
    Production \\
System Security & security & `Companies that move to cloud ERP have little
    knowledge about how cloud providers employ security platforms, processes and
    procedures, which may raise security risk or information leakage.'
    \autocite[4685]{HuangEtAl2021CriticSuccesFactor} & Production \\
System Security & security & `The concerns, from the security point of view,
    when implementing Cloud ERP include: security breaches leading to
    confidential data being compromised, encryption, accountability, and
    maintenance issues [14].' \autocite[4685]{HuangEtAl2021CriticSuccesFactor} &
    Production \\
System Security & security & `Obviously, security breaches bring significant
    consequences to organizations; such as, leakage of user account details
    empowering attackers to access the confidential business information.'
    \autocite[4685]{HuangEtAl2021CriticSuccesFactor} & Production \\
System Security & security & `As such, strategies, policies, security tools and
    mechanisms to ensure security play an important role in the successful
    adoption and implementation of Cloud ERP [15].'
    \autocite[4685]{HuangEtAl2021CriticSuccesFactor} & Production \\
System Security & security & `Extrinsic factors include: compliance, network,
    and security as these CSFs are primarily controlled by the cloud vendor.'
    \autocite[4686]{HuangEtAl2021CriticSuccesFactor} & Production \\
System Security & security & `For example, Gupta and Misra [14] analyzed
    statistics and found network, compliance, security is positively related to
    the success of Cloud ERP implementation.'
    \autocite[4687]{HuangEtAl2021CriticSuccesFactor} & Production \\
System Security & security & `The indirect influences of security, compliance
    and network on the success implementation are also identified from the study
    of Gupta, Misra [15].' \autocite[4688]{HuangEtAl2021CriticSuccesFactor} &
    Production \\
System Security & security & `Discussion From the systematic literature review
    conducted into Cloud ERP implementation, we found that the top five most
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    widely cited CSFs for the successful implementation of Cloud ERP are:
    security, project management, communication, compliance, and network.'
    \autocite[4689]{HuangEtAl2021CriticSuccesFactor} & Production \\
System Security & security & `For example, a high level of security and
    confidentiality is considered as one of the advantages of on-premise ERP,
    thus organizations usually do not consider security in their CSFs [35].'
    \autocite[4689]{HuangEtAl2021CriticSuccesFactor} & Production \\
System Security & security & `Accordingly, security is considered as the most
    important CSF for the successful implementation from an organizations'
    perspective.' \autocite[4689]{HuangEtAl2021CriticSuccesFactor} & Production
    \\
System Security & security & `This theme is in line with Hentschel, Leyh [16]
    who argued that security is the most frequently mentioned CSF by client
    organizations during the implementation and usage of cloud solutions.'
    \autocite[4689]{HuangEtAl2021CriticSuccesFactor} & Production \\
System Security & security & `However, security serves as an extrinsic factor
    and can be controlled by vendors.'
    \autocite[4689]{HuangEtAl2021CriticSuccesFactor} & Production \\
System Security & security & `According to Goel, Kiran [36], cloud providers
    have several resources to improve security solutions.'
    \autocite[4689]{HuangEtAl2021CriticSuccesFactor} & Production \\
System Security & security & `For example, although security is considered the
    most important CSF, accordingly to Mac-Anigboro and Usoro [41] and Kiadehi
    and Mohammadi [42], large organizations would place more emphasis on the
    security of data and information compared to SMEs.'
    \autocite[4690]{HuangEtAl2021CriticSuccesFactor} & Production \\
System Security & security & `However, a study conducted by Gupta, Misra [39]
    shows both large and small/medium sized organizations do not want to share
    important data with others, which means security and privacy of information
    is the top-most concern among both organizations.'
    \autocite[4690]{HuangEtAl2021CriticSuccesFactor} & Production \\
System Security & security & `Therefore, further research should be conducted to
    establish whether security and privacy issues are a concern by all types of
    organizations or only large-scale organizations.'
    \autocite[4690]{HuangEtAl2021CriticSuccesFactor} & Production \\
System Security & security & `The data flowing through the system are extremely
    valuable, and therefore, studies by Ngai et al. (2004), Warren and
    Hutchinson (2000), Premkumar (2000) and Bouchbout and Alimazighi (2008)
    included data security as one of the important technical factor for
    successful implementation of web-based SCM systems.'
    \autocite[251]{SethEtAl2015DeveloModelSucces} & Production \\
System Security & security & `The technical factors that are critical to
    organizations in their adoption decision of Internet-based inter-
    organizational information systems (IBIS) was also studied by Soliman and
    Janz (2004) and Bouchbout and Alimazighi (2008) and suggested establishing
    costs, network reliability, data security, scalability and complexity as
    main factors that significantly affect the adoption decision of IBIS.'
    \autocite[252]{SethEtAl2015DeveloModelSucces} & Production \\
Team Knowledge, Skills \& Competencies & attrition rate of project team &
    `Findings - Results suggest that 9 critical failure items namely Inadequate
    resources, Poor User involvement, Users' resistance to change, High
    Attrition rate of project team members, Lack of top management commitment,
    Poor project management, Inadequate project team composition, Ineffective
    organizational change management and Unrealistic project scheduling have a
    high impact on ERP implementation and therefore deserve serious attention in
    the process of ERP implementation.'
    \autocite[496]{GargEtAl2013EmpiriStudyon} & Production \\
Team Knowledge, Skills \& Competencies & attrition rate of project team &
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    `Pareto chart per factors for ERP failure Pareto analysis suggest that nine
    critical failure items namely inadequate resources, poor user involvement,
    users' resistance to change, higher attrition rate of project team members,
    Lack of top management commitment, Poor project management, inadequate
    project team composition, ineffective organizational change management,
    unrealistic project scheduling have a high impact on ERP implementation and
    therefore deserve serious attention in the process of ERP implementation.'
    \autocite[507]{GargEtAl2013EmpiriStudyon} & Production \\
Team Knowledge, Skills \& Competencies & balanced team & `Frequency analysis of
    CSFs in literature CSF category Top management commitment and support Change
    management BPR and software configuration Training and job redesign Project
    team: the best and brightest Implementation strategy and timeframe
    Consultant selection and relationship Visioning and planning Balanced team
    Project champion Communication plan IT infrastructure Managing cultural
    change Post-implementation evaluation Selection of ERP Team morale and
    motivation Vanilla ERP Project management Troubleshooting/crises management
    Legacy system consideration Data conversion and integrity System testing
    Client consultation Project cost planning and management Build a business
    case Empowered decision makers Number of instances cited in literature 25 25
    23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have
    very often focused on only a specific aspect of the implementation process
    or a specific CSF.' \autocite[340]{FinneyEtAl2007ERPImplemCompil} &
    Production \\
Team Knowledge, Skills \& Competencies & balanced team & `P20: A balanced team
    for ERP implementation particularly comprised of both business/ functional
    and IT personnel are positively related to ERP implementation success.'
    \autocite[49]{KhattakEtAl2013InvestCriticSucces} & Production \\
Team Knowledge, Skills \& Competencies & balanced team & `The research concludes
    that: (1) Quality (adequacy) and quantity of training and education of
    personnel/users, role and effectiveness of management in reducing the users'
    resistance, use of steering committee for control purpose, top management
    support or involvement, clearly specified goals/objectives/scope regarding
    ERP system, ease of system's use and users' acceptance, vendor's support,
    project management, effective communication among the organizational members
    and a balanced team for ERP implementation are practically considered by the
    successful enterprises in China while planning and going for the
    implementation of the ERP system and are thus critical for the success of
    ERP systems implementation projects, ignoring of which may cause
    implementation failure in the Chinese organizations; (2) Some of the factors
    deemed imperative for ERP systems implementation success in the literature
    like; selection of a right full time project manager with extensive
    experience, presence/existence of a champion, integration of business
    planning with IT/ERP planning, use and role of consultant, change management
    strategy and programs, competency in use of IT and IT infrastructure,
    business...' \autocite[68]{KhattakEtAl2013InvestCriticSucces} & Production
    \\
Team Knowledge, Skills \& Competencies & changes in personnel & `Wilson et al.
    (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000) Markus, Tanis
    and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) Motwani et al.
    (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in personnel Lack of
    discipline Organisational resistance Lack of organisational commitment Poor
    data accuracy Limited user involvement Mismatch between organisation
    requirements and functionalities offered Lack of readiness for integration
    Lack of focus on user education and training Excessive customisation
    Inadequate organisational analysis Costs Project duration Technical
    challenges Management changes Table V. Implementation failure attributes
    JEIM 30,4 682 8.' \autocite[681]{AliEtAl2017ERPSystemImplem} & Production \\
Team Knowledge, Skills \& Competencies & competency & `The research concludes
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    that: (1) Quality (adequacy) and quantity of training and education of
    personnel/users, role and effectiveness of management in reducing the users'
    resistance, use of steering committee for control purpose, top management
    support or involvement, clearly specified goals/objectives/scope regarding
    ERP system, ease of system's use and users' acceptance, vendor's support,
    project management, effective communication among the organizational members
    and a balanced team for ERP implementation are practically considered by the
    successful enterprises in China while planning and going for the
    implementation of the ERP system and are thus critical for the success of
    ERP systems implementation projects, ignoring of which may cause
    implementation failure in the Chinese organizations; (2) Some of the factors
    deemed imperative for ERP systems implementation success in the literature
    like; selection of a right full time project manager with extensive
    experience, presence/existence of a champion, integration of business
    planning with IT/ERP planning, use and role of consultant, change management
    strategy and programs, competency in use of IT and IT infrastructure,
    business...' \autocite[68]{KhattakEtAl2013InvestCriticSucces} & Production
    \\
Team Knowledge, Skills \& Competencies & composition & `Important CSFs
    identified are: ERP team work and composition, top management support,
    business plan and vision, effective communication, project management,
    project champion, appropriate business and legacy systems, change management
    programmes, culture, BPR, minimum customisation, software development,
    testing, trouble shooting, monitoring, and evaluation of performance.'
    \autocite[675]{AliEtAl2017ERPSystemImplem} & Production \\
Team Knowledge, Skills \& Competencies & composition & `The most common causes
    of ERP implementation failures are a combination of poor planning and high
    software customisation (Scheer and Habbermann, 2000), lack of top management
    commitment; ineffective communication; insufficient training; lack of user
    support, poor project management, relying on legacy systems, inter-
    departmental conflicts, poor composition of project teams, failure in
    redesigning business processes and, lack of clarity about required changes.'
    \autocite[682]{AliEtAl2017ERPSystemImplem} & Production \\
Team Knowledge, Skills \& Competencies & composition & `Findings - Results
    suggest that 9 critical failure items namely Inadequate resources, Poor User
    involvement, Users' resistance to change, High Attrition rate of project
    team members, Lack of top management commitment, Poor project management,
    Inadequate project team composition, Ineffective organizational change
    management and Unrealistic project scheduling have a high impact on ERP
    implementation and therefore deserve serious attention in the process of ERP
    implementation.' \autocite[496]{GargEtAl2013EmpiriStudyon} & Production \\
Team Knowledge, Skills \& Competencies & composition & `Pareto chart per factors
    for ERP failure Pareto analysis suggest that nine critical failure items
    namely inadequate resources, poor user involvement, users' resistance to
    change, higher attrition rate of project team members, Lack of top
    management commitment, Poor project management, inadequate project team
    composition, ineffective organizational change management, unrealistic
    project scheduling have a high impact on ERP implementation and therefore
    deserve serious attention in the process of ERP implementation.'
    \autocite[507]{GargEtAl2013EmpiriStudyon} & Production \\
Team Knowledge, Skills \& Competencies & composition & `(4) The Project
    Management factor in this study is defined by team composition, project team
    competence, scope management, expectation management, communication within
    project team and budget control items which may affect the success of ERP
    implementation in Indian retail sector.'
    \autocite[1332]{GargEtAl2015FactorAffectERP} & Production \\
Team Knowledge, Skills \& Competencies & composition & `According to the
    literature, the most studied factors were: Top Management Support, Effective
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    Communication, Training, and Education, Business plan and vision, Project
    Management, BPR management, Change Management, Project team Composition/
    Teamwork, Project champion, ERP Choices, Technical Implementation,
    Technological Infrastructure, Legacy systems consideration.'
    \autocite[112]{MahrazEtAl2020CompilAnalysCritic} & Production \\
Team Knowledge, Skills \& Competencies & composition & `The findings of our
    study reveal that `appropriate business and IT legacy systems', `business
    plan/vision/goals/justification', `business process reengineering', `change
    management culture and programme', `communication', `ERP teamwork and
    composition', `monitoring and evaluation of performance', `project
    champion', `project management', `software/system development, testing and
    troubleshooting', `top management support', `data management', `ERP strategy
    and implementation methodology', `ERP vendor', `organizational
    characteristics', `fit between ERP and business/process', `national culture'
    and `country-related functional requirement' were the commonly extracted
    factors across these 10 countries/regions.'
    \autocite[548]{NgaiEtAl2008ExaminCriticSucces} & Production \\
Team Knowledge, Skills \& Competencies & composition & `Eleven critical factors
    were identified, such as ERP teamwork and composition, change management
    program and culture, top management support, business plan and vision,
    business process reengineering (BPR) and minimum customisation, effective
    communications, project management, software development, testing and
    troubleshooting, monitoring and evaluating performance, project champion,
    and appropriate business and IT legacy systems.'
    \autocite[6]{Rabaai2009IdentiCriticSucces} & Production \\
Team Knowledge, Skills \& Competencies & composition & `Based on the work by
    Markus and Tanis (2000), Nah and Delgado organised these factors into seven
    main categories: (1) Business plan and vision; (2) Change management; (3)
    Communication; (4) ERP team composition, skills, and compensation; (5)
    Project management; (6) Top management support and championship; and (7)
    System analysis, selection, and technical implementation.'
    \autocite[6]{Rabaai2009IdentiCriticSucces} & Production \\
Team Knowledge, Skills \& Competencies & composition & `Organisational factors
    traditionally found to affect implementation success, including management
    support, project communication, change management and team composition do
    not differentiate the public from the private sector, at least in the case
    of Jordan.' \autocite[97]{RabaaiEtAl2015CulturPerspeon} & Production \\
Team Knowledge, Skills \& Competencies & composition & `Lack of benefit
    realisation is not simply attributable to technical or managerial aspects
    however, since most items specifically addressing required training, change
    and team composition largely showed that these aspects were adequately
    understood and implemented.' \autocite[97]{RabaaiEtAl2015CulturPerspeon} &
    Production \\
Team Knowledge, Skills \& Competencies & composition & `Item Description 1 top
    management support 25 application project costs 2 effective communication 26
    interdepartmental cooperation 3 interdepartmental communication 27 dedicated
    resources 4 clear goal and objectives 28 ERP vendor relations 5 business
    plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's
    development tools 7 education on new business process 31 organizational
    characteristics 8 user training\& education 32 employee / team morale-
    motivation 9 user acceptance 33 leadership of the project team 10 managing
    cultural change 34 project team competence- composition 11 business process
    reengineering 35 ERP team work 12 customization 36 steering committee 13
    minimal customization 37 empowered decision makers 14 software configuration
    38 use of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
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    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Production \\
Team Knowledge, Skills \& Competencies & composition & `Related Sub-Factors 1
    (11) Business project reengineering (18) Implementation strategies (23)
    Management of expectations (24) Project management (32) Employee / team
    morale \& motivation (33) Leadership of the project team (34) Project team
    competence and composition 2 (14) Software configuration (21) IT
    infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30)
    Support of vendor development tools (38) Use of consultants 3 (40) Project
    champion (46) National culture (47) Country related functional requirements
    (48) Centralization 4 (1) Top management support (2) Effective communication
    (3) Interdepartmental communication (4) Clear goals and objectives (5)
    Business plan \& vision 5 (15) Data accuracy (16) Data integration (42) Data
    analysis and conversion 6 (7) Education on new business processes (8) User
    training and education (9) User acceptance (10) Managing cultural change
    this result maybe, end-users resist changing business processes instead they
    prefer customizations in ERP software.'
    \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Production \\
Team Knowledge, Skills \& Competencies & good project management team & `The
    authors find that top management support, good project management teams, and
    good communications are the top three most important critical successful
    factors during implementation.' \autocite[666]{AliEtAl2017ERPSystemImplem} &
    Production \\
Team Knowledge, Skills \& Competencies & project team & `CSFs for successful ERP
    implementation are identified as top management support, presence of a
    champion, good communication with stakeholders, effective project planning,
    business process re-engineering (BPR), and using a business analyst on the
    project team (Bancroft et al., 1998; Bingi et al., 1999).'
    \autocite[674]{AliEtAl2017ERPSystemImplem} & Production \\
Team Knowledge, Skills \& Competencies & project team & `They rate CSFs by a
    degree of importance during ERP implementation as follows: (1) top
    management support; (2) project team competence; (3) inter-departmental
    cooperation; (4) clear goals and objectives; (5) project management; (6)
    inter-departmental communication; (7) management of expectation; (8) project
    champion; (9) vendors' support; (10) careful package selection; (11) data
    analysis and conversion; (12) dedicated resources; (13) use of steering
    committee; (14) user training on software; (15) education on new business
    processes; (16) BPR; (17) minimal customisation; (18) architecture choices;
    (19) change management; (20) partnership with vendors; (21) use of vendors'
    tool; and (22) use of consultant.'
    \autocite[674]{AliEtAl2017ERPSystemImplem} & Production \\
Team Knowledge, Skills \& Competencies & project team & `The most common causes
    of ERP implementation failures are a combination of poor planning and high
    software customisation (Scheer and Habbermann, 2000), lack of top management
    commitment; ineffective communication; insufficient training; lack of user
    support, poor project management, relying on legacy systems, inter-
    departmental conflicts, poor composition of project teams, failure in
    redesigning business processes and, lack of clarity about required changes.'
    \autocite[682]{AliEtAl2017ERPSystemImplem} & Production \\
Team Knowledge, Skills \& Competencies & project team & `Project management: The
    study of Suganthalakshmi and Mothuvelayuthan (2012), concluded that the
    formation of the project team has robust influence on the ERP execution
    process and two significant issues are the combination of third-party
    professionals within the team and the preservation within the firm with the
    pertinent ERP knowledge.' \autocite[630]{AnjumEtAl2015FactorManipuERP} &
    Production \\
Team Knowledge, Skills \& Competencies & project team & `Lack of management
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    support, poor organizational culture, communication problems, financial
    management problems, lack of clarity on scope, project management problems,
    poor project team, ERP software misfit, poor solution implementer
    performance, poor quality of testing, outdated it infrastructure, lack of
    training, highly customized ERP, poor process design, lack of user
    involvement, resistance to change, unrealistic expectations are the main
    failure factors that need to be analyzed in detail.'
    \autocite[3]{CoşkunEtAl2022ERPFailurSystem} & Production \\
Team Knowledge, Skills \& Competencies & project team & `It should not be
    confused that many factors such as ``budget'', ``communication'', and
    ``project team'' are not examined in the ``Project Management Problems''
    category since they are examined in separate categories because many
    articles analyzed in this study show that project management is handled as
    project coordination.' \autocite[13]{CoşkunEtAl2022ERPFailurSystem} &
    Production \\
Team Knowledge, Skills \& Competencies & project team & `Frequency analysis of
    CSFs in literature CSF category Top management commitment and support Change
    management BPR and software configuration Training and job redesign Project
    team: the best and brightest Implementation strategy and timeframe
    Consultant selection and relationship Visioning and planning Balanced team
    Project champion Communication plan IT infrastructure Managing cultural
    change Post-implementation evaluation Selection of ERP Team morale and
    motivation Vanilla ERP Project management Troubleshooting/crises management
    Legacy system consideration Data conversion and integrity System testing
    Client consultation Project cost planning and management Build a business
    case Empowered decision makers Number of instances cited in literature 25 25
    23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have
    very often focused on only a specific aspect of the implementation process
    or a specific CSF.' \autocite[340]{FinneyEtAl2007ERPImplemCompil} &
    Production \\
Team Knowledge, Skills \& Competencies & project team & `Findings - Results
    suggest that 9 critical failure items namely Inadequate resources, Poor User
    involvement, Users' resistance to change, High Attrition rate of project
    team members, Lack of top management commitment, Poor project management,
    Inadequate project team composition, Ineffective organizational change
    management and Unrealistic project scheduling have a high impact on ERP
    implementation and therefore deserve serious attention in the process of ERP
    implementation.' \autocite[496]{GargEtAl2013EmpiriStudyon} & Production \\
Team Knowledge, Skills \& Competencies & project team & `These factors include,
    but not limited to, poor consultant effectiveness, ERP software misfit,
    unrealistic expectations from top management concerning the ERP systems,
    over-reliance on heavy customization, poor quality of Business Process
    Reengineering (BPR), high turnover rate of project team members, poor IT
    Infrastructure, functionality problems with the system, unclear concept of
    the nature and use of the ERP system from the users perspective, too tight
    project schedule, lack of formal communication, part-time dedication, etc.'
    \autocite[498]{GargEtAl2013EmpiriStudyon} & Production \\
Team Knowledge, Skills \& Competencies & project team & `Pareto chart per
    factors for ERP failure Pareto analysis suggest that nine critical failure
    items namely inadequate resources, poor user involvement, users' resistance
    to change, higher attrition rate of project team members, Lack of top
    management commitment, Poor project management, inadequate project team
    composition, ineffective organizational change management, unrealistic
    project scheduling have a high impact on ERP implementation and therefore
    deserve serious attention in the process of ERP implementation.'
    \autocite[507]{GargEtAl2013EmpiriStudyon} & Production \\
Team Knowledge, Skills \& Competencies & project team & `(4) The Project
    Management factor in this study is defined by team composition, project team
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    competence, scope management, expectation management, communication within
    project team and budget control items which may affect the success of ERP
    implementation in Indian retail sector.'
    \autocite[1332]{GargEtAl2015FactorAffectERP} & Production \\
Team Knowledge, Skills \& Competencies & project team & `Extrinsic(3)
    Organizational CSFs (15) People CSFs (12) Technological CSFs (5) ●
    Communication within the company ● Organization resistance ● Project budget
    ● Project management ● Implementation strategy ● Strategic goals and
    objectives ● Business process reengineering ● organizational culture ●
    knowledge base of the company ● Project planning and control ● Facilitating
    conditions ● Organization size ● The vision of the organization ● Readiness
    of organizations ● Clarity of potential cost ● User involvement ● Selection
    of vendor/consult ant ● Project team ● Top management support ● Training of
    user ● Trust on vendor ● Performance expectancy ● Effort expectancy ● Social
    influence ● Age ● Gender ● Highest degree attained ● Selection of ERP
    package ● IT infrastructure ● Data integrity and system testing.'
    \autocite[4686]{HuangEtAl2021CriticSuccesFactor} & Production \\
Team Knowledge, Skills \& Competencies & project team & `According to the
    literature, the most studied factors were: Top Management Support, Effective
    Communication, Training, and Education, Business plan and vision, Project
    Management, BPR management, Change Management, Project team Composition/
    Teamwork, Project champion, ERP Choices, Technical Implementation,
    Technological Infrastructure, Legacy systems consideration.'
    \autocite[112]{MahrazEtAl2020CompilAnalysCritic} & Production \\
Team Knowledge, Skills \& Competencies & project team & `In the private sector
    the project team was rarely perceived to consist of the best employees,
    whereas attitudes on this were more evenly distributed in the public
    sector.' \autocite[96]{RabaaiEtAl2015CulturPerspeon} & Production \\
Team Knowledge, Skills \& Competencies & project team & `Project teams may not
    have wished to include end users for their own reasons, and end users
    themselves may have been unwilling to change.'
    \autocite[98]{RabaaiEtAl2015CulturPerspeon} & Production \\
Team Knowledge, Skills \& Competencies & project team & `It should be noted that
    involving people with both business and technical knowledge into the project
    team is critical to achieve success (M Al-Mashari, AlMudimigh, \& Zairi,
    2003; Bajwa, Garcia, \& Mooney, 2004; King \& Burgess, 2006).'
    \autocite[45]{RavasanEtAl2014FCM-BaDynamiModeli} & Production \\
Team Knowledge, Skills \& Competencies & project team & `Item Description 1 top
    management support 25 application project costs 2 effective communication 26
    interdepartmental cooperation 3 interdepartmental communication 27 dedicated
    resources 4 clear goal and objectives 28 ERP vendor relations 5 business
    plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's
    development tools 7 education on new business process 31 organizational
    characteristics 8 user training\& education 32 employee / team morale-
    motivation 9 user acceptance 33 leadership of the project team 10 managing
    cultural change 34 project team competence- composition 11 business process
    reengineering 35 ERP team work 12 customization 36 steering committee 13
    minimal customization 37 empowered decision makers 14 software configuration
    38 use of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Production \\
Team Knowledge, Skills \& Competencies & project team & `Related Sub-Factors 1
    (11) Business project reengineering (18) Implementation strategies (23)
    Management of expectations (24) Project management (32) Employee / team
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    morale \& motivation (33) Leadership of the project team (34) Project team
    competence and composition 2 (14) Software configuration (21) IT
    infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30)
    Support of vendor development tools (38) Use of consultants 3 (40) Project
    champion (46) National culture (47) Country related functional requirements
    (48) Centralization 4 (1) Top management support (2) Effective communication
    (3) Interdepartmental communication (4) Clear goals and objectives (5)
    Business plan \& vision 5 (15) Data accuracy (16) Data integration (42) Data
    analysis and conversion 6 (7) Education on new business processes (8) User
    training and education (9) User acceptance (10) Managing cultural change
    this result maybe, end-users resist changing business processes instead they
    prefer customizations in ERP software.'
    \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Production \\
Team Knowledge, Skills \& Competencies & project team & `In addition, the
    project team should be empowered to define a clear program and required
    resources, set realistic milestones, and ensure interdepartmental
    cooperation.' \autocite[19]{ShaulEtAl2013CriticSuccesFactor} & Production \\
Team Knowledge, Skills \& Competencies & project team & `Such consequences can
    be avoided by open communication with top management, vendors, and
    consultants through the establishment of senior and professional steering
    committees, a balanced project team, and a ``responsible'' definition of
    success measures.' \autocite[19]{ShaulEtAl2013CriticSuccesFactor} &
    Production \\
Team Knowledge, Skills \& Competencies & project team & `● IT infrastructure ●
    System Training and knowledge transfer ● Over-dependence on detailed and
    heavy customization ● High turnover rate of project team members ● Business
    process re-engineering ● User's resistance to transform ● ERP system misfit
    Considering these critical factors, specifically affecting the agricultural
    business sectors in Malaysia, there are a few possible suggestions
    proposed.' \autocite[2055]{ShukorEtAl2020EnterpResourPlanni} & Production \\
Team Knowledge, Skills \& Competencies & team competence & `They rate CSFs by a
    degree of importance during ERP implementation as follows: (1) top
    management support; (2) project team competence; (3) inter-departmental
    cooperation; (4) clear goals and objectives; (5) project management; (6)
    inter-departmental communication; (7) management of expectation; (8) project
    champion; (9) vendors' support; (10) careful package selection; (11) data
    analysis and conversion; (12) dedicated resources; (13) use of steering
    committee; (14) user training on software; (15) education on new business
    processes; (16) BPR; (17) minimal customisation; (18) architecture choices;
    (19) change management; (20) partnership with vendors; (21) use of vendors'
    tool; and (22) use of consultant.'
    \autocite[674]{AliEtAl2017ERPSystemImplem} & Production \\
Team Knowledge, Skills \& Competencies & team competence & `(4) The Project
    Management factor in this study is defined by team composition, project team
    competence, scope management, expectation management, communication within
    project team and budget control items which may affect the success of ERP
    implementation in Indian retail sector.'
    \autocite[1332]{GargEtAl2015FactorAffectERP} & Production \\
Team Knowledge, Skills \& Competencies & team competence & `Item Description 1
    top management support 25 application project costs 2 effective
    communication 26 interdepartmental cooperation 3 interdepartmental
    communication 27 dedicated resources 4 clear goal and objectives 28 ERP
    vendor relations 5 business plan-vision 29 ongoing vendor support 6 change
    management 30 use of vendor's development tools 7 education on new business
    process 31 organizational characteristics 8 user training\& education 32
    employee / team morale-motivation 9 user acceptance 33 leadership of the
    project team 10 managing cultural change 34 project team competence-
    composition 11 business process reengineering 35 ERP team work 12
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    customization 36 steering committee 13 minimal customization 37 empowered
    decision makers 14 software configuration 38 use of consultants 15 data
    accuracy 39 obtain business analysts 16 data analysis- conversion 40 project
    champion 17 software development testing \& troubleshooting 41 appropriate
    business-legacy systems 18 implementation strategies 42 data integration 19
    ERP package selection 43 scope \& vision based performance 20 feasible
    evaluation of ERP project 44 monitoring- evaluation of performance 21 IT
    infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Production \\
Team Knowledge, Skills \& Competencies & team competence & `Related Sub-Factors
    1 (11) Business project reengineering (18) Implementation strategies (23)
    Management of expectations (24) Project management (32) Employee / team
    morale \& motivation (33) Leadership of the project team (34) Project team
    competence and composition 2 (14) Software configuration (21) IT
    infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30)
    Support of vendor development tools (38) Use of consultants 3 (40) Project
    champion (46) National culture (47) Country related functional requirements
    (48) Centralization 4 (1) Top management support (2) Effective communication
    (3) Interdepartmental communication (4) Clear goals and objectives (5)
    Business plan \& vision 5 (15) Data accuracy (16) Data integration (42) Data
    analysis and conversion 6 (7) Education on new business processes (8) User
    training and education (9) User acceptance (10) Managing cultural change
    this result maybe, end-users resist changing business processes instead they
    prefer customizations in ERP software.'
    \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Production \\
Team Knowledge, Skills \& Competencies & team work & `Important CSFs identified
    are: ERP team work and composition, top management support, business plan
    and vision, effective communication, project management, project champion,
    appropriate business and legacy systems, change management programmes,
    culture, BPR, minimum customisation, software development, testing, trouble
    shooting, monitoring, and evaluation of performance.'
    \autocite[675]{AliEtAl2017ERPSystemImplem} & Production \\
Team Knowledge, Skills \& Competencies & team work & `Item Description 1 top
    management support 25 application project costs 2 effective communication 26
    interdepartmental cooperation 3 interdepartmental communication 27 dedicated
    resources 4 clear goal and objectives 28 ERP vendor relations 5 business
    plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's
    development tools 7 education on new business process 31 organizational
    characteristics 8 user training\& education 32 employee / team morale-
    motivation 9 user acceptance 33 leadership of the project team 10 managing
    cultural change 34 project team competence- composition 11 business process
    reengineering 35 ERP team work 12 customization 36 steering committee 13
    minimal customization 37 empowered decision makers 14 software configuration
    38 use of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Production \\
Team Knowledge, Skills \& Competencies & teamwork & `According to the
    literature, the most studied factors were: Top Management Support, Effective
    Communication, Training, and Education, Business plan and vision, Project
    Management, BPR management, Change Management, Project team Composition/
    Teamwork, Project champion, ERP Choices, Technical Implementation,
    Technological Infrastructure, Legacy systems consideration.'
    \autocite[112]{MahrazEtAl2020CompilAnalysCritic} & Production \\
Team Knowledge, Skills \& Competencies & teamwork & `The findings of our study
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    reveal that `appropriate business and IT legacy systems', `business
    plan/vision/goals/justification', `business process reengineering', `change
    management culture and programme', `communication', `ERP teamwork and
    composition', `monitoring and evaluation of performance', `project
    champion', `project management', `software/system development, testing and
    troubleshooting', `top management support', `data management', `ERP strategy
    and implementation methodology', `ERP vendor', `organizational
    characteristics', `fit between ERP and business/process', `national culture'
    and `country-related functional requirement' were the commonly extracted
    factors across these 10 countries/regions.'
    \autocite[548]{NgaiEtAl2008ExaminCriticSucces} & Production \\
Team Knowledge, Skills \& Competencies & teamwork & `Eleven critical factors
    were identified, such as ERP teamwork and composition, change management
    program and culture, top management support, business plan and vision,
    business process reengineering (BPR) and minimum customisation, effective
    communications, project management, software development, testing and
    troubleshooting, monitoring and evaluating performance, project champion,
    and appropriate business and IT legacy systems.'
    \autocite[6]{Rabaai2009IdentiCriticSucces} & Production \\
Team Knowledge, Skills \& Competencies & teamwork & `Critical success factors
    identified in Turkish studies Author (s) Critical Success Factors Baskak\&
    Cetisli (2003) Top management support, business plan and vision, ERP
    teamwork, ERP package selection, change management, user training and
    education, effective communication, project management, data integration,
    software testing and troubleshooting, appropriate legacy systems, monitoring
    and evaluation of performance.' \autocite[62]{SaygiliEtAl2017EndUsersPercep}
    & Production \\
Team Knowledge, Skills \& Competencies & turnover rate of project team & `These
    factors include, but not limited to, poor consultant effectiveness, ERP
    software misfit, unrealistic expectations from top management concerning the
    ERP systems, over-reliance on heavy customization, poor quality of Business
    Process Reengineering (BPR), high turnover rate of project team members,
    poor IT Infrastructure, functionality problems with the system, unclear
    concept of the nature and use of the ERP system from the users perspective,
    too tight project schedule, lack of formal communication, part-time
    dedication, etc.' \autocite[498]{GargEtAl2013EmpiriStudyon} & Production \\
Team Knowledge, Skills \& Competencies & turnover rate of project team & `● IT
    infrastructure ● System Training and knowledge transfer ● Over-dependence on
    detailed and heavy customization ● High turnover rate of project team
    members ● Business process re-engineering ● User's resistance to transform ●
    ERP system misfit Considering these critical factors, specifically affecting
    the agricultural business sectors in Malaysia, there are a few possible
    suggestions proposed.' \autocite[2055]{ShukorEtAl2020EnterpResourPlanni} &
    Production \\
Technical Challenges & technical challenges & `Wilson et al. (1994) Sun et al.
    (1997) Soh et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000)
    and Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons
    and Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline
    Organisational resistance Lack of organisational commitment Poor data
    accuracy Limited user involvement Mismatch between organisation requirements
    and functionalities offered Lack of readiness for integration Lack of focus
    on user education and training Excessive customisation Inadequate
    organisational analysis Costs Project duration Technical challenges
    Management changes Table V. Implementation failure attributes JEIM 30,4 682
    8.' \autocite[681]{AliEtAl2017ERPSystemImplem} & Production \\
Technical Challenges & technical challenges & `The executives are required to
    have a complete understanding of the technical challenges involved in
    adopting a new enterprisewide system, and proposed three elements to
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    consider a) network upgrade, b) hardware upgrade and c) providing a global
    support.' \autocite[114]{MahrazEtAl2020CompilAnalysCritic} & Production \\
Technical Challenges & technical issues & `They observe that vendor failure to
    adapt to local culture, BPR, managing local human resources, lack of
    information sharing, failure to understand cultural characteristics, lack of
    adaptability towards a changing business and economic environment, lack of
    cost control functions (i.e. adapting to changing costs), and failure to
    understand technical issues are the main causes of ERP implementation
    failure.' \autocite[681]{AliEtAl2017ERPSystemImplem} & Production \\
Technical Challenges & technical issues & `In another country-specific study,
    Amid et al. (2012) examine critical failure factors in Iranian companies and
    identify and classify failure attributes as vendors and consultants, human
    resources, managerial, project management, processes, organisational, and
    technical issues (Table V).' \autocite[681]{AliEtAl2017ERPSystemImplem} &
    Production \\
Technical Challenges & technical issues & `One of the main problems in ERP
    projects is focusing on technical and financial aspects of a project and
    neglecting to take into account the non-technical issues like people [70],
    while many ERP studies indicate that failure is largely due to human
    resources issues, rather than technical factors.'
    \autocite[232]{AmidEtAl2012IdentiClassiERP} & Production \\
Technical Challenges & technical issues & `The last failure component relates to
    technical issues.' \autocite[233]{AmidEtAl2012IdentiClassiERP} & Production
    \\
Technical Challenges & technical issues & `It has been noted that one of the
    main problems in ERP projects, is focusing on technical and financial
    aspects of a project and neglecting to take into account the nontechnical
    issues like people [70], while many ERP studies indicate that failure is
    largely due to organizational and social, rather than technical factors.'
    \autocite[233]{AmidEtAl2012IdentiClassiERP} & Production \\
Technical Challenges & technical issues & `Technical issues like system
    architecture, language, data modeling and ERP integration with other systems
    like Supply Chain Management (SCM) systems are other branches that have made
    a contribution.' \autocite[79]{BasogluEtAl2007OrganiAdoptiEnterp} &
    Production \\
Technical Challenges & technical issues & `Despite the benefits that can be
    achieved from a successful ERP implementation, project managers focus on the
    technical and financial aspects of a project and neglect to take into
    account the non-technical issues like people (Genoulaz \& Millet, 2006).'
    \autocite[79]{BasogluEtAl2007OrganiAdoptiEnterp} & Production \\
Technical Challenges & technical issues & `About that issue, Xue et al. (2005)
    claimed that cultural, environmental and technical issues play an important
    role on leader brands' failure in Chinese companies.'
    \autocite[83]{BasogluEtAl2007OrganiAdoptiEnterp} & Production \\
Technical Challenges & technical issues & `Project Team: The project team
    members must have acceptable knowledge in the business processes and
    technical issues of the software.'
    \autocite[108]{Chan2013AustraQuantiSurvey} & Production \\
Technical Challenges & technical issues & `The organization where the
    implementation went unsuccessful, the vendors played very limited and
    ineffective role as their response rate in rectifying the technical issues
    was also quite low.' \autocite[62]{KhattakEtAl2013InvestCriticSucces} &
    Production \\
Technical Challenges & technical issues & `Therefore, the consultant should have
    multiple skills covering functional, technical issues and in-depth knowledge
    of the software[17]- [19] Additionally, project manager appointed should be
    experienced, mix of business and IT knowledge, strong leadership skills and
    have adequate authority to manage all aspects of the project.'
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    \autocite[37]{OsmanEtAl2019ERPCriticSucces} & Production \\
Technical Challenges & technical issues & `ERP failure factors and categories
    Failure Categories Failure Factors C4: Project Management F1: Conflicts
    between organization and consultants/ vendor C5: Technical F2: High rate of
    system customization C5: Technical F3: Data management issues C2: Human
    Resources F4: Inadequate education and training C2: Human Resources F5:
    Inadequate user involvement C2: Human Resources F6: Ineffective
    communications system C3: Organizational F7: Internal conflicts between
    departments C2: Human Resources F8: Inadequate change management C3:
    Organizational F9: Lack of performance measurement system C3: Organizational
    F10: Misfit between organization culture and ERP system C3: Organizational
    F11: Misfit between organization structure and ERP system C3: Organizational
    F12: Misfits between the IT and business strategies C1: Environmental F13:
    Environmental pressures C3: Organizational F14: Poor business process
    reengineering C1: Environmental F15: Poor consultant C4: Project Management
    F16: Poor project management C4: Project Management F17: Poor risk
    management C3: Organizational F18: Poor top management support C5: Technical
    F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...'
    \autocite[42]{RavasanEtAl2014FCM-BaDynamiModeli} & Production \\
Technical Challenges & technical issues & `One of the main problems in ERP
    projects is focusing on technical and financial aspects of a project and
    neglecting to take into account the non-technical issues like people (Amid,
    et al., 2012; Botta-Genoulaz \& Millet, 2006), while many ERP studies
    indicate that failure is largely due to human resources issues, rather than
    technical factors.' \autocite[45]{RavasanEtAl2014FCM-BaDynamiModeli} &
    Production \\
Technical Challenges & technical issues & `Then, we have scenario 5 or technical
    category (high rate of system customization, data management issues, IT
    technical issues, poor quality of testing) in the last order of effect size
    on failure modes.' \autocite[45]{RavasanEtAl2014FCM-BaDynamiModeli} &
    Production \\
Technical Challenges & technical issues & `The reason often cited are the
    technical issues involved in implementing these systems.'
    \autocite[249]{SethEtAl2015DeveloModelSucces} & Production \\
Test Automation & test automation & `Even though test automation tools for ERP
    systems are expensive and are often not able to cover individually developed
    parts of the system, test automation is a way to reach a high
    standardization of the testing process.'
    \autocite[665]{BarthEtAl2019CriticSuccesFactor} & Production \\
Testing & testing & `Important CSFs identified are: ERP team work and
    composition, top management support, business plan and vision, effective
    communication, project management, project champion, appropriate business
    and legacy systems, change management programmes, culture, BPR, minimum
    customisation, software development, testing, trouble shooting, monitoring,
    and evaluation of performance.' \autocite[675]{AliEtAl2017ERPSystemImplem} &
    Production \\
Testing & testing & `Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie
    and Tanis (2000) identify several other attributes associated with
    implementation failures, including approaching ERP implementation from an
    excessively functional perspective, inappropriately cutting the scope of the
    project, eliminating user training, inadequate testing, not improving
    business processes initially, underestimating data quality problems, fragile
    human capital, and data migration problems.'
    \autocite[680]{AliEtAl2017ERPSystemImplem} & Production \\
Testing & testing & `Lesser, but still important CSFs are, having a good
    business plan, vision, having a project champion, appropriate business and
    legacy systems, change management programmes, culture, BPR, minimum
    customisation, software development, testing, trouble shooting, monitoring,
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    and the evaluation of performance (Markus, Axline, Petrie and Tanis, 2000;
    Bancroft et al., 1998; Bingi et al., 1999; Nah et al., 2001; Umble et al.,
    2003; Ehie and Madsen, 2005; Sarkar and Lee, 2003; Umble et al., 2003; Kim
    et al., 2005; Motwani et al., 2005; Nah and Delgado, 2006; Maguire et al.,
    2010).' \autocite[682]{AliEtAl2017ERPSystemImplem} & Production \\
Testing & testing & `Two researchers conducted a research study on the success
    issues of ERP which identified ten successive issues through investigate ten
    selective articles which are: effective decision making, Business Plan and
    vision, project management, effective communication, testing and
    troubleshooting, appropriate business and legacy system, ERP teamwork and
    composition, top management support and software development (Nah and Lau,
    2001).' \autocite[628]{AnjumEtAl2015FactorManipuERP} & Production \\
Testing & testing & `The Big Bang implementation strategy needs synchronized
    implementation of manifold modules of ERP systems, whereas, phased
    implementation includes developing, testing, designing and installing
    dissimilar modules of the similar ERP package.'
    \autocite[629]{AnjumEtAl2015FactorManipuERP} & Production \\
Testing & testing & `The respective ERP software upgrade phase consists of 11
    sub-phases, namely design of an upgrade project methodology, research of
    upgrade options, develop a business case, full assessment of modifications
    in the current version and technical environment, full assessments of the
    new functionality and technical requirements in each (potential) upgrade
    option, impact analysis between the new upgrade version and the existing
    version, install the new version onto the development system, construct the
    new system, thorough testing of the upgrade system, trial upgrades, and
    conversion or go live.' \autocite[661]{BarthEtAl2019CriticSuccesFactor} &
    Production \\
Testing & testing & `(5) System testing: system testing is one of the most
    important tasks to ensure an unobstructed operation of the ERP system after
    the upgrade procedure (L).' \autocite[665]{BarthEtAl2019CriticSuccesFactor}
    & Production \\
Testing & testing & `Even though test automation tools for ERP systems are
    expensive and are often not able to cover individually developed parts of
    the system, test automation is a way to reach a high standardization of the
    testing process.' \autocite[665]{BarthEtAl2019CriticSuccesFactor} &
    Production \\
Testing & testing & `System testing should not only focus on functional testing,
    but non-functional factors, such as performance and reliability, have to be
    part of the process.' \autocite[665]{BarthEtAl2019CriticSuccesFactor} &
    Production \\
Testing & testing & `H proposes to integrate key users not only in the planning
    phase but also in the testing phase as they are able to deliver valuable
    input for the definition of test scenarios and test cases (B).'
    \autocite[666]{BarthEtAl2019CriticSuccesFactor} & Production \\
Testing & testing & `This leads to the next success factor, system testing,
    which should not only be executed by IT staff but rather by key users and
    process owners, who bring along process knowledge and therefore, can
    guarantee correct functionality.'
    \autocite[669]{BarthEtAl2019CriticSuccesFactor} & Production \\
Testing & testing & `Many factors, such as project management, team composition,
    communication, system testing and external support, are crucial for ERP
    implementation projects as well as for upgrade projects.'
    \autocite[670]{BarthEtAl2019CriticSuccesFactor} & Production \\
Testing & testing & `Lack of management support, poor organizational culture,
    communication problems, financial management problems, lack of clarity on
    scope, project management problems, poor project team, ERP software misfit,
    poor solution implementer performance, poor quality of testing, outdated it
    infrastructure, lack of training, highly customized ERP, poor process
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    design, lack of user involvement, resistance to change, unrealistic
    expectations are the main failure factors that need to be analyzed in
    detail.' \autocite[3]{CoşkunEtAl2022ERPFailurSystem} & Production \\
Testing & testing & `During the final stages of the implementation process, the
    project team should consider the inclusion of testing exercises (Kumar et
    al., 2002; Nah et al., 2001; Al-Mashari et al., 2003) as well as simulation
    exercises before the system ``goes live'' (Yusuf et al., 2004).'
    \autocite[339]{FinneyEtAl2007ERPImplemCompil} & Production \\
Testing & testing & `Frequency analysis of CSFs in literature CSF category Top
    management commitment and support Change management BPR and software
    configuration Training and job redesign Project team: the best and brightest
    Implementation strategy and timeframe Consultant selection and relationship
    Visioning and planning Balanced team Project champion Communication plan IT
    infrastructure Managing cultural change Post-implementation evaluation
    Selection of ERP Team morale and motivation Vanilla ERP Project management
    Troubleshooting/crises management Legacy system consideration Data
    conversion and integrity System testing Client consultation Project cost
    planning and management Build a business case Empowered decision makers
    Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7
    7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a
    specific aspect of the implementation process or a specific CSF.'
    \autocite[340]{FinneyEtAl2007ERPImplemCompil} & Production \\
Testing & testing & `Testing and troubleshooting of the ERP implementation
    process is important due to ERP's critical role and complexity.'
    \autocite[441]{GargEtAl2014FactorInflueERP} & Production \\
Testing & testing & `In contrast, except for a few papers e.g., Peng and Nunes
    [8] Hasan, Miah [9], limited research has been reported to examine the post-
    implementation issues of Cloud ERP including critical processes such as
    testing and checking reliability of systems, or evaluating the benefits of
    system implementations.' \autocite[4683]{HuangEtAl2021CriticSuccesFactor} &
    Production \\
Testing & testing & `Extrinsic(3) Organizational CSFs (15) People CSFs (12)
    Technological CSFs (5) ● Communication within the company ● Organization
    resistance ● Project budget ● Project management ● Implementation strategy ●
    Strategic goals and objectives ● Business process reengineering ●
    organizational culture ● knowledge base of the company ● Project planning
    and control ● Facilitating conditions ● Organization size ● The vision of
    the organization ● Readiness of organizations ● Clarity of potential cost ●
    User involvement ● Selection of vendor/consult ant ● Project team ● Top
    management support ● Training of user ● Trust on vendor ● Performance
    expectancy ● Effort expectancy ● Social influence ● Age ● Gender ● Highest
    degree attained ● Selection of ERP package ● IT infrastructure ● Data
    integrity and system testing.'
    \autocite[4686]{HuangEtAl2021CriticSuccesFactor} & Production \\
Testing & testing & `The findings of our study reveal that `appropriate business
    and IT legacy systems', `business plan/vision/goals/justification',
    `business process reengineering', `change management culture and programme',
    `communication', `ERP teamwork and composition', `monitoring and evaluation
    of performance', `project champion', `project management', `software/system
    development, testing and troubleshooting', `top management support', `data
    management', `ERP strategy and implementation methodology', `ERP vendor',
    `organizational characteristics', `fit between ERP and business/process',
    `national culture' and `country-related functional requirement' were the
    commonly extracted factors across these 10 countries/regions.'
    \autocite[548]{NgaiEtAl2008ExaminCriticSucces} & Production \\
Testing & testing & `Eleven critical factors were identified, such as ERP
    teamwork and composition, change management program and culture, top
    management support, business plan and vision, business process reengineering
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    (BPR) and minimum customisation, effective communications, project
    management, software development, testing and troubleshooting, monitoring
    and evaluating performance, project champion, and appropriate business and
    IT legacy systems.' \autocite[6]{Rabaai2009IdentiCriticSucces} & Production
    \\
Testing & testing & `The factors identified were management and leadership,
    visioning and planning, ERP package selection, communication process
    management, training and education, project management, legacy systems
    management, system integration, system testing, cultural and structural
    changes, and performance evaluation and management.'
    \autocite[6]{Rabaai2009IdentiCriticSucces} & Production \\
Testing & testing & `3 Note: Other critical success factors were found in the
    reviewed articles, such as: system testing, building a business case, and
    empowered decision makers.' \autocite[7]{Rabaai2009IdentiCriticSucces} &
    Production \\
Testing & testing & `Similarly, on technical aspects, testing and system
    integration were perceived as generally effective, though there were
    substantial minorities in each sector who did not consider that departments
    had been integrated by the ERP.' \autocite[97]{RabaaiEtAl2015CulturPerspeon}
    & Production \\
Testing & testing & `Critical success factors identified in Turkish studies
    Author (s) Critical Success Factors Baskak\& Cetisli (2003) Top management
    support, business plan and vision, ERP teamwork, ERP package selection,
    change management, user training and education, effective communication,
    project management, data integration, software testing and troubleshooting,
    appropriate legacy systems, monitoring and evaluation of performance.'
    \autocite[62]{SaygiliEtAl2017EndUsersPercep} & Production \\
Testing & testing & `Item Description 1 top management support 25 application
    project costs 2 effective communication 26 interdepartmental cooperation 3
    interdepartmental communication 27 dedicated resources 4 clear goal and
    objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor
    support 6 change management 30 use of vendor's development tools 7 education
    on new business process 31 organizational characteristics 8 user training\&
    education 32 employee / team morale-motivation 9 user acceptance 33
    leadership of the project team 10 managing cultural change 34 project team
    competence- composition 11 business process reengineering 35 ERP team work
    12 customization 36 steering committee 13 minimal customization 37 empowered
    decision makers 14 software configuration 38 use of consultants 15 data
    accuracy 39 obtain business analysts 16 data analysis- conversion 40 project
    champion 17 software development testing \& troubleshooting 41 appropriate
    business-legacy systems 18 implementation strategies 42 data integration 19
    ERP package selection 43 scope \& vision based performance 20 feasible
    evaluation of ERP project 44 monitoring- evaluation of performance 21 IT
    infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Production \\
Time & milestone & `Therefore, it involves not only the planning stages, but
    also the allocating of responsibilities to various players, the definition
    of milestones and critical paths, training and human resource planning, and
    finally the determination of measures of success (Nah et al., 2001).'
    \autocite[336]{FinneyEtAl2007ERPImplemCompil} & Production \\
Time & milestone & `In addition, the project team should be empowered to define
    a clear program and required resources, set realistic milestones, and ensure
    interdepartmental cooperation.'
    \autocite[19]{ShaulEtAl2013CriticSuccesFactor} & Production \\
Time & project duration & `Wilson et al. (1994) Sun et al. (1997) Soh et al.
    (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and Markus,
    Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and Adam
    (2005) Kamhawi (2008) Changes in personnel Lack of discipline Organisational
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    resistance Lack of organisational commitment Poor data accuracy Limited user
    involvement Mismatch between organisation requirements and functionalities
    offered Lack of readiness for integration Lack of focus on user education
    and training Excessive customisation Inadequate organisational analysis
    Costs Project duration Technical challenges Management changes Table V.
    Implementation failure attributes JEIM 30,4 682 8.'
    \autocite[681]{AliEtAl2017ERPSystemImplem} & Production \\
Time & schedule & `The authors report risk factors such as loss of qualified IT
    experts after implementation, inaccurate master production schedules, user
    resistance, loss of ERP-related know-how, lack of vendor support, failure to
    produce an appropriate material requirement plan, and inefficient
    integration between modules are primary risk factors that can affect the
    viability of ERP projects.' \autocite[678]{AliEtAl2017ERPSystemImplem} &
    Production \\
Time & schedule & `These factors include, but not limited to, poor consultant
    effectiveness, ERP software misfit, unrealistic expectations from top
    management concerning the ERP systems, over-reliance on heavy customization,
    poor quality of Business Process Reengineering (BPR), high turnover rate of
    project team members, poor IT Infrastructure, functionality problems with
    the system, unclear concept of the nature and use of the ERP system from the
    users perspective, too tight project schedule, lack of formal communication,
    part-time dedication, etc.' \autocite[498]{GargEtAl2013EmpiriStudyon} &
    Production \\
Time & schedule & `Developing software systems is an expensive, and often a
    difficult process as software development projects are affected by a series
    of problems, such as poor project management, cost and schedule overruns,
    poor quality software and under-motivated developers.'
    \autocite[500]{GargEtAl2013EmpiriStudyon} & Production \\
Time & schedule & `As Bradley (2008) argued that a project could be said
    successful only if it is got to be completed within the scheduled time,
    allocated budget and bringing positive impact on the entire organization
    therefore, on the basis of the same criteria cases 1,2,3,4.5,6,8,9,10 \& 12
    were classed as successful and cases 7 \& 11 were termed as unsuccessful.'
    \autocite[53]{KhattakEtAl2013InvestCriticSucces} & Production \\
Time & schedule & `For ERP implementation, a clear and welldefined project plan,
    including the goals, objectives, strategy, scope, and schedule of the
    project, are significant issues in project management.'
    \autocite[557]{NgaiEtAl2008ExaminCriticSucces} & Production \\
Time & schedule & `Such difficulties can be more than pain or inconvenience:
    reports consistently note that the majority of ERP implementations fail,
    with cost and schedule overruns, non-realisation of benefits, failure to
    recoup costs, and satisfaction below 50% on various dimensions (Krigsman,
    2013).' \autocite[86]{RabaaiEtAl2015CulturPerspeon} & Production \\
Time & schedule & `Customisation increases project time, ruins schedules,
    introduce new bugs into the system, and make the upgrade to new release
    harder (Shehab et al. 2004).' \autocite[98]{RabaaiEtAl2015CulturPerspeon} &
    Production \\
Time & scheduling & `Findings - Results suggest that 9 critical failure items
    namely Inadequate resources, Poor User involvement, Users' resistance to
    change, High Attrition rate of project team members, Lack of top management
    commitment, Poor project management, Inadequate project team composition,
    Ineffective organizational change management and Unrealistic project
    scheduling have a high impact on ERP implementation and therefore deserve
    serious attention in the process of ERP implementation.'
    \autocite[496]{GargEtAl2013EmpiriStudyon} & Production \\
Time & scheduling & `Pareto chart per factors for ERP failure Pareto analysis
    suggest that nine critical failure items namely inadequate resources, poor
    user involvement, users' resistance to change, higher attrition rate of
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    project team members, Lack of top management commitment, Poor project
    management, inadequate project team composition, ineffective organizational
    change management, unrealistic project scheduling have a high impact on ERP
    implementation and therefore deserve serious attention in the process of ERP
    implementation.' \autocite[507]{GargEtAl2013EmpiriStudyon} & Production \\
Time & time & `Summarising, Velcu (2010), using an analytical approach to
    investigate ERP system implementations, reports that when ERP system
    implementation strategies are aligned with business strategy, it is more
    likely that ERP implementation will be completed on budget and on time.'
    \autocite[678]{AliEtAl2017ERPSystemImplem} & Production \\
Time & time & `C states: ``Projects have to meet time, budget and scope targets
    to be called successful.'' H, on the other hand, thinks time is not the main
    priority in ERP upgrade projects, as long as there is a usable system in
    place and productivity is not endangered.'
    \autocite[663]{BarthEtAl2019CriticSuccesFactor} & Production \\
Time & time & `Frequency analysis of CSFs in literature CSF category Top
    management commitment and support Change management BPR and software
    configuration Training and job redesign Project team: the best and brightest
    Implementation strategy and timeframe Consultant selection and relationship
    Visioning and planning Balanced team Project champion Communication plan IT
    infrastructure Managing cultural change Post-implementation evaluation
    Selection of ERP Team morale and motivation Vanilla ERP Project management
    Troubleshooting/crises management Legacy system consideration Data
    conversion and integrity System testing Client consultation Project cost
    planning and management Build a business case Empowered decision makers
    Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7
    7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a
    specific aspect of the implementation process or a specific CSF.'
    \autocite[340]{FinneyEtAl2007ERPImplemCompil} & Production \\
Time & time & `These factors include, but not limited to, poor consultant
    effectiveness, ERP software misfit, unrealistic expectations from top
    management concerning the ERP systems, over-reliance on heavy customization,
    poor quality of Business Process Reengineering (BPR), high turnover rate of
    project team members, poor IT Infrastructure, functionality problems with
    the system, unclear concept of the nature and use of the ERP system from the
    users perspective, too tight project schedule, lack of formal communication,
    part-time dedication, etc.' \autocite[498]{GargEtAl2013EmpiriStudyon} &
    Production \\
Time & time & `Several essential CSFs have been turned into valid and measurable
    constructs covering both technical and organisational factors (Bhatti,
    2005), Many studies around this time detailed other specific CSFs applicable
    in implementation, but lacked attention to stakeholder perspective and
    change management aspects (Finney and Corbett, 2007).'
    \autocite[87]{RabaaiEtAl2015CulturPerspeon} & Production \\
Time & time & `Both sectors also showed a similar profile on implementation time
    with only 11% of the participants' projects completing on time, around 40%
    up to 6 months late and 44% taking up to a year.'
    \autocite[92]{RabaaiEtAl2015CulturPerspeon} & Production \\
Time & time & `Customisation increases project time, ruins schedules, introduce
    new bugs into the system, and make the upgrade to new release harder (Shehab
    et al. 2004).' \autocite[98]{RabaaiEtAl2015CulturPerspeon} & Production \\
Time & time & `Public organisations have more rigid hierarchies and structures,
    as well as more bureaucracy generally, and with consensus decision-making
    also delaying the process considerably, the deep culture of public sector
    organisations affects timely implementation.'
    \autocite[98]{RabaaiEtAl2015CulturPerspeon} & Production \\
Time & time & `Generally, it is believed that the project is partially failed
    because it is not completed within time and/or budget (process failure), the
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    ERP systems do not live up to user expectations (expectation failure), and
    there is no match between ERP systems and the planned objectives
    (correspondence failure).' \autocite[40]{RavasanEtAl2014FCM-BaDynamiModeli}
    & Production \\
Time & time & `...mentation evaluation 22 implementation time 46 national
    culture 23 management of expectations 47 country related functional
    requirements 24 project management 48 centralization'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Production \\
Time & time & `Fourth, deploy supporting tools to control the data quality
    process by monitoring all dimensions, that is, amount, accuracy, timeliness,
    completeness, consistency, accessibility, and multiple sources of the same
    data.' \autocite[19]{ShaulEtAl2013CriticSuccesFactor} & Production \\
Tools & tool & `They rate CSFs by a degree of importance during ERP
    implementation as follows: (1) top management support; (2) project team
    competence; (3) inter-departmental cooperation; (4) clear goals and
    objectives; (5) project management; (6) inter-departmental communication;
    (7) management of expectation; (8) project champion; (9) vendors' support;
    (10) careful package selection; (11) data analysis and conversion; (12)
    dedicated resources; (13) use of steering committee; (14) user training on
    software; (15) education on new business processes; (16) BPR; (17) minimal
    customisation; (18) architecture choices; (19) change management; (20)
    partnership with vendors; (21) use of vendors' tool; and (22) use of
    consultant.' \autocite[674]{AliEtAl2017ERPSystemImplem} & Production \\
Tools & tool & `A strategic partnership with the software vendor enables using
    implementation tools such as process modeling, templates for specific
    business practices or packages of software, services and support, as well as
    bestpractices (Somers and Nelson, 2004).'
    \autocite[659]{BarthEtAl2019CriticSuccesFactor} & Production \\
Tools & tool & `Even though test automation tools for ERP systems are expensive
    and are often not able to cover individually developed parts of the system,
    test automation is a way to reach a high standardization of the testing
    process.' \autocite[665]{BarthEtAl2019CriticSuccesFactor} & Production \\
Tools & tool & `This stage might involve business process change techniques such
    as business process modeling (Al-Mudimigh et al., 2001; Holland and Light,
    1999) or other vendor development tools (Somers and Nelson, 2001, 2004).'
    \autocite[338]{FinneyEtAl2007ERPImplemCompil} & Production \\
Tools & tool & `As such, strategies, policies, security tools and mechanisms to
    ensure security play an important role in the successful adoption and
    implementation of Cloud ERP [15].'
    \autocite[4685]{HuangEtAl2021CriticSuccesFactor} & Production \\
Tools & tool & `In addition, an organization can reduce the cost of
    implementation, gain other benefits from partnerships with the vendor, and
    use the vendor's customization tools [69].'
    \autocite[555]{NgaiEtAl2008ExaminCriticSucces} & Production \\
Tools & tool & `Organizations should provide a customized training and education
    programme that provides employees with tools and practical experience needed
    to integrate new processes, roles, and responsibilities; along with training
    in the differences between the new technology and the old technology to
    ensure a successful transition [12].'
    \autocite[558]{NgaiEtAl2008ExaminCriticSucces} & Production \\
Tools & tool & `A business process is ``comprised of the people who conduct it,
    the tools they use to assist them, the procedures they follow and the flows
    of material and information between the various people, groups and
    subactivities''.' \autocite[38]{OsmanEtAl2019ERPCriticSucces} & Production
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Tools & tool & `Reduce trouble shooting and project risk risk management which
    involves developing proper troubleshooting tools, adequate skills and
    techniques and in relation to the CSF use of consultants, working closely
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    with vendors and consultants when something is wrong in the system [4].'
    \autocite[38]{OsmanEtAl2019ERPCriticSucces} & Production \\
Tools & tool & `We've bought a product called Constaller Hub; it's a tool that
    you can run nightly, hourly or every five minutes, to achieve that kind of
    integration, we have been using this product for more than five years'' (The
    associate IT director at QUT, Personal Communication, 3rd of March, 2009).'
    \autocite[464]{RabaaiEtAl2009ERPSystemHigher} & Production \\
Tools & tool & `Item Description 1 top management support 25 application project
    costs 2 effective communication 26 interdepartmental cooperation 3
    interdepartmental communication 27 dedicated resources 4 clear goal and
    objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor
    support 6 change management 30 use of vendor's development tools 7 education
    on new business process 31 organizational characteristics 8 user training\&
    education 32 employee / team morale-motivation 9 user acceptance 33
    leadership of the project team 10 managing cultural change 34 project team
    competence- composition 11 business process reengineering 35 ERP team work
    12 customization 36 steering committee 13 minimal customization 37 empowered
    decision makers 14 software configuration 38 use of consultants 15 data
    accuracy 39 obtain business analysts 16 data analysis- conversion 40 project
    champion 17 software development testing \& troubleshooting 41 appropriate
    business-legacy systems 18 implementation strategies 42 data integration 19
    ERP package selection 43 scope \& vision based performance 20 feasible
    evaluation of ERP project 44 monitoring- evaluation of performance 21 IT
    infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Production \\
Tools & tool & `Related Sub-Factors 1 (11) Business project reengineering (18)
    Implementation strategies (23) Management of expectations (24) Project
    management (32) Employee / team morale \& motivation (33) Leadership of the
    project team (34) Project team competence and composition 2 (14) Software
    configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing
    vendor support (30) Support of vendor development tools (38) Use of
    consultants 3 (40) Project champion (46) National culture (47) Country
    related functional requirements (48) Centralization 4 (1) Top management
    support (2) Effective communication (3) Interdepartmental communication (4)
    Clear goals and objectives (5) Business plan \& vision 5 (15) Data accuracy
    (16) Data integration (42) Data analysis and conversion 6 (7) Education on
    new business processes (8) User training and education (9) User acceptance
    (10) Managing cultural change this result maybe, end-users resist changing
    business processes instead they prefer customizations in ERP software.'
    \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Production \\
Tools & tool & `Sub-factors designated pertaining to vendors are ongoing vendor
    support, ERP vendor relations and support of vendors' development tools.'
    \autocite[68]{SaygiliEtAl2017EndUsersPercep} & Production \\
Tools & tool & `Fourth, deploy supporting tools to control the data quality
    process by monitoring all dimensions, that is, amount, accuracy, timeliness,
    completeness, consistency, accessibility, and multiple sources of the same
    data.' \autocite[19]{ShaulEtAl2013CriticSuccesFactor} & Production \\
Top Management Support & top management & `The authors find that top management
    support, good project management teams, and good communications are the top
    three most important critical successful factors during implementation.'
    \autocite[666]{AliEtAl2017ERPSystemImplem} & Management \\
Top Management Support & top management & `Surprisingly, the role of top
    management support is found to be less important than that provided by users
    (Maditinos et al., 2011).' \autocite[673]{AliEtAl2017ERPSystemImplem} &
    Management \\
Top Management Support & top management & `CSFs for successful ERP
    implementation are identified as top management support, presence of a
    champion, good communication with stakeholders, effective project planning,
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    business process re-engineering (BPR), and using a business analyst on the
    project team (Bancroft et al., 1998; Bingi et al., 1999).'
    \autocite[674]{AliEtAl2017ERPSystemImplem} & Management \\
Top Management Support & top management & `They rate CSFs by a degree of
    importance during ERP implementation as follows: (1) top management support;
    (2) project team competence; (3) inter-departmental cooperation; (4) clear
    goals and objectives; (5) project management; (6) inter-departmental
    communication; (7) management of expectation; (8) project champion; (9)
    vendors' support; (10) careful package selection; (11) data analysis and
    conversion; (12) dedicated resources; (13) use of steering committee; (14)
    user training on software; (15) education on new business processes; (16)
    BPR; (17) minimal customisation; (18) architecture choices; (19) change
    management; (20) partnership with vendors; (21) use of vendors' tool; and
    (22) use of consultant.' \autocite[674]{AliEtAl2017ERPSystemImplem} &
    Management \\
Top Management Support & top management & `Important CSFs identified are: ERP
    team work and composition, top management support, business plan and vision,
    effective communication, project management, project champion, appropriate
    business and legacy systems, change management programmes, culture, BPR,
    minimum customisation, software development, testing, trouble shooting,
    monitoring, and evaluation of performance.'
    \autocite[675]{AliEtAl2017ERPSystemImplem} & Management \\
Top Management Support & top management & `CSFs identified for successful
    implementation are: a clear understanding of strategic goals, top management
    commitment and support, organisational change management strategy, good
    implementation team, data accuracy, extensive education and training,
    focussed performance measures, and multi-site issues.'
    \autocite[675]{AliEtAl2017ERPSystemImplem} & Management \\
Top Management Support & top management & `They identify causes of ERP
    implementation failure as excessive customisation, dilemma of internal
    integration, poor understanding of business implications and requirements,
    lack of change management strategy, poor data quality, misalignment of IT
    with business, hidden costs, limited training, and lack of top management
    support.' \autocite[681]{AliEtAl2017ERPSystemImplem} & Management \\
Top Management Support & top management & `The most common causes of ERP
    implementation failures are a combination of poor planning and high software
    customisation (Scheer and Habbermann, 2000), lack of top management
    commitment; ineffective communication; insufficient training; lack of user
    support, poor project management, relying on legacy systems, inter-
    departmental conflicts, poor composition of project teams, failure in
    redesigning business processes and, lack of clarity about required changes.'
    \autocite[682]{AliEtAl2017ERPSystemImplem} & Management \\
Top Management Support & top management & `The study founds a significant
    association of technological, strategic, project management, people, top
    management support and communication factor with ERP implementation.'
    \autocite[628]{AnjumEtAl2015FactorManipuERP} & Management \\
Top Management Support & top management & `Strategic: Top management support,
    business plan and vision have been frequently recognized as the most
    significant and critical success factors in ERP system execution projects
    (Somers and Nelson, 2001).' \autocite[629]{AnjumEtAl2015FactorManipuERP} &
    Management \\
Top Management Support & top management & `Top management support is the level
    of obligation by senior staff in the organization of the project in terms of
    their own association and the motivation to distribute important managerial
    resources (Slevin and Pinto, 1987).'
    \autocite[629]{AnjumEtAl2015FactorManipuERP} & Management \\
Top Management Support & top management & `Work practices, poor data quality,
    BPR activities, customization of the ERP system, internal staff adequacy,
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    training, top management support, quality of consultants are the main
    problems (Genoulaz \& Millet, 2006).'
    \autocite[89]{BasogluEtAl2007OrganiAdoptiEnterp} & Management \\
Top Management Support & top management & `The results of this study show that
    ``Managers and employees readiness to change'', ``Top management Support'',
    ``Business Process Reengineering'', ``Software and user interface
    development'' and ``Change management'' are five top critical success
    factors.' \autocite[109]{Chan2013AustraQuantiSurvey} & Management \\
Top Management Support & top management & `In this study, the dimension of
    ``internal environment'' includes four factors (top management support,
    business process reengineering, organizational culture, change management).'
    \autocite[1255]{ChatzoglouEtAl2016AnteceOutcomERP} & Management \\
Top Management Support & top management & `Frequency analysis of CSFs in
    literature CSF category Top management commitment and support Change
    management BPR and software configuration Training and job redesign Project
    team: the best and brightest Implementation strategy and timeframe
    Consultant selection and relationship Visioning and planning Balanced team
    Project champion Communication plan IT infrastructure Managing cultural
    change Post-implementation evaluation Selection of ERP Team morale and
    motivation Vanilla ERP Project management Troubleshooting/crises management
    Legacy system consideration Data conversion and integrity System testing
    Client consultation Project cost planning and management Build a business
    case Empowered decision makers Number of instances cited in literature 25 25
    23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 5 5 5 4 4 3 3 Researchers have
    very often focused on only a specific aspect of the implementation process
    or a specific CSF.' \autocite[340]{FinneyEtAl2007ERPImplemCompil} &
    Management \\
Top Management Support & top management & `Findings - Results suggest that 9
    critical failure items namely Inadequate resources, Poor User involvement,
    Users' resistance to change, High Attrition rate of project team members,
    Lack of top management commitment, Poor project management, Inadequate
    project team composition, Ineffective organizational change management and
    Unrealistic project scheduling have a high impact on ERP implementation and
    therefore deserve serious attention in the process of ERP implementation.'
    \autocite[496]{GargEtAl2013EmpiriStudyon} & Management \\
Top Management Support & top management & `These factors include, but not
    limited to, poor consultant effectiveness, ERP software misfit, unrealistic
    expectations from top management concerning the ERP systems, over-reliance
    on heavy customization, poor quality of Business Process Reengineering
    (BPR), high turnover rate of project team members, poor IT Infrastructure,
    functionality problems with the system, unclear concept of the nature and
    use of the ERP system from the users perspective, too tight project
    schedule, lack of formal communication, part-time dedication, etc.'
    \autocite[498]{GargEtAl2013EmpiriStudyon} & Management \\
Top Management Support & top management & `Pareto chart per factors for ERP
    failure Pareto analysis suggest that nine critical failure items namely
    inadequate resources, poor user involvement, users' resistance to change,
    higher attrition rate of project team members, Lack of top management
    commitment, Poor project management, inadequate project team composition,
    ineffective organizational change management, unrealistic project scheduling
    have a high impact on ERP implementation and therefore deserve serious
    attention in the process of ERP implementation.'
    \autocite[507]{GargEtAl2013EmpiriStudyon} & Management \\
Top Management Support & top management & `(1) The ``Organizational'' factor in
    this study is defined by business plan and vision, top management support,
    business process reengineering, ERP product selection, selection of
    implementation partner/consultants and enterprise wide communication plan
    items which may affect the success of ERP implementation in Indian retail
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    sector.' \autocite[1327]{GargEtAl2015FactorAffectERP} & Management \\
Top Management Support & top management & `Extrinsic(3) Organizational CSFs (15)
    People CSFs (12) Technological CSFs (5) ● Communication within the company ●
    Organization resistance ● Project budget ● Project management ●
    Implementation strategy ● Strategic goals and objectives ● Business process
    reengineering ● organizational culture ● knowledge base of the company ●
    Project planning and control ● Facilitating conditions ● Organization size ●
    The vision of the organization ● Readiness of organizations ● Clarity of
    potential cost ● User involvement ● Selection of vendor/consult ant ●
    Project team ● Top management support ● Training of user ● Trust on vendor ●
    Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender
    ● Highest degree attained ● Selection of ERP package ● IT infrastructure ●
    Data integrity and system testing.'
    \autocite[4686]{HuangEtAl2021CriticSuccesFactor} & Management \\
Top Management Support & top management & `The research concludes that: (1)
    Quality (adequacy) and quantity of training and education of
    personnel/users, role and effectiveness of management in reducing the users'
    resistance, use of steering committee for control purpose, top management
    support or involvement, clearly specified goals/objectives/scope regarding
    ERP system, ease of system's use and users' acceptance, vendor's support,
    project management, effective communication among the organizational members
    and a balanced team for ERP implementation are practically considered by the
    successful enterprises in China while planning and going for the
    implementation of the ERP system and are thus critical for the success of
    ERP systems implementation projects, ignoring of which may cause
    implementation failure in the Chinese organizations; (2) Some of the factors
    deemed imperative for ERP systems implementation success in the literature
    like; selection of a right full time project manager with extensive
    experience, presence/existence of a champion, integration of business
    planning with IT/ERP planning, use and role of consultant, change management
    strategy and programs, competency in use of IT and IT infrastructure,
    business...' \autocite[68]{KhattakEtAl2013InvestCriticSucces} & Management
    \\
Top Management Support & top management & `According to the literature, the most
    studied factors were: Top Management Support, Effective Communication,
    Training, and Education, Business plan and vision, Project Management, BPR
    management, Change Management, Project team Composition/ Teamwork, Project
    champion, ERP Choices, Technical Implementation, Technological
    Infrastructure, Legacy systems consideration.'
    \autocite[112]{MahrazEtAl2020CompilAnalysCritic} & Management \\
Top Management Support & top management & `The findings of our study reveal that
    `appropriate business and IT legacy systems', `business
    plan/vision/goals/justification', `business process reengineering', `change
    management culture and programme', `communication', `ERP teamwork and
    composition', `monitoring and evaluation of performance', `project
    champion', `project management', `software/system development, testing and
    troubleshooting', `top management support', `data management', `ERP strategy
    and implementation methodology', `ERP vendor', `organizational
    characteristics', `fit between ERP and business/process', `national culture'
    and `country-related functional requirement' were the commonly extracted
    factors across these 10 countries/regions.'
    \autocite[548]{NgaiEtAl2008ExaminCriticSucces} & Management \\
Top Management Support & top management & `Eleven critical factors were
    identified, such as ERP teamwork and composition, change management program
    and culture, top management support, business plan and vision, business
    process reengineering (BPR) and minimum customisation, effective
    communications, project management, software development, testing and
    troubleshooting, monitoring and evaluating performance, project champion,
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    and appropriate business and IT legacy systems.'
    \autocite[6]{Rabaai2009IdentiCriticSucces} & Management \\
Top Management Support & top management & `Based on the work by Markus and Tanis
    (2000), Nah and Delgado organised these factors into seven main categories:
    (1) Business plan and vision; (2) Change management; (3) Communication; (4)
    ERP team composition, skills, and compensation; (5) Project management; (6)
    Top management support and championship; and (7) System analysis, selection,
    and technical implementation.' \autocite[6]{Rabaai2009IdentiCriticSucces} &
    Management \\
Top Management Support & top management & `The critical success factors
    consistently identified in the literature include top management support,
    the presence of a champion, good communication with all stakeholders,
    effective project management, reengineering of business processes, an
    understanding of corporate cultural change, and the use of business analysts
    on the project team.' \autocite[88]{RabaaiEtAl2015CulturPerspeon} &
    Management \\
Top Management Support & top management & `In Jordan, and indeed most Arabic
    countries, this may be explained by the convention that top management
    consider themselves to have more important obligations, responsibilities,
    and meetings.' \autocite[98]{RabaaiEtAl2015CulturPerspeon} & Management \\
Top Management Support & top management & `Consequently, top management often
    develop report mechanisms to keep them informed of a project's progress
    without any actual and deep involvement in the project.'
    \autocite[98]{RabaaiEtAl2015CulturPerspeon} & Management \\
Top Management Support & top management & `In Jordan, critical decisions and
    approvals are only taken by top management, thus, project managers do not
    have access or control over financial resources without approval from top
    management.' \autocite[98]{RabaaiEtAl2015CulturPerspeon} & Management \\
Top Management Support & top management & `ERP failure factors and categories
    Failure Categories Failure Factors C4: Project Management F1: Conflicts
    between organization and consultants/ vendor C5: Technical F2: High rate of
    system customization C5: Technical F3: Data management issues C2: Human
    Resources F4: Inadequate education and training C2: Human Resources F5:
    Inadequate user involvement C2: Human Resources F6: Ineffective
    communications system C3: Organizational F7: Internal conflicts between
    departments C2: Human Resources F8: Inadequate change management C3:
    Organizational F9: Lack of performance measurement system C3: Organizational
    F10: Misfit between organization culture and ERP system C3: Organizational
    F11: Misfit between organization structure and ERP system C3: Organizational
    F12: Misfits between the IT and business strategies C1: Environmental F13:
    Environmental pressures C3: Organizational F14: Poor business process
    reengineering C1: Environmental F15: Poor consultant C4: Project Management
    F16: Poor project management C4: Project Management F17: Poor risk
    management C3: Organizational F18: Poor top management support C5: Technical
    F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...'
    \autocite[42]{RavasanEtAl2014FCM-BaDynamiModeli} & Management \\
Top Management Support & top management & `Critical success factors identified
    in Turkish studies Author (s) Critical Success Factors Baskak\& Cetisli
    (2003) Top management support, business plan and vision, ERP teamwork, ERP
    package selection, change management, user training and education, effective
    communication, project management, data integration, software testing and
    troubleshooting, appropriate legacy systems, monitoring and evaluation of
    performance.' \autocite[62]{SaygiliEtAl2017EndUsersPercep} & Management \\
Top Management Support & top management & `Item Description 1 top management
    support 25 application project costs 2 effective communication 26
    interdepartmental cooperation 3 interdepartmental communication 27 dedicated
    resources 4 clear goal and objectives 28 ERP vendor relations 5 business
    plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's
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    development tools 7 education on new business process 31 organizational
    characteristics 8 user training\& education 32 employee / team morale-
    motivation 9 user acceptance 33 leadership of the project team 10 managing
    cultural change 34 project team competence- composition 11 business process
    reengineering 35 ERP team work 12 customization 36 steering committee 13
    minimal customization 37 empowered decision makers 14 software configuration
    38 use of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Management \\
Top Management Support & top management & `Related Sub-Factors 1 (11) Business
    project reengineering (18) Implementation strategies (23) Management of
    expectations (24) Project management (32) Employee / team morale \&
    motivation (33) Leadership of the project team (34) Project team competence
    and composition 2 (14) Software configuration (21) IT infrastructure (28)
    ERP vendor relations (29) Ongoing vendor support (30) Support of vendor
    development tools (38) Use of consultants 3 (40) Project champion (46)
    National culture (47) Country related functional requirements (48)
    Centralization 4 (1) Top management support (2) Effective communication (3)
    Interdepartmental communication (4) Clear goals and objectives (5) Business
    plan \& vision 5 (15) Data accuracy (16) Data integration (42) Data analysis
    and conversion 6 (7) Education on new business processes (8) User training
    and education (9) User acceptance (10) Managing cultural change this result
    maybe, end-users resist changing business processes instead they prefer
    customizations in ERP software.'
    \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Management \\
Top Management Support & top management & `The proposed model confirms that
    following factors play a significant role during implementation of SCMIS-top
    management support, user involvement, pre-implementation analysis, user
    training, change management, data accuracy and communication.'
    \autocite[248]{SethEtAl2015DeveloModelSucces} & Management \\
Top Management Support & top management & `Organizations where top management is
    committed for IOS and relationship are bound to be more successful as they
    will allocate more financial and human resources.'
    \autocite[250]{SethEtAl2015DeveloModelSucces} & Management \\
Top Management Support & top management & `According to the regression analysis
    on the successful implementation of SCMIS, as shown in Table 8, factors that
    have significant impact at 5 per cent or higher level include top management
    support, user support and involvement, training and education, change
    management, pre-implementation analysis, communication and data Table 7.'
    \autocite[256]{SethEtAl2015DeveloModelSucces} & Management \\
Top Management Support & top management & `Note: Numbers are the beta weight and
    **p < 0.05. confirms that these CSVs has a significant impact, and in order
    to have a successful implementation of SCMIS, top management support, user
    support and involvement, preimplementation analysis, training, change
    management, data accuracy and communication are critical.'
    \autocite[257]{SethEtAl2015DeveloModelSucces} & Management \\
Top Management Support & top management & `The findings of this study support
    the proposed hypothesis that top management support has a positive impact on
    SCMIS implementation success (H1c), so an increase in support of top
    management will lead to more successful implementation.'
    \autocite[258]{SethEtAl2015DeveloModelSucces} & Management \\
Top Management Support & top management & `Such consequences can be avoided by
    open communication with top management, vendors, and consultants through the
    establishment of senior and professional steering committees, a balanced
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    project team, and a ``responsible'' definition of success measures.'
    \autocite[19]{ShaulEtAl2013CriticSuccesFactor} & Management \\
Uncertainty Avoidance (-) & uncertainty avoidance & `Examining ERP acceptance
    challenges from a Saudi Arabian cultural perspective, Alhirz and Sajeev
    (2015) find power distance and individualism have no significant impact on
    acceptance, however, uncertainty avoidance have a significant influence.'
    \autocite[673]{AliEtAl2017ERPSystemImplem} & Management \\
User Involvement & client & `Al-Mashari et al. (2003) and Al Mudimigh et al.
    (2001) mention the need for communication and consultation with various key
    stakeholders, but in particular with the client.'
    \autocite[338]{FinneyEtAl2007ERPImplemCompil} & Collection, Use \\
User Involvement & client & `Frequency analysis of CSFs in literature CSF
    category Top management commitment and support Change management BPR and
    software configuration Training and job redesign Project team: the best and
    brightest Implementation strategy and timeframe Consultant selection and
    relationship Visioning and planning Balanced team Project champion
    Communication plan IT infrastructure Managing cultural change Post-
    implementation evaluation Selection of ERP Team morale and motivation
    Vanilla ERP Project management Troubleshooting/crises management Legacy
    system consideration Data conversion and integrity System testing Client
    consultation Project cost planning and management Build a business case
    Empowered decision makers Number of instances cited in literature 25 25 23
    23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very
    often focused on only a specific aspect of the implementation process or a
    specific CSF.' \autocite[340]{FinneyEtAl2007ERPImplemCompil} & Collection,
    Use \\
User Involvement & customer & `On the other hand, according to Wagner and Newell
    (2004), best practices of ERP systems may be designed with a software
    company working in a partnering relationship with a key industry customer to
    develop a package to meet the unique requirements of a particular industry.'
    \autocite[74]{BasogluEtAl2007OrganiAdoptiEnterp} & Collection, Use \\
User Involvement & customer & `Similarly, Skok and Legge (2002, p. 82) have
    argued that there is a need to ``increase the multiplicity of relevant
    stakeholders'' to include groups such as customers, suppliers, wholesalers,
    etc.' \autocite[343]{FinneyEtAl2007ERPImplemCompil} & Collection, Use \\
User Involvement & user involvement & `In addition, user involvement and
    satisfaction has a positive influence on ERP systems, leading to system
    acceptance.' \autocite[673]{AliEtAl2017ERPSystemImplem} & Use \\
User Involvement & user involvement & `Wilson et al. (1994) Sun et al. (1997)
    Soh et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and
    Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and
    Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline
    Organisational resistance Lack of organisational commitment Poor data
    accuracy Limited user involvement Mismatch between organisation requirements
    and functionalities offered Lack of readiness for integration Lack of focus
    on user education and training Excessive customisation Inadequate
    organisational analysis Costs Project duration Technical challenges
    Management changes Table V. Implementation failure attributes JEIM 30,4 682
    8.' \autocite[681]{AliEtAl2017ERPSystemImplem} & Collection, Use \\
User Involvement & user involvement & `In this study, the dimension of ``end-
    users'' includes three factors (user involvement, training and education,
    employee skills).' \autocite[1256]{ChatzoglouEtAl2016AnteceOutcomERP} &
    Collection, Use \\
User Involvement & user involvement & `User involvement is one of the most cited
    critical success factors in ERP implementation projects [14] [33].'
    \autocite[1256]{ChatzoglouEtAl2016AnteceOutcomERP} & Collection, Use \\
User Involvement & user involvement & `Lack of management support, poor
    organizational culture, communication problems, financial management
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    problems, lack of clarity on scope, project management problems, poor
    project team, ERP software misfit, poor solution implementer performance,
    poor quality of testing, outdated it infrastructure, lack of training,
    highly customized ERP, poor process design, lack of user involvement,
    resistance to change, unrealistic expectations are the main failure factors
    that need to be analyzed in detail.'
    \autocite[3]{CoşkunEtAl2022ERPFailurSystem} & Collection, Use \\
User Involvement & user involvement & `For example, ``Lack of User Involvement''
    causes ``Customer \& Employee Dissatisfaction''.'
    \autocite[13]{CoşkunEtAl2022ERPFailurSystem} & Collection, Use \\
User Involvement & user involvement & `Findings - Results suggest that 9
    critical failure items namely Inadequate resources, Poor User involvement,
    Users' resistance to change, High Attrition rate of project team members,
    Lack of top management commitment, Poor project management, Inadequate
    project team composition, Ineffective organizational change management and
    Unrealistic project scheduling have a high impact on ERP implementation and
    therefore deserve serious attention in the process of ERP implementation.'
    \autocite[496]{GargEtAl2013EmpiriStudyon} & Collection, Use \\
User Involvement & user involvement & `Pareto chart per factors for ERP failure
    Pareto analysis suggest that nine critical failure items namely inadequate
    resources, poor user involvement, users' resistance to change, higher
    attrition rate of project team members, Lack of top management commitment,
    Poor project management, inadequate project team composition, ineffective
    organizational change management, unrealistic project scheduling have a high
    impact on ERP implementation and therefore deserve serious attention in the
    process of ERP implementation.' \autocite[507]{GargEtAl2013EmpiriStudyon} &
    Collection, Use \\
User Involvement & user involvement & `On the similar fashion Rasmy and Esteves
    also described that user involvement in defining ERP systems needs and user
    involvement in the implementation of ERP systems are important aspects, The
    user involvement in ERP systems will be helpful to get user requirements,
    better quality of the system and increase system usage (Rasmy et al., 2005;
    Esteves et al., 2003) (People).' \autocite[508]{GargEtAl2013EmpiriStudyon} &
    Collection, Use \\
User Involvement & user involvement & `It is reported that factor 1 could be
    labeled as ``Top management commitment,'' factor 2 could be labeled as
    ``User involvement,'' factor 3 could be labeled as ``Business process
    reengineering,'' factor 4 could be labeled as ``Project management'' and
    while the last factor could be labeled as ``ERP teamwork and composition.''
    The 24 items are further employed in order to perform reliability test,
    bivariate correlation and multiple regression analysis.'
    \autocite[411]{GargEtAl2014CriticSuccesFactor} & Collection, Use \\
User Involvement & user involvement & `User involvement is essential because it
    improves perceived control through participating in the whole project plan.'
    \autocite[433]{GargEtAl2014FactorInflueERP} & Collection, Use \\
User Involvement & user involvement & `User involvement is one of the most cited
    critical success factors in ERP implementation projects (Zhang et al.,
    2005).' \autocite[433]{GargEtAl2014FactorInflueERP} & Collection, Use \\
User Involvement & user involvement & `User involvement increase user
    satisfaction and acceptance by developing realistic expectations about
    system capabilities (Esteves and Casanovas, 2003): H3.'
    \autocite[433]{GargEtAl2014FactorInflueERP} & Collection, Use \\
User Involvement & user involvement & `Extrinsic(3) Organizational CSFs (15)
    People CSFs (12) Technological CSFs (5) ● Communication within the company ●
    Organization resistance ● Project budget ● Project management ●
    Implementation strategy ● Strategic goals and objectives ● Business process
    reengineering ● organizational culture ● knowledge base of the company ●
    Project planning and control ● Facilitating conditions ● Organization size ●
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    The vision of the organization ● Readiness of organizations ● Clarity of
    potential cost ● User involvement ● Selection of vendor/consult ant ●
    Project team ● Top management support ● Training of user ● Trust on vendor ●
    Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender
    ● Highest degree attained ● Selection of ERP package ● IT infrastructure ●
    Data integrity and system testing.'
    \autocite[4686]{HuangEtAl2021CriticSuccesFactor} & Collection, Use \\
User Involvement & user involvement & `For example, according to Gupta and Misra
    [14], user involvement refers to employees of organizations who should be
    involved during the implementation stage to be familiar with Cloud ERP
    systems.' \autocite[4687]{HuangEtAl2021CriticSuccesFactor} & Collection, Use
    \\
User Involvement & user involvement & `Problems in companies under study include
    poor communication, lack of support from department heads, poor training
    services from vendor, and low user involvement.'
    \autocite[559]{NgaiEtAl2008ExaminCriticSucces} & Collection, Use \\
User Involvement & user involvement & `Other problems reported are lack of BPR
    [87], poor communications, lack of support from management, limited level of
    user involvement, poor training from vendors [90], and weakness in existing
    IT infrastructure [41].' \autocite[559]{NgaiEtAl2008ExaminCriticSucces} &
    Collection, Use \\
User Involvement & user involvement & `[13] Change program should cover end user
    involvement and training in the implementation stage and they must be
    regularly supported from top management or implementation team.'
    \autocite[38]{OsmanEtAl2019ERPCriticSucces} & Collection, Use \\
User Involvement & user involvement & `User involvement It is definitely
    essential for the success of ERP adoption.'
    \autocite[38]{OsmanEtAl2019ERPCriticSucces} & Collection, Use \\
User Involvement & user involvement & `The user involvement can hence, be
    referred to a psychological state of the individual as the importance and
    personal relevance of the system to the user [28].'
    \autocite[38]{OsmanEtAl2019ERPCriticSucces} & Collection, Use \\
User Involvement & user involvement & `Therefore, the user involvement and
    participation are considered critical success factors as they will result in
    a better fit of user requirements and enhancing a better system quality, use
    and acceptance 2.2.8.' \autocite[38]{OsmanEtAl2019ERPCriticSucces} &
    Collection, Use \\
User Involvement & user involvement & `Low ease of use could be due to the
    complexity and unfamiliarity of the interfaces, ineffective end-user
    education and training, inadequate user involvement and participation in the
    implementation, or simply user rejection of the technology.'
    \autocite[97]{RabaaiEtAl2015CulturPerspeon} & Collection, Use \\
User Involvement & user involvement & `ERP failure factors and categories
    Failure Categories Failure Factors C4: Project Management F1: Conflicts
    between organization and consultants/ vendor C5: Technical F2: High rate of
    system customization C5: Technical F3: Data management issues C2: Human
    Resources F4: Inadequate education and training C2: Human Resources F5:
    Inadequate user involvement C2: Human Resources F6: Ineffective
    communications system C3: Organizational F7: Internal conflicts between
    departments C2: Human Resources F8: Inadequate change management C3:
    Organizational F9: Lack of performance measurement system C3: Organizational
    F10: Misfit between organization culture and ERP system C3: Organizational
    F11: Misfit between organization structure and ERP system C3: Organizational
    F12: Misfits between the IT and business strategies C1: Environmental F13:
    Environmental pressures C3: Organizational F14: Poor business process
    reengineering C1: Environmental F15: Poor consultant C4: Project Management
    F16: Poor project management C4: Project Management F17: Poor risk
    management C3: Organizational F18: Poor top management support C5: Technical
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    F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...'
    \autocite[42]{RavasanEtAl2014FCM-BaDynamiModeli} & Collection, Use \\
User Involvement & user involvement & `The proposed model confirms that
    following factors play a significant role during implementation of SCMIS-top
    management support, user involvement, pre-implementation analysis, user
    training, change management, data accuracy and communication.'
    \autocite[248]{SethEtAl2015DeveloModelSucces} & Collection, Use \\
User Involvement & user involvement & `Human Dimension These factors are among
    the most important (critical) as the system being implemented is for the
    employees; therefore, the user involvement and participation should start
    much before the implementation takes place as has been emphasized by various
    studies (Bingi et al., 1999; Holland et al., 1999).'
    \autocite[251]{SethEtAl2015DeveloModelSucces} & Collection, Use \\
User Involvement & user involvement & `Next, the study supported the proposed
    hypothesis that user involvement and support has a positive impact on SCMIS
    implementation success (H1e), so an increase in user involvement will lead
    to more successful implementation.'
    \autocite[258]{SethEtAl2015DeveloModelSucces} & Collection, Use \\
Vendor Support & partnership with vendor & `They rate CSFs by a degree of
    importance during ERP implementation as follows: (1) top management support;
    (2) project team competence; (3) inter-departmental cooperation; (4) clear
    goals and objectives; (5) project management; (6) inter-departmental
    communication; (7) management of expectation; (8) project champion; (9)
    vendors' support; (10) careful package selection; (11) data analysis and
    conversion; (12) dedicated resources; (13) use of steering committee; (14)
    user training on software; (15) education on new business processes; (16)
    BPR; (17) minimal customisation; (18) architecture choices; (19) change
    management; (20) partnership with vendors; (21) use of vendors' tool; and
    (22) use of consultant.' \autocite[674]{AliEtAl2017ERPSystemImplem} &
    Management \\
Vendor Support & software vendor & `A strategic partnership with the software
    vendor enables using implementation tools such as process modeling,
    templates for specific business practices or packages of software, services
    and support, as well as bestpractices (Somers and Nelson, 2004).'
    \autocite[659]{BarthEtAl2019CriticSuccesFactor} & Management \\
Vendor Support & software vendor & `The project team can eventually be equipped
    with comprehensive and useful information on the current business processes
    and how information is accessed and flows across divisions or systems since
    most ERP software vendors make assumptions about management philosophy and
    business practices.' \autocite[18]{ShaulEtAl2013CriticSuccesFactor} &
    Management \\
Vendor Support & software vendor & `Thus, buying an enterprise application means
    much more than purchasing software and involves buying into the software
    vendor's view of best practices for many of the company's processes.'
    \autocite[18]{ShaulEtAl2013CriticSuccesFactor} & Management \\
Vendor Support & software vendor & `However, King and Burgess [2008] found
    similarities between ERP and CRM implementations and between their
    respective CSFs as they both are large-scale integration technologies, and
    often are packages supplied by large software vendors.'
    \autocite[24]{ShaulEtAl2013CriticSuccesFactor} & Management \\
Vendor Support & use of vendor & `They rate CSFs by a degree of importance
    during ERP implementation as follows: (1) top management support; (2)
    project team competence; (3) inter-departmental cooperation; (4) clear goals
    and objectives; (5) project management; (6) inter-departmental
    communication; (7) management of expectation; (8) project champion; (9)
    vendors' support; (10) careful package selection; (11) data analysis and
    conversion; (12) dedicated resources; (13) use of steering committee; (14)
    user training on software; (15) education on new business processes; (16)
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    BPR; (17) minimal customisation; (18) architecture choices; (19) change
    management; (20) partnership with vendors; (21) use of vendors' tool; and
    (22) use of consultant.' \autocite[674]{AliEtAl2017ERPSystemImplem} &
    Management \\
Vendor Support & use of vendor & `Item Description 1 top management support 25
    application project costs 2 effective communication 26 interdepartmental
    cooperation 3 interdepartmental communication 27 dedicated resources 4 clear
    goal and objectives 28 ERP vendor relations 5 business plan-vision 29
    ongoing vendor support 6 change management 30 use of vendor's development
    tools 7 education on new business process 31 organizational characteristics
    8 user training\& education 32 employee / team morale-motivation 9 user
    acceptance 33 leadership of the project team 10 managing cultural change 34
    project team competence- composition 11 business process reengineering 35
    ERP team work 12 customization 36 steering committee 13 minimal
    customization 37 empowered decision makers 14 software configuration 38 use
    of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Management \\
Vendor Support & vendor support & `The authors report risk factors such as loss
    of qualified IT experts after implementation, inaccurate master production
    schedules, user resistance, loss of ERP-related know-how, lack of vendor
    support, failure to produce an appropriate material requirement plan, and
    inefficient integration between modules are primary risk factors that can
    affect the viability of ERP projects.'
    \autocite[678]{AliEtAl2017ERPSystemImplem} & Management \\
Vendor Support & vendor support & `According to a large-scale European multi-
    country survey the most important factor is the best fit with current
    business processes, respectively, organization (Hong and Kim, 2002; Ngai et
    al., 2008), followed by flexibility, cost, user-friendliness, scalability
    and vendor support (van Everdingen et al., 2000).'
    \autocite[659]{BarthEtAl2019CriticSuccesFactor} & Management \\
Vendor Support & vendor support & `Item Description 1 top management support 25
    application project costs 2 effective communication 26 interdepartmental
    cooperation 3 interdepartmental communication 27 dedicated resources 4 clear
    goal and objectives 28 ERP vendor relations 5 business plan-vision 29
    ongoing vendor support 6 change management 30 use of vendor's development
    tools 7 education on new business process 31 organizational characteristics
    8 user training\& education 32 employee / team morale-motivation 9 user
    acceptance 33 leadership of the project team 10 managing cultural change 34
    project team competence- composition 11 business process reengineering 35
    ERP team work 12 customization 36 steering committee 13 minimal
    customization 37 empowered decision makers 14 software configuration 38 use
    of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Management \\
Vendor Support & vendor support & `Related Sub-Factors 1 (11) Business project
    reengineering (18) Implementation strategies (23) Management of expectations
    (24) Project management (32) Employee / team morale \& motivation (33)
    Leadership of the project team (34) Project team competence and composition
    2 (14) Software configuration (21) IT infrastructure (28) ERP vendor
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    relations (29) Ongoing vendor support (30) Support of vendor development
    tools (38) Use of consultants 3 (40) Project champion (46) National culture
    (47) Country related functional requirements (48) Centralization 4 (1) Top
    management support (2) Effective communication (3) Interdepartmental
    communication (4) Clear goals and objectives (5) Business plan \& vision 5
    (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6
    (7) Education on new business processes (8) User training and education (9)
    User acceptance (10) Managing cultural change this result maybe, end-users
    resist changing business processes instead they prefer customizations in ERP
    software.' \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Management \\
Vendor Support & vendor support & `Sub-factors designated pertaining to vendors
    are ongoing vendor support, ERP vendor relations and support of vendors'
    development tools.' \autocite[68]{SaygiliEtAl2017EndUsersPercep} &
    Management \\
Vendor Support & vendor support & `Provide ongoing vendor support including
    technical assistance, emergency maintenance, updates, and special user
    training.' \autocite[74]{SaygiliEtAl2017EndUsersPercep} & Management \\
Vendor Support & vendor support & `The major upgrade phase typically requires a
    considerable amount of resources, both financial and human, and a need to
    keep pace with ERP vendor upgrades to guarantee vendor support for the
    system by providing upgrades to ``fix'' outstanding ``bugs,'' current best
    practices, or design weaknesses [Agerfalk et al. 2009].'
    \autocite[22]{ShaulEtAl2013CriticSuccesFactor} & Management \\
Vision, Goals \& Objectives & alignment & `They identify causes of ERP
    implementation failure as excessive customisation, dilemma of internal
    integration, poor understanding of business implications and requirements,
    lack of change management strategy, poor data quality, misalignment of IT
    with business, hidden costs, limited training, and lack of top management
    support.' \autocite[681]{AliEtAl2017ERPSystemImplem} & Management \\
Vision, Goals \& Objectives & business plan & `Important CSFs identified are:
    ERP team work and composition, top management support, business plan and
    vision, effective communication, project management, project champion,
    appropriate business and legacy systems, change management programmes,
    culture, BPR, minimum customisation, software development, testing, trouble
    shooting, monitoring, and evaluation of performance.'
    \autocite[675]{AliEtAl2017ERPSystemImplem} & Management \\
Vision, Goals \& Objectives & business plan & `Lesser, but still important CSFs
    are, having a good business plan, vision, having a project champion,
    appropriate business and legacy systems, change management programmes,
    culture, BPR, minimum customisation, software development, testing, trouble
    shooting, monitoring, and the evaluation of performance (Markus, Axline,
    Petrie and Tanis, 2000; Bancroft et al., 1998; Bingi et al., 1999; Nah et
    al., 2001; Umble et al., 2003; Ehie and Madsen, 2005; Sarkar and Lee, 2003;
    Umble et al., 2003; Kim et al., 2005; Motwani et al., 2005; Nah and Delgado,
    2006; Maguire et al., 2010).' \autocite[682]{AliEtAl2017ERPSystemImplem} &
    Management \\
Vision, Goals \& Objectives & business plan & `Strategic: Top management
    support, business plan and vision have been frequently recognized as the
    most significant and critical success factors in ERP system execution
    projects (Somers and Nelson, 2001).'
    \autocite[629]{AnjumEtAl2015FactorManipuERP} & Management \\
Vision, Goals \& Objectives & business plan & `P7: The level of integration of
    business planning with IT or ERP planning is positively related to project
    implementation success.' \autocite[48]{KhattakEtAl2013InvestCriticSucces} &
    Management \\
Vision, Goals \& Objectives & business plan & `The research concludes that: (1)
    Quality (adequacy) and quantity of training and education of
    personnel/users, role and effectiveness of management in reducing the users'
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    resistance, use of steering committee for control purpose, top management
    support or involvement, clearly specified goals/objectives/scope regarding
    ERP system, ease of system's use and users' acceptance, vendor's support,
    project management, effective communication among the organizational members
    and a balanced team for ERP implementation are practically considered by the
    successful enterprises in China while planning and going for the
    implementation of the ERP system and are thus critical for the success of
    ERP systems implementation projects, ignoring of which may cause
    implementation failure in the Chinese organizations; (2) Some of the factors
    deemed imperative for ERP systems implementation success in the literature
    like; selection of a right full time project manager with extensive
    experience, presence/existence of a champion, integration of business
    planning with IT/ERP planning, use and role of consultant, change management
    strategy and programs, competency in use of IT and IT infrastructure,
    business...' \autocite[68]{KhattakEtAl2013InvestCriticSucces} & Management
    \\
Vision, Goals \& Objectives & business plan & `According to the literature, the
    most studied factors were: Top Management Support, Effective Communication,
    Training, and Education, Business plan and vision, Project Management, BPR
    management, Change Management, Project team Composition/ Teamwork, Project
    champion, ERP Choices, Technical Implementation, Technological
    Infrastructure, Legacy systems consideration.'
    \autocite[112]{MahrazEtAl2020CompilAnalysCritic} & Management \\
Vision, Goals \& Objectives & business plan & `The findings of our study reveal
    that `appropriate business and IT legacy systems', `business
    plan/vision/goals/justification', `business process reengineering', `change
    management culture and programme', `communication', `ERP teamwork and
    composition', `monitoring and evaluation of performance', `project
    champion', `project management', `software/system development, testing and
    troubleshooting', `top management support', `data management', `ERP strategy
    and implementation methodology', `ERP vendor', `organizational
    characteristics', `fit between ERP and business/process', `national culture'
    and `country-related functional requirement' were the commonly extracted
    factors across these 10 countries/regions.'
    \autocite[548]{NgaiEtAl2008ExaminCriticSucces} & Management \\
Vision, Goals \& Objectives & business plan & `Eleven critical factors were
    identified, such as ERP teamwork and composition, change management program
    and culture, top management support, business plan and vision, business
    process reengineering (BPR) and minimum customisation, effective
    communications, project management, software development, testing and
    troubleshooting, monitoring and evaluating performance, project champion,
    and appropriate business and IT legacy systems.'
    \autocite[6]{Rabaai2009IdentiCriticSucces} & Management \\
Vision, Goals \& Objectives & business plan & `Based on the work by Markus and
    Tanis (2000), Nah and Delgado organised these factors into seven main
    categories: (1) Business plan and vision; (2) Change management; (3)
    Communication; (4) ERP team composition, skills, and compensation; (5)
    Project management; (6) Top management support and championship; and (7)
    System analysis, selection, and technical implementation.'
    \autocite[6]{Rabaai2009IdentiCriticSucces} & Management \\
Vision, Goals \& Objectives & business plan & `Critical success factors
    identified in Turkish studies Author (s) Critical Success Factors Baskak\&
    Cetisli (2003) Top management support, business plan and vision, ERP
    teamwork, ERP package selection, change management, user training and
    education, effective communication, project management, data integration,
    software testing and troubleshooting, appropriate legacy systems, monitoring
    and evaluation of performance.' \autocite[62]{SaygiliEtAl2017EndUsersPercep}
    & Management \\
```

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Vision, Goals \& Objectives & business plan & `Item Description 1 top management
    support 25 application project costs 2 effective communication 26
    interdepartmental cooperation 3 interdepartmental communication 27 dedicated
    resources 4 clear goal and objectives 28 ERP vendor relations 5 business
    plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's
    development tools 7 education on new business process 31 organizational
    characteristics 8 user training\& education 32 employee / team morale-
    motivation 9 user acceptance 33 leadership of the project team 10 managing
    cultural change 34 project team competence- composition 11 business process
    reengineering 35 ERP team work 12 customization 36 steering committee 13
    minimal customization 37 empowered decision makers 14 software configuration
    38 use of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Management \\
Vision, Goals \& Objectives & business plan & `Related Sub-Factors 1 (11)
    Business project reengineering (18) Implementation strategies (23)
    Management of expectations (24) Project management (32) Employee / team
    morale \& motivation (33) Leadership of the project team (34) Project team
    competence and composition 2 (14) Software configuration (21) IT
    infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30)
    Support of vendor development tools (38) Use of consultants 3 (40) Project
    champion (46) National culture (47) Country related functional requirements
    (48) Centralization 4 (1) Top management support (2) Effective communication
    (3) Interdepartmental communication (4) Clear goals and objectives (5)
    Business plan \& vision 5 (15) Data accuracy (16) Data integration (42) Data
    analysis and conversion 6 (7) Education on new business processes (8) User
    training and education (9) User acceptance (10) Managing cultural change
    this result maybe, end-users resist changing business processes instead they
    prefer customizations in ERP software.'
    \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Management \\
Vision, Goals \& Objectives & business strategy & `Summarising, Velcu (2010),
    using an analytical approach to investigate ERP system implementations,
    reports that when ERP system implementation strategies are aligned with
    business strategy, it is more likely that ERP implementation will be
    completed on budget and on time.' \autocite[678]{AliEtAl2017ERPSystemImplem}
    & Management \\
Vision, Goals \& Objectives & goals & `They rate CSFs by a degree of importance
    during ERP implementation as follows: (1) top management support; (2)
    project team competence; (3) inter-departmental cooperation; (4) clear goals
    and objectives; (5) project management; (6) inter-departmental
    communication; (7) management of expectation; (8) project champion; (9)
    vendors' support; (10) careful package selection; (11) data analysis and
    conversion; (12) dedicated resources; (13) use of steering committee; (14)
    user training on software; (15) education on new business processes; (16)
    BPR; (17) minimal customisation; (18) architecture choices; (19) change
    management; (20) partnership with vendors; (21) use of vendors' tool; and
    (22) use of consultant.' \autocite[674]{AliEtAl2017ERPSystemImplem} &
    Management \\
Vision, Goals \& Objectives & goals & `CSFs identified for successful
    implementation are: a clear understanding of strategic goals, top management
    commitment and support, organisational change management strategy, good
    implementation team, data accuracy, extensive education and training,
    focussed performance measures, and multi-site issues.'
    \autocite[675]{AliEtAl2017ERPSystemImplem} & Management \\
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Vision, Goals \& Objectives & goals & `Extrinsic(3) Organizational CSFs (15)
    People CSFs (12) Technological CSFs (5) ● Communication within the company ●
    Organization resistance ● Project budget ● Project management ●
    Implementation strategy ● Strategic goals and objectives ● Business process
    reengineering ● organizational culture ● knowledge base of the company ●
    Project planning and control ● Facilitating conditions ● Organization size ●
    The vision of the organization ● Readiness of organizations ● Clarity of
    potential cost ● User involvement ● Selection of vendor/consult ant ●
    Project team ● Top management support ● Training of user ● Trust on vendor ●
    Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender
    ● Highest degree attained ● Selection of ERP package ● IT infrastructure ●
    Data integrity and system testing.'
    \autocite[4686]{HuangEtAl2021CriticSuccesFactor} & Management \\
Vision, Goals \& Objectives & goals & `The research concludes that: (1) Quality
    (adequacy) and quantity of training and education of personnel/users, role
    and effectiveness of management in reducing the users' resistance, use of
    steering committee for control purpose, top management support or
    involvement, clearly specified goals/objectives/scope regarding ERP system,
    ease of system's use and users' acceptance, vendor's support, project
    management, effective communication among the organizational members and a
    balanced team for ERP implementation are practically considered by the
    successful enterprises in China while planning and going for the
    implementation of the ERP system and are thus critical for the success of
    ERP systems implementation projects, ignoring of which may cause
    implementation failure in the Chinese organizations; (2) Some of the factors
    deemed imperative for ERP systems implementation success in the literature
    like; selection of a right full time project manager with extensive
    experience, presence/existence of a champion, integration of business
    planning with IT/ERP planning, use and role of consultant, change management
    strategy and programs, competency in use of IT and IT infrastructure,
    business...' \autocite[68]{KhattakEtAl2013InvestCriticSucces} & Management
    \\
Vision, Goals \& Objectives & goals & `The findings of our study reveal that
    `appropriate business and IT legacy systems', `business
    plan/vision/goals/justification', `business process reengineering', `change
    management culture and programme', `communication', `ERP teamwork and
    composition', `monitoring and evaluation of performance', `project
    champion', `project management', `software/system development, testing and
    troubleshooting', `top management support', `data management', `ERP strategy
    and implementation methodology', `ERP vendor', `organizational
    characteristics', `fit between ERP and business/process', `national culture'
    and `country-related functional requirement' were the commonly extracted
    factors across these 10 countries/regions.'
    \autocite[548]{NgaiEtAl2008ExaminCriticSucces} & Management \\
Vision, Goals \& Objectives & goals & `Although the project communication
    planning was considered ineffective in both sectors, majorities in both
    sectors saw ERP implementations as fitting the organisation's vision and
    largely agreed the project goals and benefits were clear.'
    \autocite[97]{RabaaiEtAl2015CulturPerspeon} & Management \\
Vision, Goals \& Objectives & goals & `Related Sub-Factors 1 (11) Business
    project reengineering (18) Implementation strategies (23) Management of
    expectations (24) Project management (32) Employee / team morale \&
    motivation (33) Leadership of the project team (34) Project team competence
    and composition 2 (14) Software configuration (21) IT infrastructure (28)
    ERP vendor relations (29) Ongoing vendor support (30) Support of vendor
    development tools (38) Use of consultants 3 (40) Project champion (46)
    National culture (47) Country related functional requirements (48)
    Centralization 4 (1) Top management support (2) Effective communication (3)
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    Interdepartmental communication (4) Clear goals and objectives (5) Business
    plan \& vision 5 (15) Data accuracy (16) Data integration (42) Data analysis
    and conversion 6 (7) Education on new business processes (8) User training
    and education (9) User acceptance (10) Managing cultural change this result
    maybe, end-users resist changing business processes instead they prefer
    customizations in ERP software.'
    \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Management \\
Vision, Goals \& Objectives & goals & `Educate and communicate management goals
    and long-term perspectives in implementations requiring new business process
    reengineering.' \autocite[74]{SaygiliEtAl2017EndUsersPercep} & Management \\
Vision, Goals \& Objectives & goals & `Chang [2004] indicates that: (a) 90% of
    ERP implementations are delivered late or are over budget, (b) enterprise
    initiatives show a 67% fail rate in achieving corporate goals and are
    considered negative or unsuccessful, (c) more than 40% of all large-scale
    projects fail.' \autocite[2]{ShaulEtAl2013CriticSuccesFactor} & Management
    \\
Vision, Goals \& Objectives & misalignment of IT with business & `They identify
    causes of ERP implementation failure as excessive customisation, dilemma of
    internal integration, poor understanding of business implications and
    requirements, lack of change management strategy, poor data quality,
    misalignment of IT with business, hidden costs, limited training, and lack
    of top management support.' \autocite[681]{AliEtAl2017ERPSystemImplem} &
    Management \\
Vision, Goals \& Objectives & objectives & `They rate CSFs by a degree of
    importance during ERP implementation as follows: (1) top management support;
    (2) project team competence; (3) inter-departmental cooperation; (4) clear
    goals and objectives; (5) project management; (6) inter-departmental
    communication; (7) management of expectation; (8) project champion; (9)
    vendors' support; (10) careful package selection; (11) data analysis and
    conversion; (12) dedicated resources; (13) use of steering committee; (14)
    user training on software; (15) education on new business processes; (16)
    BPR; (17) minimal customisation; (18) architecture choices; (19) change
    management; (20) partnership with vendors; (21) use of vendors' tool; and
    (22) use of consultant.' \autocite[674]{AliEtAl2017ERPSystemImplem} &
    Management \\
Vision, Goals \& Objectives & objectives & `Extrinsic(3) Organizational CSFs
    (15) People CSFs (12) Technological CSFs (5) ● Communication within the
    company ● Organization resistance ● Project budget ● Project management ●
    Implementation strategy ● Strategic goals and objectives ● Business process
    reengineering ● organizational culture ● knowledge base of the company ●
    Project planning and control ● Facilitating conditions ● Organization size ●
    The vision of the organization ● Readiness of organizations ● Clarity of
    potential cost ● User involvement ● Selection of vendor/consult ant ●
    Project team ● Top management support ● Training of user ● Trust on vendor ●
    Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender
    ● Highest degree attained ● Selection of ERP package ● IT infrastructure ●
    Data integrity and system testing.'
    \autocite[4686]{HuangEtAl2021CriticSuccesFactor} & Management \\
Vision, Goals \& Objectives & objectives & `The research concludes that: (1)
    Quality (adequacy) and quantity of training and education of
    personnel/users, role and effectiveness of management in reducing the users'
    resistance, use of steering committee for control purpose, top management
    support or involvement, clearly specified goals/objectives/scope regarding
    ERP system, ease of system's use and users' acceptance, vendor's support,
    project management, effective communication among the organizational members
    and a balanced team for ERP implementation are practically considered by the
    successful enterprises in China while planning and going for the
    implementation of the ERP system and are thus critical for the success of
```

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    ERP systems implementation projects, ignoring of which may cause
    implementation failure in the Chinese organizations; (2) Some of the factors
    deemed imperative for ERP systems implementation success in the literature
    like; selection of a right full time project manager with extensive
    experience, presence/existence of a champion, integration of business
    planning with IT/ERP planning, use and role of consultant, change management
    strategy and programs, competency in use of IT and IT infrastructure,
    business...' \autocite[68]{KhattakEtAl2013InvestCriticSucces} & Management
    \\
Vision, Goals \& Objectives & objectives & `The whole organisation should be
    aware of the project scope, its objectives and activities as an effective
    communication plan will have a direct impact on the success of the change
    management program (Mendel, 1999).'
    \autocite[10]{Rabaai2009IdentiCriticSucces} & Management \\
Vision, Goals \& Objectives & objectives & `d) Correspondence failure, when
    there is no match between IT systems and the planned objectives.'
    \autocite[39]{RavasanEtAl2014FCM-BaDynamiModeli} & Management \\
Vision, Goals \& Objectives & objectives & `Generally, it is believed that the
    project is partially failed because it is not completed within time and/or
    budget (process failure), the ERP systems do not live up to user
    expectations (expectation failure), and there is no match between ERP
    systems and the planned objectives (correspondence failure).'
    \autocite[40]{RavasanEtAl2014FCM-BaDynamiModeli} & Management \\
Vision, Goals \& Objectives & objectives & `Item Description 1 top management
    support 25 application project costs 2 effective communication 26
    interdepartmental cooperation 3 interdepartmental communication 27 dedicated
    resources 4 clear goal and objectives 28 ERP vendor relations 5 business
    plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's
    development tools 7 education on new business process 31 organizational
    characteristics 8 user training\& education 32 employee / team morale-
    motivation 9 user acceptance 33 leadership of the project team 10 managing
    cultural change 34 project team competence- composition 11 business process
    reengineering 35 ERP team work 12 customization 36 steering committee 13
    minimal customization 37 empowered decision makers 14 software configuration
    38 use of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Management \\
Vision, Goals \& Objectives & objectives & `Related Sub-Factors 1 (11) Business
    project reengineering (18) Implementation strategies (23) Management of
    expectations (24) Project management (32) Employee / team morale \&
    motivation (33) Leadership of the project team (34) Project team competence
    and composition 2 (14) Software configuration (21) IT infrastructure (28)
    ERP vendor relations (29) Ongoing vendor support (30) Support of vendor
    development tools (38) Use of consultants 3 (40) Project champion (46)
    National culture (47) Country related functional requirements (48)
    Centralization 4 (1) Top management support (2) Effective communication (3)
    Interdepartmental communication (4) Clear goals and objectives (5) Business
    plan \& vision 5 (15) Data accuracy (16) Data integration (42) Data analysis
    and conversion 6 (7) Education on new business processes (8) User training
    and education (9) User acceptance (10) Managing cultural change this result
    maybe, end-users resist changing business processes instead they prefer
    customizations in ERP software.'
    \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Management \\
Vision, Goals \& Objectives & vision & `Important CSFs identified are: ERP team
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    work and composition, top management support, business plan and vision,
    effective communication, project management, project champion, appropriate
    business and legacy systems, change management programmes, culture, BPR,
    minimum customisation, software development, testing, trouble shooting,
    monitoring, and evaluation of performance.'
    \autocite[675]{AliEtAl2017ERPSystemImplem} & Management \\
Vision, Goals \& Objectives & vision & `Lesser, but still important CSFs are,
    having a good business plan, vision, having a project champion, appropriate
    business and legacy systems, change management programmes, culture, BPR,
    minimum customisation, software development, testing, trouble shooting,
    monitoring, and the evaluation of performance (Markus, Axline, Petrie and
    Tanis, 2000; Bancroft et al., 1998; Bingi et al., 1999; Nah et al., 2001;
    Umble et al., 2003; Ehie and Madsen, 2005; Sarkar and Lee, 2003; Umble et
    al., 2003; Kim et al., 2005; Motwani et al., 2005; Nah and Delgado, 2006;
    Maguire et al., 2010).' \autocite[682]{AliEtAl2017ERPSystemImplem} &
    Management \\
Vision, Goals \& Objectives & vision & `Strategic: Top management support,
    business plan and vision have been frequently recognized as the most
    significant and critical success factors in ERP system execution projects
    (Somers and Nelson, 2001).' \autocite[629]{AnjumEtAl2015FactorManipuERP} &
    Management \\
Vision, Goals \& Objectives & vision & `Frequency analysis of CSFs in literature
    CSF category Top management commitment and support Change management BPR and
    software configuration Training and job redesign Project team: the best and
    brightest Implementation strategy and timeframe Consultant selection and
    relationship Visioning and planning Balanced team Project champion
    Communication plan IT infrastructure Managing cultural change Post-
    implementation evaluation Selection of ERP Team morale and motivation
    Vanilla ERP Project management Troubleshooting/crises management Legacy
    system consideration Data conversion and integrity System testing Client
    consultation Project cost planning and management Build a business case
    Empowered decision makers Number of instances cited in literature 25 25 23
    23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very
    often focused on only a specific aspect of the implementation process or a
    specific CSF.' \autocite[340]{FinneyEtAl2007ERPImplemCompil} & Management \\
Vision, Goals \& Objectives & vision & `Extrinsic(3) Organizational CSFs (15)
    People CSFs (12) Technological CSFs (5) ● Communication within the company ●
    Organization resistance ● Project budget ● Project management ●
    Implementation strategy ● Strategic goals and objectives ● Business process
    reengineering ● organizational culture ● knowledge base of the company ●
    Project planning and control ● Facilitating conditions ● Organization size ●
    The vision of the organization ● Readiness of organizations ● Clarity of
    potential cost ● User involvement ● Selection of vendor/consult ant ●
    Project team ● Top management support ● Training of user ● Trust on vendor ●
    Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender
    ● Highest degree attained ● Selection of ERP package ● IT infrastructure ●
    Data integrity and system testing.'
    \autocite[4686]{HuangEtAl2021CriticSuccesFactor} & Management \\
Vision, Goals \& Objectives & vision & `According to the literature, the most
    studied factors were: Top Management Support, Effective Communication,
    Training, and Education, Business plan and vision, Project Management, BPR
    management, Change Management, Project team Composition/ Teamwork, Project
    champion, ERP Choices, Technical Implementation, Technological
    Infrastructure, Legacy systems consideration.'
    \autocite[112]{MahrazEtAl2020CompilAnalysCritic} & Management \\
Vision, Goals \& Objectives & vision & `Organizations need to establish a long-
    term vision, while continually improving the ERP implementation process.'
    \autocite[113]{MahrazEtAl2020CompilAnalysCritic} & Management \\
```

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Vision, Goals \& Objectives & vision & `The findings of our study reveal that
    `appropriate business and IT legacy systems', `business
    plan/vision/goals/justification', `business process reengineering', `change
    management culture and programme', `communication', `ERP teamwork and
    composition', `monitoring and evaluation of performance', `project
    champion', `project management', `software/system development, testing and
    troubleshooting', `top management support', `data management', `ERP strategy
    and implementation methodology', `ERP vendor', `organizational
    characteristics', `fit between ERP and business/process', `national culture'
    and `country-related functional requirement' were the commonly extracted
    factors across these 10 countries/regions.'
    \autocite[548]{NgaiEtAl2008ExaminCriticSucces} & Management \\
Vision, Goals \& Objectives & vision & `Eleven critical factors were identified,
    such as ERP teamwork and composition, change management program and culture,
    top management support, business plan and vision, business process
    reengineering (BPR) and minimum customisation, effective communications,
    project management, software development, testing and troubleshooting,
    monitoring and evaluating performance, project champion, and appropriate
    business and IT legacy systems.' \autocite[6]{Rabaai2009IdentiCriticSucces}
    & Management \\
Vision, Goals \& Objectives & vision & `The factors identified were management
    and leadership, visioning and planning, ERP package selection, communication
    process management, training and education, project management, legacy
    systems management, system integration, system testing, cultural and
    structural changes, and performance evaluation and management.'
    \autocite[6]{Rabaai2009IdentiCriticSucces} & Management \\
Vision, Goals \& Objectives & vision & `Based on the work by Markus and Tanis
    (2000), Nah and Delgado organised these factors into seven main categories:
    (1) Business plan and vision; (2) Change management; (3) Communication; (4)
    ERP team composition, skills, and compensation; (5) Project management; (6)
    Top management support and championship; and (7) System analysis, selection,
    and technical implementation.' \autocite[6]{Rabaai2009IdentiCriticSucces} &
    Management \\
Vision, Goals \& Objectives & vision & `Although the project communication
    planning was considered ineffective in both sectors, majorities in both
    sectors saw ERP implementations as fitting the organisation's vision and
    largely agreed the project goals and benefits were clear.'
    \autocite[97]{RabaaiEtAl2015CulturPerspeon} & Management \\
Vision, Goals \& Objectives & vision & `Critical success factors identified in
    Turkish studies Author (s) Critical Success Factors Baskak\& Cetisli (2003)
    Top management support, business plan and vision, ERP teamwork, ERP package
    selection, change management, user training and education, effective
    communication, project management, data integration, software testing and
    troubleshooting, appropriate legacy systems, monitoring and evaluation of
    performance.' \autocite[62]{SaygiliEtAl2017EndUsersPercep} & Management \\
Vision, Goals \& Objectives & vision & `Item Description 1 top management
    support 25 application project costs 2 effective communication 26
    interdepartmental cooperation 3 interdepartmental communication 27 dedicated
    resources 4 clear goal and objectives 28 ERP vendor relations 5 business
    plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's
    development tools 7 education on new business process 31 organizational
    characteristics 8 user training\& education 32 employee / team morale-
    motivation 9 user acceptance 33 leadership of the project team 10 managing
    cultural change 34 project team competence- composition 11 business process
    reengineering 35 ERP team work 12 customization 36 steering committee 13
    minimal customization 37 empowered decision makers 14 software configuration
    38 use of consultants 15 data accuracy 39 obtain business analysts 16 data
    analysis- conversion 40 project champion 17 software development testing \&
```

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    troubleshooting 41 appropriate business-legacy systems 18 implementation
    strategies 42 data integration 19 ERP package selection 43 scope \& vision
    based performance 20 feasible evaluation of ERP project 44 monitoring-
    evaluation of performance 21 IT infrastructure 45 post imple...'
    \autocite[64]{SaygiliEtAl2017EndUsersPercep} & Management \\
Vision, Goals \& Objectives & vision & `Related Sub-Factors 1 (11) Business
    project reengineering (18) Implementation strategies (23) Management of
    expectations (24) Project management (32) Employee / team morale \&
    motivation (33) Leadership of the project team (34) Project team competence
    and composition 2 (14) Software configuration (21) IT infrastructure (28)
    ERP vendor relations (29) Ongoing vendor support (30) Support of vendor
    development tools (38) Use of consultants 3 (40) Project champion (46)
    National culture (47) Country related functional requirements (48)
    Centralization 4 (1) Top management support (2) Effective communication (3)
    Interdepartmental communication (4) Clear goals and objectives (5) Business
    plan \& vision 5 (15) Data accuracy (16) Data integration (42) Data analysis
    and conversion 6 (7) Education on new business processes (8) User training
    and education (9) User acceptance (10) Managing cultural change this result
    maybe, end-users resist changing business processes instead they prefer
    customizations in ERP software.'
    \autocite[67]{SaygiliEtAl2017EndUsersPercep} & Management \\
Vision, Goals \& Objectives & vision & `Setting vision and direction for the
    business, harnessing employees' energy and creativity and implementing
    modern concepts A detailed examination and definition of business needs,
    company capabilities, constraints and modules of the core system to support
    critical business practices and partners.'
    \autocite[24]{ShaulEtAl2013CriticSuccesFactor} & Management \\
```

Listing I.13: Output File CSFReview.csv

```
"Critical Success Factor
","Term
","Sentence
","Reference
","Page
","Collection
","Production
","Use
","Management
"
"Business Analysis Skills & Competencies","business analyst","
`CSFs for successful ERP implementation are identified as top management
support, presence of a champion, good communication with stakeholders, effective
project planning, business process re-engineering (BPR), and using a business
analyst on the project team (Bancroft et al., 1998; Bingi et al., 1999).'
","AliEtAl2017ERPSystemImplem",674,"","x","",""
"Business Analysis Skills & Competencies","business analyst","
`Successful ERP implementation requires the coordination of many activities and
a close cooperation between managers, employees, IT specialists, business
analysts and consultants [39].'
","ChatzoglouEtAl2016AnteceOutcomERP",1255,"","x","",""
"Business Analysis Skills & Competencies","business analyst","
`The critical success factors consistently identified in the literature include
top management support, the presence of a champion, good communication with all
stakeholders, effective project management, reengineering of business processes,
an understanding of corporate cultural change, and the use of business analysts
on the project team.'
","RabaaiEtAl2015CulturPerspeon",88,"","x","",""
"Business Analysis Skills & Competencies","business analyst","
`Item Description 1 top management support 25 application project costs 2
effective communication 26 interdepartmental cooperation 3 interdepartmental
communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor
relations 5 business plan-vision 29 ongoing vendor support 6 change management
30 use of vendor's development tools 7 education on new business process 31
organizational characteristics 8 user training& education 32 employee / team
morale-motivation 9 user acceptance 33 leadership of the project team 10
managing cultural change 34 project team competence- composition 11 business
process reengineering 35 ERP team work 12 customization 36 steering committee 13
minimal customization 37 empowered decision makers 14 software configuration 38
use of consultants 15 data accuracy 39 obtain business analysts 16 data
analysis- conversion 40 project champion 17 software development testing &
troubleshooting 41 appropriate business-legacy systems 18 implementation
strategies 42 data integration 19 ERP package selection 43 scope & vision based
performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of
performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","x","",""
"Business Process Reengineering","BPR","
`CSFs for successful ERP implementation are identified as top management
support, presence of a champion, good communication with stakeholders, effective
project planning, business process re-engineering (BPR), and using a business
analyst on the project team (Bancroft et al., 1998; Bingi et al., 1999).'
","AliEtAl2017ERPSystemImplem",674,"x","","x",""
"Business Process Reengineering","BPR","
`They rate CSFs by a degree of importance during ERP implementation as follows:
(1) top management support; (2) project team competence; (3) inter-departmental
cooperation; (4) clear goals and objectives; (5) project management; (6) inter-
departmental communication; (7) management of expectation; (8) project champion;
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(9) vendors' support; (10) careful package selection; (11) data analysis and
conversion; (12) dedicated resources; (13) use of steering committee; (14) user
training on software; (15) education on new business processes; (16) BPR; (17)
minimal customisation; (18) architecture choices; (19) change management; (20)
partnership with vendors; (21) use of vendors' tool; and (22) use of
consultant.'
","AliEtAl2017ERPSystemImplem",674,"x","","x",""
"Business Process Reengineering","BPR","
`Important CSFs identified are: ERP team work and composition, top management
support, business plan and vision, effective communication, project management,
project champion, appropriate business and legacy systems, change management
programmes, culture, BPR, minimum customisation, software development, testing,
trouble shooting, monitoring, and evaluation of performance.'
","AliEtAl2017ERPSystemImplem",675,"x","","x",""
"Business Process Reengineering","BPR","
`They observe that vendor failure to adapt to local culture, BPR, managing local
human resources, lack of information sharing, failure to understand cultural
characteristics, lack of adaptability towards a changing business and economic
environment, lack of cost control functions (i.e. adapting to changing costs),
and failure to understand technical issues are the main causes of ERP
implementation failure.'
","AliEtAl2017ERPSystemImplem",681,"x","","x",""
"Business Process Reengineering","BPR","
`Lesser, but still important CSFs are, having a good business plan, vision,
having a project champion, appropriate business and legacy systems, change
management programmes, culture, BPR, minimum customisation, software
development, testing, trouble shooting, monitoring, and the evaluation of
performance (Markus, Axline, Petrie and Tanis, 2000; Bancroft et al., 1998;
Bingi et al., 1999; Nah et al., 2001; Umble et al., 2003; Ehie and Madsen, 2005;
Sarkar and Lee, 2003; Umble et al., 2003; Kim et al., 2005; Motwani et al.,
2005; Nah and Delgado, 2006; Maguire et al., 2010).'
","AliEtAl2017ERPSystemImplem",682,"x","","x",""
"Business Process Reengineering","BPR","
`In this work, authors mentioned that lack of education, BPR, project
management, top management support and unrealistic expectations of users could
lead companies to fail.'
","AmidEtAl2012IdentiClassiERP",229,"x","","x",""
"Business Process Reengineering","BPR","
`BPR can be defined as the primary rethinking and essential redesign of business
procedures to attain remarkable enhancement in significant, existing procedures
of performances, like quality, speed approaches, cost and service (Hammer and
Champy, 1993; Koch, 2001; Huang et al., 2004).'
","AnjumEtAl2015FactorManipuERP",629,"x","","x",""
"Business Process Reengineering","BPR","
`Necessary Business Process Reengineering (BPR) activities in the organization,
customizations on the ERP software and training of users about the new system
should be managed and coordinated by the project management of the ERP project
to remove the incompatibilities between technology, organization and people.'
","BasogluEtAl2007OrganiAdoptiEnterp",75,"x","","x",""
"Business Process Reengineering","BPR","
`Within that subject, Van der Aalst and Weijters (2005) introduced processing
mining as a preliminary step of ERP implementation, while Chiplunkar, Deshmukh,
and Chattopadhyay (2003) suggested the capture of complete business environment
in a BPR project with the help of information technology.'
","BasogluEtAl2007OrganiAdoptiEnterp",78,"x","","x",""
"Business Process Reengineering","BPR","
`This problem can only be solved by adapting the organization to the package
through extensive BPR (Kremers & Van Dissel, 2000; Somers & Nelson, 2003).'
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","BasogluEtAl2007OrganiAdoptiEnterp",81,"x","","x",""
"Business Process Reengineering","BPR","
`BPR was described as ``the fundamental rethinking and radical design of
business processes to achieve dramatic improvement in critical, contemporary
measures of performance such as cost, quality, service and speed'' by Hammer and
Champy (1993).'
","BasogluEtAl2007OrganiAdoptiEnterp",81,"x","","x",""
"Business Process Reengineering","BPR","
`As well as improving the efficiency of an individual company success, BPR can
be envisaged as a hierarchy of business reconfiguration, from local exploitation
through internal integration and business process redesign to business network
redesign and ultimately business scope redefinition (Venkatraman, 1991).'
","BasogluEtAl2007OrganiAdoptiEnterp",81,"x","","x",""
"Business Process Reengineering","BPR","
`However, achieving BPR is as hard as implementing an ERP system, but it is a
must to obtain optimization of ERP systems.'
","BasogluEtAl2007OrganiAdoptiEnterp",81,"x","","x",""
"Business Process Reengineering","BPR","
`As well as BPR, customization is also a crucial, lengthy, and costly aspect in
the compatibility of ERP system and the organizational processes (Yusuf et al.,
2004).'
","BasogluEtAl2007OrganiAdoptiEnterp",81,"x","","x",""
"Business Process Reengineering","BPR","
`BPR activities and training are also critical factors in ERP implementation
that have effects on organizational adoption (Somers & Nelson, 2003).'
","BasogluEtAl2007OrganiAdoptiEnterp",82,"x","","x",""
"Business Process Reengineering","BPR","
`BPR is a must for ERP projects.'
","BasogluEtAl2007OrganiAdoptiEnterp",82,"x","","x",""
"Business Process Reengineering","BPR","
`They suggested that innovative characteristics of an organization like BPR,
technical compatibility and perceived complexity; organizational characteristics
like top management support, organizational objective consensus and training;
and finally environmental characteristics like competitive pressure have a
direct effect on ERP implementation success and end user satisfaction (see Fig.
6).'
","BasogluEtAl2007OrganiAdoptiEnterp",83,"x","","x",""
"Business Process Reengineering","BPR","
`For that purpose, adequate customization and necessary BPR, in which business
processes are designed within the framework of the target ERP system, has to be
performed (Lee & Myers, 2004; Soffer, Golany, & Dori, 2005) (see Fig. 15).'
","BasogluEtAl2007OrganiAdoptiEnterp",88,"x","","x",""
"Business Process Reengineering","BPR","
`If the project is managed by performing BPR and customization activities
adequately, moving from P1 to P2 is not hard.'
","BasogluEtAl2007OrganiAdoptiEnterp",88,"x","","x",""
"Business Process Reengineering","BPR","
`Work practices, poor data quality, BPR activities, customization of the ERP
system, internal staff adequacy, training, top management support, quality of
consultants are the main problems (Genoulaz & Millet, 2006).'
","BasogluEtAl2007OrganiAdoptiEnterp",89,"x","","x",""
"Business Process Reengineering","BPR","
`Additionally, critical success factors of ERP projects like customization, BPR,
top management support, training and communication were grouped under these
three actors and also project management for testing their effect on
organizational adoption, too.'
","BasogluEtAl2007OrganiAdoptiEnterp",89,"x","","x",""
"Business Process Reengineering","BPR","
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`As well as customization of the ERP system, BPR is very crucial on the adoption
of the ERP projects (Kremers & Van Dissel, 2000; Somers & Nelson, 2003).'
","BasogluEtAl2007OrganiAdoptiEnterp",91,"x","","x",""
"Business Process Reengineering","BPR","
`Business process reengineering (BPR) has been, often, proposed as a critical
success factor for ERP implementation [29].'
","ChatzoglouEtAl2016AnteceOutcomERP",1255,"x","","x",""
"Business Process Reengineering","BPR","
`Typically, BPR is carried out in order to restructure non-value-adding
operations, reduce the complexity of business processes and eliminate
inefficient processes [43].'
","ChatzoglouEtAl2016AnteceOutcomERP",1255,"x","","x",""
"Business Process Reengineering","BPR","
`Studies in the last 5 years show that organizations that do not adapt to best
practices and care about BPR are more likely to face failure.'
","CoşkunEtAl2022ERPFailurSystem",14,"x","","x",""
"Business Process Reengineering","BPR","
`The need to conduct BPR and software configuration was the third most commonly
cited CSF.'
","FinneyEtAl2007ERPImplemCompil",337,"x","","x",""
"Business Process Reengineering","BPR","
`Table III reveals that the five most widely cited categories, top management
commitment and support, change management, BPR and software configuration,
training and job redesign, and project team: the best and brightest, are
significantly more often researched than the others.'
","FinneyEtAl2007ERPImplemCompil",339,"x","","x",""
"Business Process Reengineering","BPR","
`Frequency analysis of CSFs in literature CSF category Top management commitment
and support Change management BPR and software configuration Training and job
redesign Project team: the best and brightest Implementation strategy and
timeframe Consultant selection and relationship Visioning and planning Balanced
team Project champion Communication plan IT infrastructure Managing cultural
change Post-implementation evaluation Selection of ERP Team morale and
motivation Vanilla ERP Project management Troubleshooting/crises management
Legacy system consideration Data conversion and integrity System testing Client
consultation Project cost planning and management Build a business case
Empowered decision makers Number of instances cited in literature 25 25 23 23 21
17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often
focused on only a specific aspect of the implementation process or a specific
CSF.'
","FinneyEtAl2007ERPImplemCompil",340,"x","","x",""
"Business Process Reengineering","BPR","
`These factors include, but not limited to, poor consultant effectiveness, ERP
software misfit, unrealistic expectations from top management concerning the ERP
systems, over-reliance on heavy customization, poor quality of Business Process
Reengineering (BPR), high turnover rate of project team members, poor IT
Infrastructure, functionality problems with the system, unclear concept of the
nature and use of the ERP system from the users perspective, too tight project
schedule, lack of formal communication, part-time dedication, etc.'
","GargEtAl2013EmpiriStudyon",498,"x","","x",""
"Business Process Reengineering","BPR","
`Consultants who are not able to demonstrate a mastery of professional
communication skills, good language capability, industrial knowledge, and
business analytical skills, are not able to provide expertise concerning project
planning, ERP systems and BPR during ERP implementation and hence cannot act as
change agents and fill the knowledge gaps (Ngai et al., 2008; Stebel, 1992;
Ganesh and Mehta, 2010; Nah and Lau, 2001) (for example, communicating with
project team members and users for acquiring business requirements, conducting
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BPR and delivering professional training).'
","GargEtAl2013EmpiriStudyon",499,"x","","x",""
"Business Process Reengineering","BPR","
`If the team is not the cross-functional team consisting of people who are
familiar with both business functions, technology and products (Buckhout et al.,
1999; Bingi et al., 1999; Rosario, 2000), the team will not be able to
collaborate and contribute to BPR.'
","GargEtAl2013EmpiriStudyon",499,"x","","x",""
"Business Process Reengineering","BPR","
`The poor quality of BPR led to incorrect system configuration problems and
hence failed implementation.'
","GargEtAl2013EmpiriStudyon",499,"x","","x",""
"Business Process Reengineering","BPR","
`Poor consultant effectiveness and poor PM effectiveness can lead to a low
quality of BPR and the business processes may match poorly with the ERP systems,
resulting in implementation failure.'
","GargEtAl2014CriticSuccesFactor",405,"x","","x",""
"Business Process Reengineering","BPR","
`3.3 BPR BPR is defined by Hammer and Champy (1993) as ``the fundamental
rethinking and radical redesign of business processes to achieve dramatic
improvements in critical, contemporary measures of performance such as cost,
quality, service and speed.'' BPR analyzes the process of an organization's
business in order to identify the best way of doing things.'
","GargEtAl2014CriticSuccesFactor",408,"x","","x",""
"Business Process Reengineering","BPR","
`BPR came earlier than the popularization of ERP.'
","GargEtAl2014CriticSuccesFactor",408,"x","","x",""
"Business Process Reengineering","BPR","
`It is ERP that rescues the idea of BPR and forces the company to redefine and
redesign work flows to fit the new software: H3.'
","GargEtAl2014CriticSuccesFactor",408,"x","","x",""
"Business Process Reengineering","BPR","
`BPR is positively related with ERP implementation success.'
","GargEtAl2014CriticSuccesFactor",408,"x","","x",""
"Business Process Reengineering","BPR","
`In addition, BPR, UI was positively related to success of ERP implementation at
0.01 significance level (r = 0.763).'
","GargEtAl2014CriticSuccesFactor",411,"x","","x",""
"Business Process Reengineering","BPR","
`The results of this research support the suggested hypothesis (H3) that there
is positive relationship between BPR and success of ERP implementation at Fortis
hospital (t-value = 2.821, p-value = 0.043).'
","GargEtAl2014CriticSuccesFactor",414,"x","","x",""
"Business Process Reengineering","BPR","
`So it can be concluded that BPR is important vehicle for success of ERP
implementation as it help in re-aligning strategy, operations and systems to
deliver significantly increased financial results and customer satisfaction.'
","GargEtAl2014CriticSuccesFactor",414,"x","","x",""
"Business Process Reengineering","BPR","
`Managers have to decide if they do BPR before, during or after ERP
implementation.'
","GargEtAl2014CriticSuccesFactor",416,"x","","x",""
"Business Process Reengineering","BPR","
`(3) Hospitals normally adopt BPR to pursue multiple improvement goals including
quality, cost, flexibility, speed and accuracy.'
","GargEtAl2014CriticSuccesFactor",418,"x","","x",""
"Business Process Reengineering","BPR","
`BPR supports the re-thinking of business processes and is necessary to software

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applications such as ERP systems.'
","GargEtAl2014CriticSuccesFactor",418,"x","","x",""
"Business Process Reengineering","BPR","
`Hospitals should adopt BPR to adapt to ERP system, and should not modify the
package to adapt to business process to incorporate the best practices
worldwide.'
","GargEtAl2014CriticSuccesFactor",418,"x","","x",""
"Business Process Reengineering","BPR","
`BPR can be defined as the fundamental rethinking and radical redesign of
business process to achieve dramatic improvement in critical, contemporary
measures of performance, such as cost, quality, service and speed approaches
(Koch, 2001; Huang et al., 2004).'
","GargEtAl2014FactorInflueERP",431,"x","","x",""
"Business Process Reengineering","BPR","
`The executives of the Chinese organizations have a tendency to rely on their
intuition, experience, skills and insights from personal relationships to
evaluate and assess situations and make decisions accordingly (Martisons &
Westwood, 1997) and that is why it may be a reason of considering BPR as a least
critical success factor.'
","KhattakEtAl2013InvestCriticSucces",66,"x","","x",""
"Business Process Reengineering","BPR","
`On the other hand the Pakistani companies' executives might readily believe
that they should change their existing ways of doing business because of the ERP
systems is already in place and therefore, might have understood that the ERP
project requires BPR and that is why they treat it as a CSF.'
","KhattakEtAl2013InvestCriticSucces",66,"x","","x",""
"Business Process Reengineering","BPR","
`According to the literature, the most studied factors were: Top Management
Support, Effective Communication, Training, and Education, Business plan and
vision, Project Management, BPR management, Change Management, Project team
Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation,
Technological Infrastructure, Legacy systems consideration.'
","MahrazEtAl2020CompilAnalysCritic",112,"x","","x",""
"Business Process Reengineering","BPR","
`These three factors could be considered one from the top 3, the other elements
as IT infrastructure, BPR management, and Project management are less critical
from the participants.'
","MahrazEtAl2020CompilAnalysCritic",119,"x","","x",""
"Business Process Reengineering","BPR","
`BPR management: Business process re-engineering is one of the crucial steps in
ERP implementation.'
","MahrazEtAl2020CompilAnalysCritic",122,"x","","x",""
"Business Process Reengineering","BPR","
`3.3. Business process reengineering A certain level of BPR should be involved
for the implementation of ERP, as the packaged software may be incompatible with
the needs and business processes of the organization [10,51,69].'
","NgaiEtAl2008ExaminCriticSucces",551,"x","","x",""
"Business Process Reengineering","BPR","
`Other problems reported are lack of BPR [87], poor communications, lack of
support from management, limited level of user involvement, poor training from
vendors [90], and weakness in existing IT infrastructure [41].'
","NgaiEtAl2008ExaminCriticSucces",559,"x","","x",""
"Business Process Reengineering","BPR","
`This recognition leads us to emphasize that it is of paramount importance for
academic researchers and those involved in ERP implementation to thoroughly
understand the business practice and knowledge of the ERP adopting firms, which
are necessary for excellent performance in CSFs such as BPR, and ERP fit.'
","NgaiEtAl2008ExaminCriticSucces",561,"x","","x",""
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"Business Process Reengineering","BPR","
`the most important outcome of BPR has been viewing business activities as more
than a collection of individual or even functional tasks; it has engendered the
process-oriented view of business.'
","OsmanEtAl2019ERPCriticSucces",38,"x","","x",""
"Business Process Reengineering","BPR","
`To be clear, the company's business strategy indicates what it wants to do, BPR
indicates how to do it and the ERP system answers the question with what.'
","OsmanEtAl2019ERPCriticSucces",38,"x","","x",""
"Business Process Reengineering","BPR","
`In literature, BPR and minimal customization is the third most commonly cited
CSF.'
","OsmanEtAl2019ERPCriticSucces",38,"x","","x",""
"Business Process Reengineering","BPR","
`Once the ERP system is in use, BPR should be continued with new ideas and
updates to get full benefits of the system.'
","OsmanEtAl2019ERPCriticSucces",38,"x","","x",""
"Business Process Reengineering","BPR","
`This is because the business process reengineering (BPR) and the customisation
of the software to fit the business needs can become serious and costly problems
allied with the implementation, as there might be a difference between the
functionality offered by the software and that required by the organisation.'
","Rabaai2009IdentiCriticSucces",3,"x","","x",""
"Business Process Reengineering","BPR","
`Eleven critical factors were identified, such as ERP teamwork and composition,
change management program and culture, top management support, business plan and
vision, business process reengineering (BPR) and minimum customisation,
effective communications, project management, software development, testing and
troubleshooting, monitoring and evaluating performance, project champion, and
appropriate business and IT legacy systems.'
","Rabaai2009IdentiCriticSucces",6,"x","","x",""
"Business Process Reengineering","BPR","
`Across various developing countries, Huang and Palvia (2001) identified many
factors of national and organisational culture affecting ERP implementation
including economic status and growth, infrastructure, government regulation, low
IT maturity, small firm size, and lack of process management and BPR
experience.'
","RabaaiEtAl2015CulturPerspeon",88,"x","","x",""
"Business Process Reengineering","BPR","
`Communication for some projects must go beyond a (monthly) update as
transparency is required for academic stakeholders who may not appreciate what a
project involves in terms of BPR.'
","RabaaiEtAl2016SuccesFactorEnterp",56,"x","","x",""
"Business Process Reengineering","BPR","
`This illustrates the relationship between BPR and customisation to unique
processes in the higher education sector, which is possibly the most critical of
the CSFs for the sector, assuming the others are professionally managed.'
","RabaaiEtAl2016SuccesFactorEnterp",57,"x","","x",""
"Business Process Reengineering","BPR","
`One of the first articles that has been published about analyzing ERP failures
returned to Umble and Umble (2002) in which they mentioned that lack of
education, BPR, project management, top management support and unrealistic
expectations of users could lead companies to fail.'
","RavasanEtAl2014FCM-BaDynamiModeli",35,"x","","x",""
"Business Process Reengineering","business process re-engineering","
`The same applies to the factor business process re-engineering and
customization, which is a key factor in ERP implementation projects.'
","BarthEtAl2019CriticSuccesFactor",668,"x","","x",""

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"Business Process Reengineering","business process re-engineering","
`To use potentials of an ERP system is a major part of business process re-
engineering, which is in itself a critical success factor within ERP
implementation projects.'
","BarthEtAl2019CriticSuccesFactor",668,"x","","x",""
"Business Process Reengineering","business process re-engineering","
`This belief may adversely affect the attitude towards information sharing, and
business process re-engineering.'
","NgaiEtAl2008ExaminCriticSucces",559,"x","","x",""
"Business Process Reengineering","business process re-engineering","
`4.4 Business Process Re-engineering and System's Customisation Shehab et al.,
(2004) stated that there are two different strategic approaches to implementing
an ERP system.'
","Rabaai2009IdentiCriticSucces",8,"x","","x",""
"Business Process Reengineering","business process re-engineering","
`They are the few key areas where things must go right. . . '' An earlier paper by
this team (Ram, Corkindale and Wu, 2013) tabulated the relationships found in
the literature between CSFs and implementation or performance output success to
identify four factors consistently emerging as central, namely project
management, training and education, business process re-engineering and system
integration.'
","RabaaiEtAl2015CulturPerspeon",87,"x","","x",""
"Business Process Reengineering","business process re-engineering","
`Restructure business processes aligned with the ERP system (business process
re-engineering).'
","SaygiliEtAl2017EndUsersPercep",74,"x","","x",""
"Business Process Reengineering","business process re-engineering","
`● IT infrastructure ● System Training and knowledge transfer ● Over-dependence
on detailed and heavy customization ● High turnover rate of project team members
● Business process re-engineering ● User's resistance to transform ● ERP system
misfit Considering these critical factors, specifically affecting the
agricultural business sectors in Malaysia, there are a few possible suggestions
proposed.'
","ShukorEtAl2020EnterpResourPlanni",2055,"x","","x",""
"Business Process Reengineering","business process reengineering","
`Lack of proper integration and knowledge of business process reengineering are
other problems of local solutions.'
","AmidEtAl2012IdentiClassiERP",229,"x","","x",""
"Business Process Reengineering","business process reengineering","
`The results of this study show that ``Managers and employees readiness to
change'', ``Top management Support'', ``Business Process Reengineering'',
``Software and user interface development'' and ``Change management'' are five
top critical success factors.'
","Chan2013AustraQuantiSurvey",109,"x","","x",""
"Business Process Reengineering","business process reengineering","
`During ERP implementation, business process reengineering should take place, in
order to take full advantage of the new system [14] [34].'
","ChatzoglouEtAl2016AnteceOutcomERP",1254,"x","","x",""
"Business Process Reengineering","business process reengineering","
`In this study, the dimension of ``internal environment'' includes four factors
(top management support, business process reengineering, organizational culture,
change management).'
","ChatzoglouEtAl2016AnteceOutcomERP",1255,"x","","x",""
"Business Process Reengineering","business process reengineering","
`This includes the amount of the systems implemented, involvement of business
units, and amount of business process reengineering needed.'
","GargEtAl2013EmpiriStudyon",509,"x","","x",""
"Business Process Reengineering","business process reengineering","
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`(1) The ``Organizational'' factor in this study is defined by business plan and vision, top management support, business process reengineering, ERP product selection, selection of implementation partner/consultants and enterprise wide communication plan items which may affect the success of ERP implementation in Indian retail sector.'
","GargEtAl2015FactorAffectERP",1327,"x","","x",""
"Business Process Reengineering","business process reengineering","
`Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) ● Communication within the company ● Organization resistance ● Project budget ● Project management ● Implementation strategy ● Strategic goals and objectives ● Business process reengineering ● organizational culture ● knowledge base of the company ● Project planning and control ● Facilitating conditions ● Organization size ● The vision of the organization ● Readiness of organizations ● Clarity of potential cost ● User involvement ● Selection of vendor/consult ant ● Project team ● Top management support ● Training of user ● Trust on vendor ● Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender ● Highest degree attained ● Selection of ERP package ● IT infrastructure ● Data integrity and system testing.'
","HuangEtAl2021CriticSuccesFactor",4686,"x","","x",""
"Business Process Reengineering","business process reengineering","
`Implementation strategy Strategic goals and objectives User involvement Business process reengineering Selection of vendor/consultant IT infrastructure.'
","HuangEtAl2021CriticSuccesFactor",4688,"x","","x",""
"Business Process Reengineering","business process reengineering","
`The findings of our study reveal that `appropriate business and IT legacy systems', `business plan/vision/goals/justification', `business process reengineering', `change management culture and programme', `communication', `ERP teamwork and composition', `monitoring and evaluation of performance', `project champion', `project management', `software/system development, testing and troubleshooting', `top management support', `data management', `ERP strategy and implementation methodology', `ERP vendor', `organizational characteristics', `fit between ERP and business/process', `national culture' and `country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.'
","NgaiEtAl2008ExaminCriticSucces",548,"x","","x",""
"Business Process Reengineering","business process reengineering","
`For instance, Al-Mashari and Al-Mudimigh (2003) argued that the importance of an effective communication plan relies on the fact that it could build the ability of the entire organisation in business process reengineering, and gain all stakeholders' support and commitment.'
","Rabaai2009IdentiCriticSucces",10,"x","","x",""
"Business Process Reengineering","business process reengineering","
`ERP failure factors and categories Failure Categories Failure Factors C4: Project Management F1: Conflicts between organization and consultants/ vendor C5: Technical F2: High rate of system customization C5: Technical F3: Data management issues C2: Human Resources F4: Inadequate education and training C2: Human Resources F5: Inadequate user involvement C2: Human Resources F6: Ineffective communications system C3: Organizational F7: Internal conflicts between departments C2: Human Resources F8: Inadequate change management C3: Organizational F9: Lack of performance measurement system C3: Organizational F10: Misfit between organization culture and ERP system C3: Organizational F11: Misfit between organization structure and ERP system C3: Organizational F12: Misfits between the IT and business strategies C1: Environmental F13: Environmental pressures C3: Organizational F14: Poor business process reengineering C1: Environmental F15: Poor consultant C4: Project Management F16: Poor project management C4: Project Management F17: Poor risk management C3: Organizational F18: Poor top management support C5: Technical F19: IT Technical

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issues C2: Human Resources F20: Language barriers C4:...'
","RavasanEtAl2014FCM-BaDynamiModeli",42,"x","","x",""
"Business Process Reengineering","business process reengineering","
`Item Description 1 top management support 25 application project costs 2
effective communication 26 interdepartmental cooperation 3 interdepartmental
communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor
relations 5 business plan-vision 29 ongoing vendor support 6 change management
30 use of vendor's development tools 7 education on new business process 31
organizational characteristics 8 user training& education 32 employee / team
morale-motivation 9 user acceptance 33 leadership of the project team 10
managing cultural change 34 project team competence- composition 11 business
process reengineering 35 ERP team work 12 customization 36 steering committee 13
minimal customization 37 empowered decision makers 14 software configuration 38
use of consultants 15 data accuracy 39 obtain business analysts 16 data
analysis- conversion 40 project champion 17 software development testing &
troubleshooting 41 appropriate business-legacy systems 18 implementation
strategies 42 data integration 19 ERP package selection 43 scope & vision based
performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of
performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"x","","x",""
"Business Process Reengineering","business process reengineering","
`The sub-factors represent the fundamental management functions introduced by
Draft (1991) planning (implementation strategies, project management),
organizing (business process reengineering, management of expectations, project
team competence and composition) and leading (leadership of project team,
employee / team morale and motivation).'
","SaygiliEtAl2017EndUsersPercep",68,"x","","x",""
"Champion","champion","
`CSFs for successful ERP implementation are identified as top management
support, presence of a champion, good communication with stakeholders, effective
project planning, business process re-engineering (BPR), and using a business
analyst on the project team (Bancroft et al., 1998; Bingi et al., 1999).'
","AliEtAl2017ERPSystemImplem",674,"","","","x"
"Champion","champion","
`They rate CSFs by a degree of importance during ERP implementation as follows:
(1) top management support; (2) project team competence; (3) inter-departmental
cooperation; (4) clear goals and objectives; (5) project management; (6) inter-
departmental communication; (7) management of expectation; (8) project champion;
(9) vendors' support; (10) careful package selection; (11) data analysis and
conversion; (12) dedicated resources; (13) use of steering committee; (14) user
training on software; (15) education on new business processes; (16) BPR; (17)
minimal customisation; (18) architecture choices; (19) change management; (20)
partnership with vendors; (21) use of vendors' tool; and (22) use of
consultant.'
","AliEtAl2017ERPSystemImplem",674,"","","","x"
"Champion","champion","
`Important CSFs identified are: ERP team work and composition, top management
support, business plan and vision, effective communication, project management,
project champion, appropriate business and legacy systems, change management
programmes, culture, BPR, minimum customisation, software development, testing,
trouble shooting, monitoring, and evaluation of performance.'
","AliEtAl2017ERPSystemImplem",675,"","","","x"
"Champion","champion","
`Lesser, but still important CSFs are, having a good business plan, vision,
having a project champion, appropriate business and legacy systems, change
management programmes, culture, BPR, minimum customisation, software
development, testing, trouble shooting, monitoring, and the evaluation of
performance (Markus, Axline, Petrie and Tanis, 2000; Bancroft et al., 1998;
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Bingi et al., 1999; Nah et al., 2001; Umble et al., 2003; Ehie and Madsen, 2005;
Sarkar and Lee, 2003; Umble et al., 2003; Kim et al., 2005; Motwani et al.,
2005; Nah and Delgado, 2006; Maguire et al., 2010).'
","AliEtAl2017ERPSystemImplem",682,"","","","x"
"Champion","champion","
`Additional critical success factors are the selection of a project champion,
who has the power and reputation to promote the importance of the project
(Sumner, 2000), and cultural change management, also because major ERP vendors
are located in North America and Western Europe, and thus functionalities and
processes embody a western-centered perspective.'
","BarthEtAl2019CriticSuccesFactor",658,"","","","x"
"Champion","champion","
`Further success factors for ERP implementation projects, such as the selection
of a project champion, the building of a business case or the appropriate
management of legacy systems were rated as not very significant for upgrade
projects by the interviewees.'
","BarthEtAl2019CriticSuccesFactor",668,"","","","x"
"Champion","champion","
`Zhang et al. (2005) described five major parts of project management as having
a formal implementation plan, a realistic time frame, periodic project status
meetings, an effective project leader who is also a champion and project team
members who are stakeholders.'
","BasogluEtAl2007OrganiAdoptiEnterp",91,"","","","x"
"Champion","champion","
`This introduces the importance of support mechanisms that include not only
technical solutions such as superior hardware and software operational features,
but also software support that is championed by supervisors who behave as role
models.'
","Chan2013AustraQuantiSurvey",104,"","","","x"
"Champion","champion","
`Loh and Koh [35] presented a framework of critical success factors in small and
medium sized enterprises (SMEs), concluding that the most important factors are:
project champion, project management, business plan and vision, and top
management support [35].'
","ChatzoglouEtAl2016AnteceOutcomERP",1254,"","","","x"
"Champion","champion","
`This CSF is related to the need for the project manager/champion to nurture and
maintain a high level of employee morale and motivation during the project
(Trimmer et al., 2002; Willcocks and Stykes, 2000; Bingi et al., 1999).'
","FinneyEtAl2007ERPImplemCompil",337,"","","","x"
"Champion","champion","
`Frequency analysis of CSFs in literature CSF category Top management commitment
and support Change management BPR and software configuration Training and job
redesign Project team: the best and brightest Implementation strategy and
timeframe Consultant selection and relationship Visioning and planning Balanced
team Project champion Communication plan IT infrastructure Managing cultural
change Post-implementation evaluation Selection of ERP Team morale and
motivation Vanilla ERP Project management Troubleshooting/crises management
Legacy system consideration Data conversion and integrity System testing Client
consultation Project cost planning and management Build a business case
Empowered decision makers Number of instances cited in literature 25 25 23 23 21
17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often
focused on only a specific aspect of the implementation process or a specific
CSF.'
","FinneyEtAl2007ERPImplemCompil",340,"","","","x"
"Champion","champion","
`Among the more important factors are top management support and involvement
(Duchessi et al., 1989) the need for a project champion (Ehie and Madsen, 2005),

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user training (Stefanou and Revanoglou, 2006), technological competence, process
delineation, project planning, change management and PM (Krumbholz and Maiden,
2001).'
","GargEtAl2014CriticSuccesFactor",404,"","","","x"
"Champion","champion","
`The most important factors are top management support and involvement, the need
for project champion user training, technological competence, process
delineation, project planning, change management and PM (Umble et al., 2003).'
","GargEtAl2014CriticSuccesFactor",404,"","","","x"
"Champion","champion","
`Project champion is one of the most important success factors in the
implementation of ERP systems.'
","GargEtAl2014CriticSuccesFactor",405,"","","","x"
"Champion","champion","
`Project champions should own the role of change champion for the life of the
project and understand the technology as well as the business and organizational
context (Remus, 2006).'
","GargEtAl2014CriticSuccesFactor",405,"","","","x"
"Champion","champion","
`F4 Presence/Existence of a Champion Somers & Nelson, 2001; Willcocks &
Sykes,2000; Browen et al.,2007; Parr & Shanks.,2000; Upadhyay & Dan,2008; Nah et
al.,2001; Nah et al.,2003; Ngai et al.,2008; Sumner,1999; Yeoh et al.,2008;
Lai,2006; Dawson & Owens, 2008.'
","KhattakEtAl2013InvestCriticSucces",47,"","","","x"
"Champion","champion","
`P4: It states that presence or existence of a champion in implementation of an
ERP project leads to successful implementation of ERP project which is partially
supported because in only four of the enterprises (i.e. Cases 2, 3, 4 & 12)
studied in the current research, a champion was emerged and/or existed in a
significant role while in rest of the cases there wasn't any champion and
despite that the implementation went successful.'
","KhattakEtAl2013InvestCriticSucces",59,"","","","x"
"Champion","champion","
`The unsuccessful cases also had no presence of any champion at all.'
","KhattakEtAl2013InvestCriticSucces",59,"","","","x"
"Champion","champion","
`Therefore, this infers that the presence of a champion in a significant role
may be useful for providing guidance & motivation on the project but it cannot
essentially guarantee the ERP project implementation success.'
","KhattakEtAl2013InvestCriticSucces",59,"","","","x"
"Champion","champion","
`We suggested that in Chinese context presence of such a champion would be seen
as a challenge to the authority and position of the top management, but in
Pakistani context, the champion is often a subordinate.'
","KhattakEtAl2013InvestCriticSucces",66,"","","","x"
"Champion","champion","
`The research concludes that: (1) Quality (adequacy) and quantity of training
and education of personnel/users, role and effectiveness of management in
reducing the users' resistance, use of steering committee for control purpose,
top management support or involvement, clearly specified goals/objectives/scope
regarding ERP system, ease of system's use and users' acceptance, vendor's
support, project management, effective communication among the organizational
members and a balanced team for ERP implementation are practically considered by
the successful enterprises in China while planning and going for the
implementation of the ERP system and are thus critical for the success of ERP
systems implementation projects, ignoring of which may cause implementation
failure in the Chinese organizations; (2) Some of the factors deemed imperative
for ERP systems implementation success in the literature like; selection of a
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right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role of consultant, change management strategy and programs, competency in use of IT and IT infrastructure, business...'
","KhattakEtAl2013InvestCriticSucces",68,"","","","x"
"Champion","champion","
`According to the literature, the most studied factors were: Top Management Support, Effective Communication, Training, and Education, Business plan and vision, Project Management, BPR management, Change Management, Project team Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation, Technological Infrastructure, Legacy systems consideration.'
","MahrazEtAl2020CompilAnalysCritic",112,"","","","x"
"Champion","champion","
`The findings of our study reveal that `appropriate business and IT legacy systems', `business plan/vision/goals/justification', `business process reengineering', `change management culture and programme', `communication', `ERP teamwork and composition', `monitoring and evaluation of performance', `project champion', `project management', `software/system development, testing and troubleshooting', `top management support', `data management', `ERP strategy and implementation methodology', `ERP vendor', `organizational characteristics', `fit between ERP and business/process', `national culture' and `country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.'
","NgaiEtAl2008ExaminCriticSucces",548,"","","","x"
"Champion","champion","
`They showed that top management support, project champion, ERP teamwork and composition, project management, change management programme and culture were the most critical to the successful implementation of EPR.'
","NgaiEtAl2008ExaminCriticSucces",549,"","","","x"
"Champion","champion","
`Project champion The presence of a project champion has facilitated many successful projects [54].'
","NgaiEtAl2008ExaminCriticSucces",555,"","","","x"
"Champion","champion","
`Project champions are not only important for the implementation of many systems such as IS, but also play a critical role in the implementation of ERP and in handling organizational change.'
","NgaiEtAl2008ExaminCriticSucces",555,"","","","x"
"Champion","champion","
`The project champion should be a high-level executive sponsor who has the power to `champion' the ERP project throughout the organization [73].'
","NgaiEtAl2008ExaminCriticSucces",555,"","","","x"
"Champion","champion","
`Project team: consultant, leadership and champion The ERP team should consist of the best people in the organization.'
","OsmanEtAl2019ERPCriticSucces",37,"","","","x"
"Champion","champion","
`The factors were top management support, external expertise, balanced project team, data accuracy, clear goals, project management, change management, education and training, presence of a champion, minimal customisation, and using the best people full-time.'
","Rabaai2009IdentiCriticSucces",6,"","","","x"
"Champion","champion","
`Eleven critical factors were identified, such as ERP teamwork and composition, change management program and culture, top management support, business plan and vision, business process reengineering (BPR) and minimum customisation, effective communications, project management, software development, testing and troubleshooting, monitoring and evaluating performance, project champion, and

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appropriate business and IT legacy systems.'
","Rabaai2009IdentiCriticSucces",6,"","","","x"
"Champion","champion","
`The top five were top management support, project team competence, project
champion, inter-departmental cooperation, and clear goals and expectations.'
","Rabaai2009IdentiCriticSucces",6,"","","","x"
"Champion","champion","
`Based on the work by Markus and Tanis (2000), Nah and Delgado organised these
factors into seven main categories: (1) Business plan and vision; (2) Change
management; (3) Communication; (4) ERP team composition, skills, and
compensation; (5) Project management; (6) Top management support and
championship; and (7) System analysis, selection, and technical implementation.'
","Rabaai2009IdentiCriticSucces",6,"","","","x"
"Champion","champion","
`QUT believes this approach to engaging consultants allows QUT to maintain
control, ownership, and championship of the project.'
","RabaaiEtAl2009ERPSystemHigher",465,"","","","x"
"Champion","champion","
`The critical success factors consistently identified in the literature include
top management support, the presence of a champion, good communication with all
stakeholders, effective project management, reengineering of business processes,
an understanding of corporate cultural change, and the use of business analysts
on the project team.'
","RabaaiEtAl2015CulturPerspeon",88,"","","","x"
"Champion","champion","
`The specific items on business plan, goal and vision; on technical aspects; on
team composition and skills; on top management championing and support; on
project communication factors and on change management aspects formed the next
block of items.'
","RabaaiEtAl2015CulturPerspeon",94,"","","","x"
"Champion","champion","
`The associate director of IT felt it was important for QUT to maintain
championship and ownership, and to supplement as necessary with specialist
labour or expertise, and noted QUTs approach differed from other universities,
some of which have been involved in complex arrangements ending in litigation.'
","RabaaiEtAl2016SuccesFactorEnterp",56,"","","","x"
"Champion","champion","
`Item Description 1 top management support 25 application project costs 2
effective communication 26 interdepartmental cooperation 3 interdepartmental
communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor
relations 5 business plan-vision 29 ongoing vendor support 6 change management
30 use of vendor's development tools 7 education on new business process 31
organizational characteristics 8 user training& education 32 employee / team
morale-motivation 9 user acceptance 33 leadership of the project team 10
managing cultural change 34 project team competence- composition 11 business
process reengineering 35 ERP team work 12 customization 36 steering committee 13
minimal customization 37 empowered decision makers 14 software configuration 38
use of consultants 15 data accuracy 39 obtain business analysts 16 data
analysis- conversion 40 project champion 17 software development testing &
troubleshooting 41 appropriate business-legacy systems 18 implementation
strategies 42 data integration 19 ERP package selection 43 scope & vision based
performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of
performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","","","x"
"Champion","champion","
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation
strategies (23) Management of expectations (24) Project management (32) Employee
/ team morale & motivation (33) Leadership of the project team (34) Project team
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competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"","","","x"
"Champion","champion","
`Third factor is also being supported by two other sub-factors; centralization and project champion.'
","SaygiliEtAl2017EndUsersPercep",68,"","","","x"
"Champion","champion","
`Similarly, project champion can be defined as one of the formal rituals and celebrations (Schein, 2004) in which a group celebrates key events that reflect important values or important passages by members such as completion of important projects and milestones.'
","SaygiliEtAl2017EndUsersPercep",68,"","","","x"
"Champion","champion","
`Have a project champion who performs the crucial functions like leadership, facilitation, and marketing the project to the users.'
","SaygiliEtAl2017EndUsersPercep",75,"","","","x"
"Champion","champion","
`Therefore, it is crucial to appoint a senior project champion (e.g., CEO) to take on the leadership role of the ERP implementation, whose job it is to bring respected and active contributing top management promoters into the system selection decision process rather than relying on the vendor's or consultant's efforts to overcome resistance.'
","ShaulEtAl2013CriticSuccesFactor",19,"","","","x"
"Collaboration","collaboration","
`Implementation of ERP involves the collaboration of technical and business professionals with end users.'
","AnjumEtAl2015FactorManipuERP",630,"x","x","x","x"
"Collaboration","collaboration","
`Additionally, ERP implementation team should consist of representatives from all functional units of the organisation, from technical experts to senior executives, because the effort and collaboration of technical and business experts and the system's end-users are essential to the success of ERP implementation (e.g.'
","Rabaai2009IdentiCriticSucces",9,"x","x","x","x"
"Collaboration","collaboration","
`Additionally, ERP implementation team should consist of representatives from all functional units of the organisation, from technical experts to senior executives, because the effort and collaboration of technical and business experts and the system's end-users are essential to the success of ERP implementation (e.g.'
","RabaaiEtAl2016SuccesFactorEnterp",54,"x","x","x","x"
"Communication","communication","
`The authors find that top management support, good project management teams, and good communications are the top three most important critical successful factors during implementation.'
","AliEtAl2017ERPSystemImplem",666,"x","x","x","x"
"Communication","communication","
`CSFs for successful ERP implementation are identified as top management support, presence of a champion, good communication with stakeholders, effective

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project planning, business process re-engineering (BPR), and using a business
analyst on the project team (Bancroft et al., 1998; Bingi et al., 1999).'
","AliEtAl2017ERPSystemImplem",674,"x","x","x","x"
"Communication","communication","
`They rate CSFs by a degree of importance during ERP implementation as follows:
(1) top management support; (2) project team competence; (3) inter-departmental
cooperation; (4) clear goals and objectives; (5) project management; (6) inter-
departmental communication; (7) management of expectation; (8) project champion;
(9) vendors' support; (10) careful package selection; (11) data analysis and
conversion; (12) dedicated resources; (13) use of steering committee; (14) user
training on software; (15) education on new business processes; (16) BPR; (17)
minimal customisation; (18) architecture choices; (19) change management; (20)
partnership with vendors; (21) use of vendors' tool; and (22) use of
consultant.'
","AliEtAl2017ERPSystemImplem",674,"x","x","x","x"
"Communication","communication","
`Important CSFs identified are: ERP team work and composition, top management
support, business plan and vision, effective communication, project management,
project champion, appropriate business and legacy systems, change management
programmes, culture, BPR, minimum customisation, software development, testing,
trouble shooting, monitoring, and evaluation of performance.'
","AliEtAl2017ERPSystemImplem",675,"x","x","x","x"
"Communication","communication","
`The factors in the order of ERP system importance are: implementation in LEs ●
lack of top management commitment; ● ineffective communication; ● insufficient
training; ● lack of user support; ● poor project management; ● relying on legacy
systems; ● inter-departmental conflicts; ● composition of project team; ●
failure in redesigning business processes; and ● lack of clarity about required
changes.'
","AliEtAl2017ERPSystemImplem",681,"x","x","x","x"
"Communication","communication","
`The top three most important CSFs to be considered at particular stages of the
implementation process are top management support, good project teams, and good
communications.'
","AliEtAl2017ERPSystemImplem",682,"x","x","x","x"
"Communication","communication","
`The most common causes of ERP implementation failures are a combination of poor
planning and high software customisation (Scheer and Habbermann, 2000), lack of
top management commitment; ineffective communication; insufficient training;
lack of user support, poor project management, relying on legacy systems, inter-
departmental conflicts, poor composition of project teams, failure in
redesigning business processes and, lack of clarity about required changes.'
","AliEtAl2017ERPSystemImplem",682,"x","x","x","x"
"Communication","communication","
`The study founds a significant association of technological, strategic, project
management, people, top management support and communication factor with ERP
implementation.'
","AnjumEtAl2015FactorManipuERP",628,"x","x","x","x"
"Communication","communication","
`Two researchers conducted a research study on the success issues of ERP which
identified ten successive issues through investigate ten selective articles
which are: effective decision making, Business Plan and vision, project
management, effective communication, testing and troubleshooting, appropriate
business and legacy system, ERP teamwork and composition, top management support
and software development (Nah and Lau, 2001).'
","AnjumEtAl2015FactorManipuERP",628,"x","x","x","x"
"Communication","communication","
`Woo (2007) conducted a study through interviewing professionals concerned with
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the execution of ERP foremost Chinese ventures, the researchers acknowledged six
vital success issues that contain: project team, process management, training
and effective communication, commitment form top management, proper project
management and proper education and training (Woo, 2007).'
","AnjumEtAl2015FactorManipuERP",629,"x","x","x","x"
"Communication","communication","
`Efficient enterprise communication is significantly to ERP implementation
(Falkowski et al., 1998).'
","AnjumEtAl2015FactorManipuERP",630,"x","x","x","x"
"Communication","communication","
`Muscatello and Chen (2008) stated that appropriate communication strategies
should be set up to keep senior management knowledgeable on the matter of ERP
project impact, risks, progress and challenges.'
","AnjumEtAl2015FactorManipuERP",630,"x","x","x","x"
"Communication","communication","
`The research study of Nah and Delgado (2006) suggests that early, continues and
consistent communication, including an overview of the ERPS and visualization on
how the business will modify have significant implications for the successful
ERPS implementation project.'
","AnjumEtAl2015FactorManipuERP",631,"x","x","x","x"
"Communication","communication","
`Somers and Nelson (2004) stated that one of such benefits of communication
among the stakeholders of various functions is that, it assists ERPS adopting
firm to reduce users' resistance which is very important in initiating such
project (Esteves-Sousa and PastorCollado, 2000).'
","AnjumEtAl2015FactorManipuERP",631,"x","x","x","x"
"Communication","communication","
`Communication should include both internal and external.'
","AnjumEtAl2015FactorManipuERP",631,"x","x","x","x"
"Communication","communication","
`Internal communication includes communication among ERPS project member,
whereas external communication includes the entire organization.'
","AnjumEtAl2015FactorManipuERP",631,"x","x","x","x"
"Communication","communication","
`For better communication, communication plan among the member is critical since
communication plan warrants that open communication is happening in the entire
organization and also with the suppliers and customers (Kumar et al., 2003).'
","AnjumEtAl2015FactorManipuERP",631,"x","x","x","x"
"Communication","communication","
`The study of EstevesSousa and Pastor-Collado (2000) acknowledged that not only
internal communication between ERPS project team individuals, but also external
communication among the whole corporation are tremendously essential.'
","AnjumEtAl2015FactorManipuERP",631,"x","x","x","x"
"Communication","communication","
`Another requisite factor for successful ERPS is organization-wide communication
among employees.'
","AnjumEtAl2015FactorManipuERP",631,"x","x","x","x"
"Communication","communication","
`Such organization-wide communication transverse meant to support the various
stages of ERPS implementation.'
","AnjumEtAl2015FactorManipuERP",631,"x","x","x","x"
"Communication","communication","
`Communication is one of difficult and most challenging steps in the ERPS
execution project.'
","AnjumEtAl2015FactorManipuERP",631,"x","x","x","x"
"Communication","communication","
`The communication must be carried out through ERPS navigation board meetings
plus standard position exposure.'
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","AnjumEtAl2015FactorManipuERP",632,"x","x","x","x"
"Communication","communication","
`Holland and Light (1999) recommended that utilizing communication apparatus,
for example information sheet, monthly press release otherwise weekly meetings
in order to maintain users' well-versed regarding ERPS execution project
advancement.'
","AnjumEtAl2015FactorManipuERP",632,"x","x","x","x"
"Communication","communication","
`Furthermore, top management commitment and communication, both have positive
and constructive connection with the implementation of ERP systems.'
","AnjumEtAl2015FactorManipuERP",632,"x","x","x","x"
"Communication","communication","
`Studies have empirical evidence that technological, strategic, project
management, people, top management support and communication positively affect
the success of implementing ERP.'
","AnjumEtAl2015FactorManipuERP",633,"x","x","x","x"
"Communication","communication","
`In order to succeed, a culture with common goals, shared values and a strong
corporate identity open to change, is essential (Nah, Lau and Kuang, 2001), as
well as communication of the benefits and the need for an ERP system (Finney and
Corbett, 2007).'
","BarthEtAl2019CriticSuccesFactor",658,"x","x","x","x"
"Communication","communication","
`Additionally, good communication of the project's progress to the rest of the
organization is an easy way to promote and advertise the project and project
team (Holland and Light, 1999).'
","BarthEtAl2019CriticSuccesFactor",659,"x","x","x","x"
"Communication","communication","
`Nah, Faja and Cata (2001) add communication with external partners and user
support as key points based on an empirical study.'
","BarthEtAl2019CriticSuccesFactor",659,"x","x","x","x"
"Communication","communication","
`(6) Communication: one major objective has to be the introduction of a
communication culture, which enables effective coordination between various
departments and their interests.'
","BarthEtAl2019CriticSuccesFactor",666,"x","x","x","x"
"Communication","communication","
`Additionally, there is the need for professional communication within the
project.'
","BarthEtAl2019CriticSuccesFactor",666,"x","x","x","x"
"Communication","communication","
`Even though team members have different opinions on a topic, communication and
discussion must take place on a professional level and personal differences must
be left behind (I).'
","BarthEtAl2019CriticSuccesFactor",666,"x","x","x","x"
"Communication","communication","
`Furthermore, communication with end users is important, as they can offer
crucial process knowledge and indicate potential problems from their point of
view (L).'
","BarthEtAl2019CriticSuccesFactor",666,"x","x","x","x"
"Communication","communication","
`Another important factor within the communication with end users is the
management of expectations.'
","BarthEtAl2019CriticSuccesFactor",666,"x","x","x","x"
"Communication","communication","
`Furthermore, also reporting is a part of communication, which should be based
on a detailed plan (I).'
","BarthEtAl2019CriticSuccesFactor",666,"x","x","x","x"

"Communication","communication","
`Many factors, such as project management, team composition, communication,
system testing and external support, are crucial for ERP implementation projects
as well as for upgrade projects.'
","BarthEtAl2019CriticSuccesFactor",670,"x","x","x","x"
"Communication","communication","
`In another study, Gyampah and Salam (2004) claimed that training, shared
communication and shared beliefs in the benefits of the ERP system has a direct
effect on users' perception about ERP system.'
","BasogluEtAl2007OrganiAdoptiEnterp",83,"x","x","x","x"
"Communication","communication","
`The results of their study proved that training and project communication
affect user perceptions through the shared belief in the benefits of ERP
system.'
","BasogluEtAl2007OrganiAdoptiEnterp",83,"x","x","x","x"
"Communication","communication","
`Additionally, critical success factors of ERP projects like customization, BPR,
top management support, training and communication were grouped under these
three actors and also project management for testing their effect on
organizational adoption, too.'
","BasogluEtAl2007OrganiAdoptiEnterp",89,"x","x","x","x"
"Communication","communication","
`Obviously, having such users is not enough, because they should be provided
with support like training, information sharing, and effective communication and
help desk activities.'
","BasogluEtAl2007OrganiAdoptiEnterp",91,"x","x","x","x"
"Communication","communication","
`Unless training, information sharing, effective communication and help desk
activities are provided, people cannot have a better understanding of how their
jobs are related to other functional areas within the company and also they
cannot know to operate the new system.'
","BasogluEtAl2007OrganiAdoptiEnterp",91,"x","x","x","x"
"Communication","communication","
`It was found out from the literature that Gyampah and Salam (2004) and
Kerimoglu and Basoglu (2005) defined project management's communication
facilities' as a subordinate determinant of use.'
","BasogluEtAl2007OrganiAdoptiEnterp",92,"x","x","x","x"
"Communication","communication","
`Lack of management support, poor organizational culture, communication
problems, financial management problems, lack of clarity on scope, project
management problems, poor project team, ERP software misfit, poor solution
implementer performance, poor quality of testing, outdated it infrastructure,
lack of training, highly customized ERP, poor process design, lack of user
involvement, resistance to change, unrealistic expectations are the main failure
factors that need to be analyzed in detail.'
","CoşkunEtAl2022ERPFailurSystem",3,"x","x","x","x"
"Communication","communication","
`For example, Tsai [44] defines it as ``Reach'' for the project team to interact
with end users to understand the requirements, while Malaurent [45] defines it
as ``communication matters''.'
","CoşkunEtAl2022ERPFailurSystem",10,"x","x","x","x"
"Communication","communication","
`For example, according to Sahran [46], ``Lack of internal communication'' is
seen as a subset of ``Change Management''.'
","CoşkunEtAl2022ERPFailurSystem",10,"x","x","x","x"
"Communication","communication","
`It should not be confused that many factors such as ``budget'',
``communication'', and ``project team'' are not examined in the ``Project

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Management Problems'' category since they are examined in separate categories
because many articles analyzed in this study show that project management is
handled as project coordination.'
","CoşkunEtAl2022ERPFailurSystem",13,"x","x","x","x"
"Communication","communication","
`As expected, education, organizational culture, and communication problems come
to the fore in large-scale companies, while financial problems come to the fore
in small-scale companies.'
","CoşkunEtAl2022ERPFailurSystem",16,"x","x","x","x"
"Communication","communication","
`ERP projects fail as communication becomes inefficient.'
","CoşkunEtAl2022ERPFailurSystem",16,"x","x","x","x"
"Communication","communication","
`For example, resistance to change and financial problems may be encountered
more commonly in small-scale organizations, whereas communication is more
critical in large-scale companies.'
","CoşkunEtAl2022ERPFailurSystem",19,"x","x","x","x"
"Communication","communication","
`Communication among various functions/levels (Mandal and Gunasekaran, 2003) and
specifically between business and IT personnel (Grant, 2003) is another
identified CSF.'
","FinneyEtAl2007ERPImplemCompil",337,"x","x","x","x"
"Communication","communication","
`This requires a communication plan (Kumar et al., 2002) to ensure that open
communication occurs within the entire organization, including the shop-floor
employees (Yusuf et al., 2004), as well as with suppliers and customers (Mabert
et al., 2003).'
","FinneyEtAl2007ERPImplemCompil",337,"x","x","x","x"
"Communication","communication","
`Al-Mashari et al. (2003) and Al Mudimigh et al. (2001) mention the need for
communication and consultation with various key stakeholders, but in particular
with the client.'
","FinneyEtAl2007ERPImplemCompil",338,"x","x","x","x"
"Communication","communication","
`Frequency analysis of CSFs in literature CSF category Top management commitment
and support Change management BPR and software configuration Training and job
redesign Project team: the best and brightest Implementation strategy and
timeframe Consultant selection and relationship Visioning and planning Balanced
team Project champion Communication plan IT infrastructure Managing cultural
change Post-implementation evaluation Selection of ERP Team morale and
motivation Vanilla ERP Project management Troubleshooting/crises management
Legacy system consideration Data conversion and integrity System testing Client
consultation Project cost planning and management Build a business case
Empowered decision makers Number of instances cited in literature 25 25 23 23 21
17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often
focused on only a specific aspect of the implementation process or a specific
CSF.'
","FinneyEtAl2007ERPImplemCompil",340,"","","","x"
"Communication","communication","
`Some of their ideas include: support and training, increased communication,
user guidelines, demonstration of benefits.'
","FinneyEtAl2007ERPImplemCompil",342,"x","x","x","x"
"Communication","communication","
`These factors include, but not limited to, poor consultant effectiveness, ERP
software misfit, unrealistic expectations from top management concerning the ERP
systems, over-reliance on heavy customization, poor quality of Business Process
Reengineering (BPR), high turnover rate of project team members, poor IT
Infrastructure, functionality problems with the system, unclear concept of the
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nature and use of the ERP system from the users perspective, too tight project schedule, lack of formal communication, part-time dedication, etc.'
","GargEtAl2013EmpiriStudyon",498,"x","x","x","x"
"Communication","communication","
`Consultants who are not able to demonstrate a mastery of professional communication skills, good language capability, industrial knowledge, and business analytical skills, are not able to provide expertise concerning project planning, ERP systems and BPR during ERP implementation and hence cannot act as change agents and fill the knowledge gaps (Ngai et al., 2008; Stebel, 1992; Ganesh and Mehta, 2010; Nah and Lau, 2001) (for example, communicating with project team members and users for acquiring business requirements, conducting BPR and delivering professional training).'
","GargEtAl2013EmpiriStudyon",499,"x","x","x","x"
"Communication","communication","
`A formal management process is also needed to track and monitor the vendor/consultant's activities and communications.'
","GargEtAl2014CriticSuccesFactor",416,"x","x","x","x"
"Communication","communication","
`Effective enterprise communication is critical to ERP implementation (Falkowski et al., 1998).'
","GargEtAl2014FactorInflueERP",432,"x","x","x","x"
"Communication","communication","
`Management of communication, education and expectations are critical throughout the organization (Wee, 2000).'
","GargEtAl2014FactorInflueERP",434,"x","x","x","x"
"Communication","communication","
`Communication includes the formal promotion of project teams and the advertisement of project progress to the rest of the organization (Holland et al., 1999).'
","GargEtAl2014FactorInflueERP",434,"x","x","x","x"
"Communication","communication","
`Enterprise wide effective communication is one of the most influential items for ERP implementation success.'
","GargEtAl2014FactorInflueERP",439,"x","x","x","x"
"Communication","communication","
`So it is recommended for mangers of retail organization to have a strong and effective communication throughout the various stages of the ERP implementation.'
","GargEtAl2014FactorInflueERP",439,"x","x","x","x"
"Communication","communication","
`Open and honest communication across the organization is of paramount importance to satisfy the information needs of users, and to prevent the circulation of unfounded rumors.'
","GargEtAl2014FactorInflueERP",439,"x","x","x","x"
"Communication","communication","
`The success of ERP implementation depends on effective project communication.'
","GargEtAl2014FactorInflueERP",441,"x","x","x","x"
"Communication","communication","
`It is recommended that communication within the project team should be done in timely and effectively manner so that there should not be any communication gap within the project team.'
","GargEtAl2014FactorInflueERP",441,"","x","",""
"Communication","communication","
`Effective Enterprise communication is critical to ERP implementation (Falkowski et al., 1998).'
","GargEtAl2015FactorAffectERP",1318,"x","x","x","x"
"Communication","communication","
`Muscatello and Chen (2008) argued that suitable communication plans should be

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set ERP up to keep senior management informed on the subject of ERP project
impact, implementation challenges, risks and progress.'
","GargEtAl2015FactorAffectERP",1319,"","","","x"
"Communication","communication","
`Management of communication, education and expectations are critical throughout
the organization (Wee, 2000).'
","GargEtAl2015FactorAffectERP",1320,"x","x","x","x"
"Communication","communication","
`(1) The ``Organizational'' factor in this study is defined by business plan and
vision, top management support, business process reengineering, ERP product
selection, selection of implementation partner/consultants and enterprise wide
communication plan items which may affect the success of ERP implementation in
Indian retail sector.'
","GargEtAl2015FactorAffectERP",1327,"x","x","x","x"
"Communication","communication","
`(4) The Project Management factor in this study is defined by team composition,
project team competence, scope management, expectation management, communication
within project team and budget control items which may affect the success of ERP
implementation in Indian retail sector.'
","GargEtAl2015FactorAffectERP",1332,"x","x","x","x"
"Communication","communication","
`The success of ERP implementation depends on effective project communication.'
","GargEtAl2015FactorAffectERP",1333,"x","x","x","x"
"Communication","communication","
`Drawing from the literature, we found security, project management, and
communication are the top three widely cited CSFs during implementation.'
","HuangEtAl2021CriticSuccesFactor",4683,"x","x","x","x"
"Communication","communication","
`The most widely cited CSFs were found to be: security, project management,
communication, compliance, network and the reaction of organization.'
","HuangEtAl2021CriticSuccesFactor",4685,"x","x","x","x"
"Communication","communication","
`Communication represents the third most widely cited CSF that is vital to
successful implementation [15, 19, 22, 23, 25].'
","HuangEtAl2021CriticSuccesFactor",4685,"x","x","x","x"
"Communication","communication","
`Effective communication can enrich employees' knowledge and can help employees
learn from each other.'
","HuangEtAl2021CriticSuccesFactor",4685,"x","x","x","x"
"Communication","communication","
`Transparent and precise communication is required to reduce ambiguity in the
understanding of employees during the implementation [23].'
","HuangEtAl2021CriticSuccesFactor",4685,"x","x","x","x"
"Communication","communication","
`Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) ●
Communication within the company ● Organization resistance ● Project budget ●
Project management ● Implementation strategy ● Strategic goals and objectives ●
Business process reengineering ● organizational culture ● knowledge base of the
company ● Project planning and control ● Facilitating conditions ● Organization
size ● The vision of the organization ● Readiness of organizations ● Clarity of
potential cost ● User involvement ● Selection of vendor/consult ant ● Project
team ● Top management support ● Training of user ● Trust on vendor ● Performance
expectancy ● Effort expectancy ● Social influence ● Age ● Gender ● Highest
degree attained ● Selection of ERP package ● IT infrastructure ● Data integrity
and system testing.'
","HuangEtAl2021CriticSuccesFactor",4686,"x","x","x","x"
"Communication","communication","
`Discussion From the systematic literature review conducted into Cloud ERP
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implementation, we found that the top five most widely cited CSFs for the successful implementation of Cloud ERP are: security, project management, communication, compliance, and network.'
","HuangEtAl2021CriticSuccesFactor",4689,"x","x","x","x"
"Communication","communication","
`CSFs, such as communication, project management, strategic goals and objectives and top management support are important for both forms of ERP (i.e., on-premise, cloud-based).'
","HuangEtAl2021CriticSuccesFactor",4689,"x","x","x","x"
"Communication","communication","
`F18 Effective communication Esteves et al., 2003; Woo, 2007; Almahdi et al., 2008; Nah et al., 2003; Jafari et al., 2006; Bancroft et al., 1998; Amoako & Salam, 2004; Hanafizadeh et al., 2010; Lai,2006; Muscatello & Chen, 2008; Dawson & Owens, 2008.'
","KhattakEtAl2013InvestCriticSucces",48,"x","x","x","x"
"Communication","communication","
`The results of the survey revealed that level of communication in the enterprises, where the implementation went successful, was medium on average in a sense that the system users and other concerned managers/employees were not involved in the selection/adoption of the ERP system prior going for the ERP implementation, while in others because the system users as well as concerned managers were got involved in the same therefore, the communication level was observed as high over there.'
","KhattakEtAl2013InvestCriticSucces",63,"x","x","x","x"
"Communication","communication","
`However, the level of communication was low in case of unsuccessful firms and closed coordination among the management and employees for effective execution of various activities and operations was not used to be encouraged.'
","KhattakEtAl2013InvestCriticSucces",63,"x","x","x","x"
"Communication","communication","
`This shows that an effective and clear communication among the organizational members is necessary for ERP project implementation success.'
","KhattakEtAl2013InvestCriticSucces",63,"x","x","x","x"
"Communication","communication","
`We contend that the mechanism of communication should be such that the information should be shared easily, promptly, correctly and on time among the employees as well as among the business units.'
","KhattakEtAl2013InvestCriticSucces",65,"x","x","x","x"
"Communication","communication","
`The information sharing through effective communication should start at early stage in the ERP implementation project and the reasons for its implementation may be in consistency with the overall organization goals and objectives.'
","KhattakEtAl2013InvestCriticSucces",65,"x","x","x","x"
"Communication","communication","
`The research concludes that: (1) Quality (adequacy) and quantity of training and education of personnel/users, role and effectiveness of management in reducing the users' resistance, use of steering committee for control purpose, top management support or involvement, clearly specified goals/objectives/scope regarding ERP system, ease of system's use and users' acceptance, vendor's support, project management, effective communication among the organizational members and a balanced team for ERP implementation are practically considered by the successful enterprises in China while planning and going for the implementation of the ERP system and are thus critical for the success of ERP systems implementation projects, ignoring of which may cause implementation failure in the Chinese organizations; (2) Some of the factors deemed imperative for ERP systems implementation success in the literature like; selection of a right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role

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of consultant, change management strategy and programs, competency in use of IT
and IT infrastructure, business...'
","KhattakEtAl2013InvestCriticSucces",68,"x","x","x","x"
"Communication","communication","
`According to the literature, the most studied factors were: Top Management
Support, Effective Communication, Training, and Education, Business plan and
vision, Project Management, BPR management, Change Management, Project team
Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation,
Technological Infrastructure, Legacy systems consideration.'
","MahrazEtAl2020CompilAnalysCritic",112,"x","x","x","x"
"Communication","communication","
`The principal function of the top management is the establishment of clear
objectives and goals for the ERP project, which allows to move all parties in
the same direction; Effective communication: The effective communication in the
organization must occur between the various functions and levels of the
organization, between the institution's departments, and specifically between
the business staff and the IT staff.'
","MahrazEtAl2020CompilAnalysCritic",112,"x","x","x","x"
"Communication","communication","
`In the ERP system, implementation (Campos Fernandes Leandro et al., 2017; Nah
et al.,2001; Ngai et al., 2008) considers communication to be a critical success
factor.'
","MahrazEtAl2020CompilAnalysCritic",112,"x","x","x","x"
"Communication","communication","
`It includes communication of expectations at all company levels, formal
presentations by the project teams and the announcement of the project results
within the company and announcement of the project scope, objectives and
activities before the project onset (Doom et al., 2010); Training and Education:
Training and Education are considered actually as one of the preconditions of
building a successful ERP system.'
","MahrazEtAl2020CompilAnalysCritic",112,"x","x","x","x"
"Communication","communication","
`Culture, Communication, and Change Management The deployment of the ERP system
is often seen as a purely technical project, and the organizational and human
aspects are sometimes neglected.'
","MahrazEtAl2020CompilAnalysCritic",119,"x","x","x","x"
"Communication","communication","
`The findings of our study reveal that `appropriate business and IT legacy
systems', `business plan/vision/goals/justification', `business process
reengineering', `change management culture and programme', `communication', `ERP
teamwork and composition', `monitoring and evaluation of performance', `project
champion', `project management', `software/system development, testing and
troubleshooting', `top management support', `data management', `ERP strategy and
implementation methodology', `ERP vendor', `organizational characteristics',
`fit between ERP and business/process', `national culture' and `country-related
functional requirement' were the commonly extracted factors across these 10
countries/regions.'
","NgaiEtAl2008ExaminCriticSucces",548,"x","x","x","x"
"Communication","communication","
`Communication Clear and effective communication at all levels of an
organization is necessary before and during the implementation of ERP [8,51].'
","NgaiEtAl2008ExaminCriticSucces",551,"x","x","x","x"
"Communication","communication","
`Communication includes the formal promotion of ERP project teams and
advertisements on the project's progress to the rest of the organization [28].'
","NgaiEtAl2008ExaminCriticSucces",551,"x","x","x","x"
"Communication","communication","
`Amoako-Gyampah and Salam [7] found that effective communication is one of the
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success factors that influence the acceptance of technology in an ERP
implementation environment.'
","NgaiEtAl2008ExaminCriticSucces",551,"x","x","x","x"
"Communication","communication","
`Problems in companies under study include poor communication, lack of support
from department heads, poor training services from vendor, and low user
involvement.'
","NgaiEtAl2008ExaminCriticSucces",559,"x","x","x","x"
"Communication","communication","
`Other problems reported are lack of BPR [87], poor communications, lack of
support from management, limited level of user involvement, poor training from
vendors [90], and weakness in existing IT infrastructure [41].'
","NgaiEtAl2008ExaminCriticSucces",559,"x","x","x","x"
"Communication","communication","
`The organizational-related factors refer to a set of factors fundamental and
commonly known to most ERP-adopting organizations such as `business process
reengineering', `inter-departmental communication' and `top management
support'.'
","NgaiEtAl2008ExaminCriticSucces",560,"x","x","x","x"
"Communication","communication","
`Communication Failing to achieve a fluent and open communication between top
management and the system user is a major cause of ERP implementation failure
[37].'
","OsmanEtAl2019ERPCriticSucces",39,"x","","x","x"
"Communication","communication","
`Indeed, cross functional and interdepartmental coordination is of utmost
importance when implementing an ERP system and having excellent company-wide
communication is vital [30].'
","OsmanEtAl2019ERPCriticSucces",39,"x","x","x","x"
"Communication","communication","
`Continuous communication with the whole company will let the system users know
what is happening, what results are to be expected and if something goes awry,
they are directly informed and involved in solving the problem instead of left
behind in confusion [38].'
","OsmanEtAl2019ERPCriticSucces",39,"x","x","x","x"
"Communication","communication","
`Mahrer (1999) investigated the antecedents and impact of a successful ERP
system implementation in a Swiss university, and concludes that strong
communication and coherence between the departments in the university was the
main success factor.'
","Rabaai2009IdentiCriticSucces",3,"x","x","x","x"
"Communication","communication","
`Eleven critical factors were identified, such as ERP teamwork and composition,
change management program and culture, top management support, business plan and
vision, business process reengineering (BPR) and minimum customisation,
effective communications, project management, software development, testing and
troubleshooting, monitoring and evaluating performance, project champion, and
appropriate business and IT legacy systems.'
","Rabaai2009IdentiCriticSucces",6,"x","x","x","x"
"Communication","communication","
`The factors identified were management and leadership, visioning and planning,
ERP package selection, communication process management, training and education,
project management, legacy systems management, system integration, system
testing, cultural and structural changes, and performance evaluation and
management.'
","Rabaai2009IdentiCriticSucces",6,"x","x","x","x"
"Communication","communication","
`Based on the work by Markus and Tanis (2000), Nah and Delgado organised these

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factors into seven main categories: (1) Business plan and vision; (2) Change
management; (3) Communication; (4) ERP team composition, skills, and
compensation; (5) Project management; (6) Top management support and
championship; and (7) System analysis, selection, and technical implementation.'
",”Rabaai2009IdentiCriticSucces”,6,”x”,”x”,”x”,”x”
"Communication”,”communication”,”
`4.9 Communication Plan Project communication is considered as an essential CSF
for ERP implementations.'
",”Rabaai2009IdentiCriticSucces”,10,”x”,”x”,”x”,”x”
"Communication”,”communication”,”
`While some researchers argued the need for communication among various
functions/levels (Mandal and Gunasekaran, 2003), other specifically argued the
necessity of communication between business and IT personnel (Grant, 2003).'
",”Rabaai2009IdentiCriticSucces”,10,”x”,”x”,”x”,”x”
"Communication”,”communication”,”
`Sumner (1999) debated that the communication plan should not just exist between
senior management and project team members.'
",”Rabaai2009IdentiCriticSucces”,10,”x”,”x”,”x”,”x”
"Communication”,”communication”,”
`The whole organisation should be aware of the project scope, its objectives and
activities as an effective communication plan will have a direct impact on the
success of the change management program (Mendel, 1999).'
",”Rabaai2009IdentiCriticSucces”,10,”x”,”x”,”x”,”x”
"Communication”,”communication”,”
`Communication should take place during regular update meetings, the
distribution of project newsletters or the placement of wall charts in
conspicuous locations (Sumner, 1999).'
",”Rabaai2009IdentiCriticSucces”,10,”x”,”x”,”x”,”x”
"Communication”,”communication”,”
`Further, Mendel (1999) stated that strong communication throughout the various
stages of the implementation process is essential in allowing employees to
understand what is going on in the project, why change is necessary, and how it
will benefit the organisation.'
",”Rabaai2009IdentiCriticSucces”,10,”x”,”x”,”x”,”x”
"Communication”,”communication”,”
`In addition, an effective communication plan will lead to the development of
trust and the exchange of information needed for process changes and the
acceptance of the new technology (Amoako-Gyampah, 2004) Organisation's
stakeholders must be informed of the project goals and the expected benefits of
the ERP project as well as its capabilities and the limitations of the ERP
system (Holland et al. 1999; Al-Mashari et al. 2003; Nah and Delgado, 2006).'
",”Rabaai2009IdentiCriticSucces”,10,”x”,”x”,”x”,”x”
"Communication”,”communication”,”
`For instance, Al-Mashari and Al-Mudimigh (2003) argued that the importance of
an effective communication plan relies on the fact that it could build the
ability of the entire organisation in business process reengineering, and gain
all stakeholders' support and commitment.'
",”Rabaai2009IdentiCriticSucces”,10,”x”,”x”,”x”,”x”
"Communication”,”communication”,”
`Al-Mashari and Al-Mudimigh provided a number of different communication methods
to keep all stakeholders informed of new developments and answering questions
about the project implementation by way of newsletters, focus groups, email and
Web-based archives.'
",”Rabaai2009IdentiCriticSucces”,10,”x”,”x”,”x”,”x”
"Communication”,”communication”,”
`Other critical factors include visioning and planning, consultant selection and
relationship, effective communication plan, ERP system selection, ERP systems
integration, and post-implementation evaluation measures.'
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","Rabaai2009IdentiCriticSucces",11,"x","x","x","x"
"Communication","communication","
`Brief Review of the Current Status of Studies on ERP in the HE Sector Mahrer (1999) investigated the antecedents and impact of a successful ERP system implementation in a Swiss university, and concludes that strong communication and coherence between the departments in the university was the main success factor.'
","RabaaiEtAl2009ERPSystemHigher",458,"x","x","x","x"
"Communication","communication","
`The critical success factors consistently identified in the literature include top management support, the presence of a champion, good communication with all stakeholders, effective project management, reengineering of business processes, an understanding of corporate cultural change, and the use of business analysts on the project team.'
","RabaaiEtAl2015CulturPerspeon",88,"x","x","x","x"
"Communication","communication","
`Organisational factors traditionally found to affect implementation success, including management support, project communication, change management and team composition do not differentiate the public from the private sector, at least in the case of Jordan.'
","RabaaiEtAl2015CulturPerspeon",97,"x","x","x","x"
"Communication","communication","
`Elsewhere, Mahrer (1999) investigated the antecedents and impact of a successful ERP system implementation in a Swiss university, and concluded that strong communication and coherence between the departments in the university was the main success factor.'
","RabaaiEtAl2016SuccesFactorEnterp",48,"x","x","x","x"
"Communication","communication","
`It is notable that a similar university, RMIT in Melbourne, had a spectacular failure with implementation of its Peoplesoft student administration, This is partly attributable to student admin functionality not being mature ``like finance and HR'', but a second reason for this failure, diagnosed in a Gartner report, was a lack of communication between team members and a failure to adequately consider business processes before implementation.'
","RabaaiEtAl2016SuccesFactorEnterp",56,"x","x","x","x"
"Communication","communication","
`Training resources and activities are also organised through a dedicated communications team which forms part of the Division for Technology, Information and Learning Support which provides central IT services and support.'
","RabaaiEtAl2016SuccesFactorEnterp",56,"x","x","x","x"
"Communication","communication","
`Communication is understood within the IT services team and its project managers, with explicit communication plans implemented and reported against projects.'
","RabaaiEtAl2016SuccesFactorEnterp",56,"x","x","x","x"
"Communication","communication","
`Sampling these reports shows that most projects consider the effectiveness of their communications with stakeholders both for business requirements gathering and appropriate scheduling of status communications.'
","RabaaiEtAl2016SuccesFactorEnterp",56,"x","x","x","x"
"Communication","communication","
`Communication for some projects must go beyond a (monthly) update as transparency is required for academic stakeholders who may not appreciate what a project involves in terms of BPR.'
","RabaaiEtAl2016SuccesFactorEnterp",56,"x","x","x","x"
"Communication","communication","
`ERP failure factors and categories Failure Categories Failure Factors C4: Project Management F1: Conflicts between organization and consultants/ vendor

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C5: Technical F2: High rate of system customization C5: Technical F3: Data
management issues C2: Human Resources F4: Inadequate education and training C2:
Human Resources F5: Inadequate user involvement C2: Human Resources F6:
Ineffective communications system C3: Organizational F7: Internal conflicts
between departments C2: Human Resources F8: Inadequate change management C3:
Organizational F9: Lack of performance measurement system C3: Organizational
F10: Misfit between organization culture and ERP system C3: Organizational F11:
Misfit between organization structure and ERP system C3: Organizational F12:
Misfits between the IT and business strategies C1: Environmental F13:
Environmental pressures C3: Organizational F14: Poor business process
reengineering C1: Environmental F15: Poor consultant C4: Project Management F16:
Poor project management C4: Project Management F17: Poor risk management C3:
Organizational F18: Poor top management support C5: Technical F19: IT Technical
issues C2: Human Resources F20: Language barriers C4:...'
","RavasanEtAl2014FCM-BaDynamiModeli",42,"x","x","x","x"
"Communication","communication","
`Critical success factors identified in Turkish studies Author (s) Critical
Success Factors Baskak& Cetisli (2003) Top management support, business plan and
vision, ERP teamwork, ERP package selection, change management, user training
and education, effective communication, project management, data integration,
software testing and troubleshooting, appropriate legacy systems, monitoring and
evaluation of performance.'
","SaygiliEtAl2017EndUsersPercep",62,"x","x","x","x"
"Communication","communication","
`Item Description 1 top management support 25 application project costs 2
effective communication 26 interdepartmental cooperation 3 interdepartmental
communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor
relations 5 business plan-vision 29 ongoing vendor support 6 change management
30 use of vendor's development tools 7 education on new business process 31
organizational characteristics 8 user training& education 32 employee / team
morale-motivation 9 user acceptance 33 leadership of the project team 10
managing cultural change 34 project team competence- composition 11 business
process reengineering 35 ERP team work 12 customization 36 steering committee 13
minimal customization 37 empowered decision makers 14 software configuration 38
use of consultants 15 data accuracy 39 obtain business analysts 16 data
analysis- conversion 40 project champion 17 software development testing &
troubleshooting 41 appropriate business-legacy systems 18 implementation
strategies 42 data integration 19 ERP package selection 43 scope & vision based
performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of
performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"x","x","x","x"
"Communication","communication","
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation
strategies (23) Management of expectations (24) Project management (32) Employee
/ team morale & motivation (33) Leadership of the project team (34) Project team
competence and composition 2 (14) Software configuration (21) IT infrastructure
(28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor
development tools (38) Use of consultants 3 (40) Project champion (46) National
culture (47) Country related functional requirements (48) Centralization 4 (1)
Top management support (2) Effective communication (3) Interdepartmental
communication (4) Clear goals and objectives (5) Business plan & vision 5 (15)
Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7)
Education on new business processes (8) User training and education (9) User
acceptance (10) Managing cultural change this result maybe, end-users resist
changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"x","x","x","x"
"Communication","communication","
`The results supported the findings of Sarker & Lee (2003) who stated that
```

strong and committed leadership, open and honest communication, and a balanced and empowered implementation team are necessary conditions/precursors for successful ERP application.'
","SaygiliEtAl2017EndUsersPercep",68,"x","x","x","x"
"Communication","communication","
`Other important determinants identified in factor four are, interdepartmental communication and effective communication.'
","SaygiliEtAl2017EndUsersPercep",68,"x","x","x","x"
"Communication","communication","
`The proposed model confirms that following factors play a significant role during implementation of SCMIS-top management support, user involvement, pre-implementation analysis, user training, change management, data accuracy and communication.'
","SethEtAl2015DeveloModelSucces",248,"x","x","x","x"
"Communication","communication","
`Other important organizational factor considered by Ngai et al. (2008), Fui-Hoon Nah et al. (2003) and Sarker and Lee (2003) is communication.'
","SethEtAl2015DeveloModelSucces",250,"x","x","x","x"
"Communication","communication","
`Proper communication in regard to the rationale to the implementation and details of the business process management change with the employees (Mandal & Gunasekaran, 2003) is very important.'
","SethEtAl2015DeveloModelSucces",250,"x","x","x","x"
"Communication","communication","
`Therefore, the open communication with the employees, suppliers and customers is an important factor for the successful implementation of SCMIS (Mabert, Soni & Venkataramanan, 2003).'
","SethEtAl2015DeveloModelSucces",250,"x","x","x","x"
"Communication","communication","
`According to the regression analysis on the successful implementation of SCMIS, as shown in Table 8, factors that have significant impact at 5 per cent or higher level include top management support, user support and involvement, training and education, change management, pre-implementation analysis, communication and data Table 7.'
","SethEtAl2015DeveloModelSucces",256,"x","x","x","x"
"Communication","communication","
`Formal and honest communication from the top management leads to reduction in the resistance to change.'
","SethEtAl2015DeveloModelSucces",258,"x","x","x","x"
"Communication","communication","
`Lastly, the findings of this study support the proposed hypothesis that communication has a positive impact on SCMIS implementation success (H1h), so as organizations move towards integration with the outside world, proper communication is imperative between the users, top management, project management team and leader.'
","SethEtAl2015DeveloModelSucces",258,"x","x","x","x"
"Communication","communication","
`Proper communication should ensure that the users understand the need and the benefits associated with the adoption of the inter-organizational system.'
","SethEtAl2015DeveloModelSucces",258,"x","x","x","x"
"Communication","communication","
`Communication should be two way as well as open where employees are free to express themselves and give their feedback.'
","SethEtAl2015DeveloModelSucces",258,"x","x","x","x"
"Communication","communication","
`Communication will reduce the uncertainty with the adoption of the information system and would diminish the concern about the threat of job, power or status.'
","SethEtAl2015DeveloModelSucces",258,"x","x","x","x"

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"Communication","communication","
`Such consequences can be avoided by open communication with top management,
vendors, and consultants through the establishment of senior and professional
steering committees, a balanced project team, and a ``responsible'' definition
of success measures.'
","ShaulEtAl2013CriticSuccesFactor",19,"x","x","x","x"
"Consultant Support","consultant support","
`Other factors found to affect the effectiveness of ERP system implementation,
includes external consultant support, knowledge transfer, and the technical
aspects knowledge transfers, all of which are essential during an implementation
process.'
","AliEtAl2017ERPSystemImplem",673,"","","","x"
"Consultant Support","use of consultant","
`They rate CSFs by a degree of importance during ERP implementation as follows:
(1) top management support; (2) project team competence; (3) inter-departmental
cooperation; (4) clear goals and objectives; (5) project management; (6) inter-
departmental communication; (7) management of expectation; (8) project champion;
(9) vendors' support; (10) careful package selection; (11) data analysis and
conversion; (12) dedicated resources; (13) use of steering committee; (14) user
training on software; (15) education on new business processes; (16) BPR; (17)
minimal customisation; (18) architecture choices; (19) change management; (20)
partnership with vendors; (21) use of vendors' tool; and (22) use of
consultant.'
","AliEtAl2017ERPSystemImplem",674,"","","","x"
"Consultant Support","use of consultant","
`Reduce trouble shooting and project risk risk management which involves
developing proper troubleshooting tools, adequate skills and techniques and in
relation to the CSF use of consultants, working closely with vendors and
consultants when something is wrong in the system [4].'
","OsmanEtAl2019ERPCriticSucces",38,"","","","x"
"Consultant Support","use of consultant","
`Organisational factors constitute 8 of the `top 10' CSFs (Ahmad and
PinedoCuenca, 2013), and based on the interaction impact among these factors,
the most critical to success were cultural change, management support, and use
of consultants, factors most applicable at the crucial stages of adaptation and
acceptance.'
","RabaaiEtAl2015CulturPerspeon",87,"","","","x"
"Consultant Support","use of consultant","
`Item Description 1 top management support 25 application project costs 2
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relations 5 business plan-vision 29 ongoing vendor support 6 change management
30 use of vendor's development tools 7 education on new business process 31
organizational characteristics 8 user training& education 32 employee / team
morale-motivation 9 user acceptance 33 leadership of the project team 10
managing cultural change 34 project team competence- composition 11 business
process reengineering 35 ERP team work 12 customization 36 steering committee 13
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troubleshooting 41 appropriate business-legacy systems 18 implementation
strategies 42 data integration 19 ERP package selection 43 scope & vision based
performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of
performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","","","x"
"Consultant Support","use of consultant","
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation
strategies (23) Management of expectations (24) Project management (32) Employee
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/ team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"","","","x"
"Cooperation","cooperation","
`They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.'
","AliEtAl2017ERPSystemImplem",674,"x","x","x","x"
"Cooperation","cooperation","
`Top management, project management and individuals like key players should work in cooperation to adopt the system to their organization.'
","BasogluEtAl2007OrganiAdoptiEnterp",87,"x","x","x","x"
"Cooperation","cooperation","
`Successful ERP implementation requires the coordination of many activities and a close cooperation between managers, employees, IT specialists, business analysts and consultants [39].'
","ChatzoglouEtAl2016AnteceOutcomERP",1255,"x","x","x","x"
"Cooperation","cooperation","
`Since ERP is a highly integrated information system, its design, implementation and operation require the complete cooperation of line and staff members from all segments of the business.'
","GargEtAl2014CriticSuccesFactor",404,"x","x","x","x"
"Cooperation","cooperation","
`It needs the cooperation of technical, business experts and external consultants, as well as the involvement of end-users in different project phases (Nah et al.,2001).'
","MahrazEtAl2020CompilAnalysCritic",113,"x","x","x","x"
"Cooperation","cooperation","
`The top five were top management support, project team competence, project champion, inter-departmental cooperation, and clear goals and expectations.'
","Rabaai2009IdentiCriticSucces",6,"x","x","x","x"
"Cooperation","cooperation","
`Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38

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use of consultants 15 data accuracy 39 obtain business analysts 16 data
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troubleshooting 41 appropriate business-legacy systems 18 implementation
strategies 42 data integration 19 ERP package selection 43 scope & vision based
performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of
performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"x","x","x","x"
"Cooperation","cooperation","
`Maintain cooperation, involvement and value of trust between departments.'
","SaygiliEtAl2017EndUsersPercep",74,"x","x","x","x"
"Cooperation","cooperation","
`Intervention of the top management is necessary for the resourcing of the
project, to take fast and effective decisions, to resolve conflict, to promote
company-wide acceptance of the project and to build cooperation among the
diverse groups within the organization.'
","SethEtAl2015DeveloModelSucces",250,"x","x","x","x"
"Cooperation","cooperation","
`It is imperative that we have the complete cooperation of employees at all
levels; technologies alone will not improve the organizational competitiveness.'
","SethEtAl2015DeveloModelSucces",250,"x","x","x","x"
"Cooperation","cooperation","
`Successful implementation of IOS requires the cooperation and commitment of
trading partners (Premkumar & Ramamurthy, 1995); thus, developing cordial
relationships and partnerships (Gunasekaran, Lai & Edwin Cheng, 2008; Ketikidis,
Koh, Dimitriadis, Gunasekaran & Kehajova, 2008) forms the basis of successful
IOS.'
","SethEtAl2015DeveloModelSucces",251,"x","x","x","x"
"Cooperation","cooperation","
`In addition, the project team should be empowered to define a clear program and
required resources, set realistic milestones, and ensure interdepartmental
cooperation.'
","ShaulEtAl2013CriticSuccesFactor",19,"x","x","x","x"
"Cost of Function","budget","
`Summarising, Velcu (2010), using an analytical approach to investigate ERP
system implementations, reports that when ERP system implementation strategies
are aligned with business strategy, it is more likely that ERP implementation
will be completed on budget and on time.'
","AliEtAl2017ERPSystemImplem",678,"x","x","x","x"
"Cost of Function","budget","
`These projects are, on average, 178% over budget, took 2.5 times longer than
intended and delivered only 30% of promised benefit [9].'
","AmidEtAl2012IdentiClassiERP",227,"x","x","x","x"
"Cost of Function","budget","
`C states: ``Projects have to meet time, budget and scope targets to be called
successful.'' H, on the other hand, thinks time is not the main priority in ERP
upgrade projects, as long as there is a usable system in place and productivity
is not endangered.'
","BarthEtAl2019CriticSuccesFactor",663,"x","x","x","x"
"Cost of Function","budget","
`However, functionality targets have to be achieved and budget targets met.'
","BarthEtAl2019CriticSuccesFactor",663,"x","x","x","x"
"Cost of Function","budget","
`Nevertheless, I states: ``To qualify a project as successful, also time and
budget targets have to be met.'' As a result of the high complexity of the
project and the huge dependency on the ERP system, B and J scale down the
expectations and consider an ERP upgrade project as successful when time targets
are nearly met and the company is able to continue their business without
complications.'
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","BarthEtAl2019CriticSuccesFactor",663,"x","x","x","x"
"Cost of Function","budget","
`As a result of the high complexity of such projects, financial forecasts are
often not met and costs exceed the planned budget.'
","BarthEtAl2019CriticSuccesFactor",667,"x","x","x","x"
"Cost of Function","budget","
`In addition to that, about 90% of ERP implementations are over budget or late
according to a survey constructed in 1999 (Seewald, 2002).'
","BasogluEtAl2007OrganiAdoptiEnterp",74,"x","x","x","x"
"Cost of Function","budget","
`A recent Standish Group report on ERP implementation projects reveals that
these projects are, on average, 178% over budget, took 2.5 times longer than
intended and delivered only 30% of promised benefit (Zhang, Lee, Huang, Zhang, &
Huang, 2005).'
","BasogluEtAl2007OrganiAdoptiEnterp",74,"x","x","x","x"
"Cost of Function","budget","
`Moreover, With ERP penetration at 67%, the ERP market was the largest segment
of a company's applications budget (34%) in 2004.'
","BasogluEtAl2007OrganiAdoptiEnterp",77,"x","x","x","x"
"Cost of Function","budget","
`In spite of high expectations of the organizations purchasing ERP software,
most of ERP projects become overbudget, late and even fail (Genoulaz & Millet,
2006; Griffith et al., 1999; Hong & Kim, 2002; Kumar et al., 2003; Seewald,
2002).'
","BasogluEtAl2007OrganiAdoptiEnterp",79,"x","x","x","x"
"Cost of Function","budget","
`Although most of the ERP projects are failures, ERP is still expected to remain
the biggest segment of large and mid-size companies' IT applications budgets
(Seewald, 2002).'
","BasogluEtAl2007OrganiAdoptiEnterp",92,"x","x","x","x"
"Cost of Function","budget","
`In 2004, it was evaluated that 90% of ERP applications were delivered late or
exceeded the budget, and 67% of these applications failed to achieve expected
benefits realization [21].'
","CoşkunEtAl2022ERPFailurSystem",3,"x","x","x","x"
"Cost of Function","budget","
`One of the most common types of failure in ERP implementation can be seen as
budget overruns.'
","CoşkunEtAl2022ERPFailurSystem",3,"x","x","x","x"
"Cost of Function","budget","
`Often, budget overruns are caused by issues such as expanded scope, additional
technology requirements, unanticipated organizational issues.'
","CoşkunEtAl2022ERPFailurSystem",3,"x","x","x","x"
"Cost of Function","budget","
`It should not be confused that many factors such as ``budget'',
``communication'', and ``project team'' are not examined in the ``Project
Management Problems'' category since they are examined in separate categories
because many articles analyzed in this study show that project management is
handled as project coordination.'
","CoşkunEtAl2022ERPFailurSystem",13,"x","x","x","x"
"Cost of Function","budget","
`(4) The Project Management factor in this study is defined by team composition,
project team competence, scope management, expectation management, communication
within project team and budget control items which may affect the success of ERP
implementation in Indian retail sector.'
","GargEtAl2015FactorAffectERP",1332,"x","x","x","x"
"Cost of Function","budget","
`Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) ●

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Communication within the company ● Organization resistance ● Project budget ●
Project management ● Implementation strategy ● Strategic goals and objectives ●
Business process reengineering ● organizational culture ● knowledge base of the
company ● Project planning and control ● Facilitating conditions ● Organization
size ● The vision of the organization ● Readiness of organizations ● Clarity of
potential cost ● User involvement ● Selection of vendor/consult ant ● Project
team ● Top management support ● Training of user ● Trust on vendor ● Performance
expectancy ● Effort expectancy ● Social influence ● Age ● Gender ● Highest
degree attained ● Selection of ERP package ● IT infrastructure ● Data integrity
and system testing.'
","HuangEtAl2021CriticSuccesFactor",4686,"x","x","x","x"
"Cost of Function","budget","
`This study attempts to present the ERP system's implementation success in terms
of organizational impact, on time and under allocated budget by qualitatively
examining relationship of each of the identified critical success factors (CSFs)
to project's implementation success in enterprises of a developing country,
China, by using validated responses from 12 organizations, using a questionnaire
survey approach.'
","KhattakEtAl2013InvestCriticSucces",39,"x","x","x","x"
"Cost of Function","budget","
`As per the Standish group's research more than 90% of ERP implementations
projects found to run beyond their agreed schedules and exceed their initially
allocated budget (Hanafizadeh et al., 2010).'
","KhattakEtAl2013InvestCriticSucces",41,"x","x","x","x"
"Cost of Function","budget","
`The aim and main focus of this study is to examine the most critical factors in
Chinese enterprises by using the `organizational impact' dimension of
information system success model (DeLone and McLean, 1992 & 2002) for success
assessment together with `on time and under allocated budget' for project
completion as being the success measures.'
","KhattakEtAl2013InvestCriticSucces",41,"x","x","x","x"
"Cost of Function","budget","
`Success of the project was measured by the questions about on time and
within/under budget project's completion and the impact of the ERP systems,
whether low or medium or high, on the entire organizational performance.'
","KhattakEtAl2013InvestCriticSucces",49,"x","x","x","x"
"Cost of Function","budget","
`As Bradley (2008) argued that a project could be said successful only if it is
got to be completed within the scheduled time, allocated budget and bringing
positive impact on the entire organization therefore, on the basis of the same
criteria cases 1,2,3,4.5,6,8,9,10 & 12 were classed as successful and cases 7 &
11 were termed as unsuccessful.'
","KhattakEtAl2013InvestCriticSucces",53,"x","x","x","x"
"Cost of Function","budget","
`IT staff too may have a significant learning overhead, an inadequate budget for
the training required, an extra learning curve (with an ongoing dependence on
consultants) significant extra work necessitated while legacy systems remain
critical.'
","RabaaiEtAl2016SuccesFactorEnterp",58,"","x","",""
"Cost of Function","budget","
`These projects are, on average, 178% over budget, took 2.5 times longer than
intended and delivered only 30% of promised benefit (Zhang, Lee, Huang, Zhang, &
Huang, 2005).'
","RavasanEtAl2014FCM-BaDynamiModeli",33,"x","x","x","x"
"Cost of Function","budget","
`Generally, it is believed that the project is partially failed because it is
not completed within time and/or budget (process failure), the ERP systems do
not live up to user expectations (expectation failure), and there is no match
```

between ERP systems and the planned objectives (correspondence failure).'
","RavasanEtAl2014FCM-BaDynamiModeli",40,"","x","",""
"Cost of Function","cost","
`Enterprise resource planning (ERP) systems have proved to be the solution to
the information needs of many businesses, but a costly mistake for many others.'
","AliEtAl2017ERPSystemImplem",666,"x","x","x","x"
"Cost of Function","cost","
`Mandal and Gunasekaran (2003), examining post-implementation feedback, propose
a feedback system to help organisations constantly monitor the implementation
performance, and post-implementation strategies to measure the effectiveness of
ERP systems, including the measurement of objectives achieved, cost estimates,
and improvements in IT infrastructure.'
","AliEtAl2017ERPSystemImplem",679,"x","x","x","x"
"Cost of Function","cost","
`They observe that vendor failure to adapt to local culture, BPR, managing local
human resources, lack of information sharing, failure to understand cultural
characteristics, lack of adaptability towards a changing business and economic
environment, lack of cost control functions (i.e. adapting to changing costs),
and failure to understand technical issues are the main causes of ERP
implementation failure.'
","AliEtAl2017ERPSystemImplem",681,"x","x","x","x"
"Cost of Function","cost","
`They identify causes of ERP implementation failure as excessive customisation,
dilemma of internal integration, poor understanding of business implications and
requirements, lack of change management strategy, poor data quality,
misalignment of IT with business, hidden costs, limited training, and lack of
top management support.'
","AliEtAl2017ERPSystemImplem",681,"x","x","x","x"
"Cost of Function","cost","
`Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000)
Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000)
Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in
personnel Lack of discipline Organisational resistance Lack of organisational
commitment Poor data accuracy Limited user involvement Mismatch between
organisation requirements and functionalities offered Lack of readiness for
integration Lack of focus on user education and training Excessive customisation
Inadequate organisational analysis Costs Project duration Technical challenges
Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.'
","AliEtAl2017ERPSystemImplem",681,"x","x","x","x"
"Cost of Function","cost","
`35% of ERP implementations are canceled, with the remaining 65% of them
resulting in cost and scheduling overruns averaging 178% and 230%,
respectively.'
","AmidEtAl2012IdentiClassiERP",228,"x","x","x","x"
"Cost of Function","cost","
`The first category defines success or failure by focusing on some project
factors like project cost or time but other ones define success as a result of
achieving implementation goals like integrating organizational information,
better decision making, improving inter-organizational communications and
decreasing operational bottlenecks [47-49].'
","AmidEtAl2012IdentiClassiERP",228,"x","x","x","x"
"Cost of Function","cost","
`Project management recognizes three challenging and interconnected restraints
which are time, scope and cost goals (Schwalbe, 2000).'
","AnjumEtAl2015FactorManipuERP",629,"x","x","x","x"
"Cost of Function","cost","
`Because of the large amount of money spent on ERP upgrades, which can add up to
25-33 percent of the initial implementation costs for one upgrade (Ohlson,

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2000), a comprehensive understanding of ERP upgrade concepts and their
challenges is necessary to prevent project failures (Olson and Zhao, 2006).'
","BarthEtAl2019CriticSuccesFactor",657,"x","x","x","x"
"Cost of Function","cost","
`According to a large-scale European multi-country survey the most important
factor is the best fit with current business processes, respectively,
organization (Hong and Kim, 2002; Ngai et al., 2008), followed by flexibility,
cost, user-friendliness, scalability and vendor support (van Everdingen et al.,
2000).'
","BarthEtAl2019CriticSuccesFactor",659,"x","x","x","x"
"Cost of Function","cost","
`Finally, at the end of any ERP implementation project, it is necessary to
evaluate its success, focusing on measurable project management metrics like
completion dates, costs and target achievement, and the production system,
including metrics like performance or reliability (Nah, Lau and Kuang, 2001;
Ross and Vitale, 2000).'
","BarthEtAl2019CriticSuccesFactor",659,"x","x","x","x"
"Cost of Function","cost","
`Chen et al. (2009) name maintenance and support as essential elements in the
management of ERP systems, and show that the establishment of appropriate
governance structures is necessary, also because costs for maintenance can come
up to annually about 25 percent of implementation costs (Granebring and Revay,
2005).'
","BarthEtAl2019CriticSuccesFactor",659,"","x","",""
"Cost of Function","cost","
`This is also emphasized by Koch and Mitteregger (2016), who have shown that
amount of customization during implementation affects support costs in
maintenance, similar to Light (2001).'
","BarthEtAl2019CriticSuccesFactor",659,"","x","",""
"Cost of Function","cost","
`Upgrade activities are getting more attention in ERP-using organizations,
especially as on average an organization has to execute an ERP upgrade every
three years (Olson and Zhao, 2006), and costs reach between 25 and 33 percent of
initial implementation costs.'
","BarthEtAl2019CriticSuccesFactor",660,"x","x","x","x"
"Cost of Function","cost","
`As an ERP system has to be upgraded several times during its life cycle, the
upgrading costs will exceed the implementation costs eventually.'
","BarthEtAl2019CriticSuccesFactor",660,"","x","",""
"Cost of Function","cost","
`As guidelines for such a project, the authors provide in addition to a focus on
added value rather than cost reduction, most importantly de-individualization.'
","BarthEtAl2019CriticSuccesFactor",660,"x","x","x","x"
"Cost of Function","cost","
`Each new functionality has to be discussed in detail and benefits have to be
weighed against the costs in order to find the best solution for the company.''
A special focus was often put on the project manager.'
","BarthEtAl2019CriticSuccesFactor",664,"x","x","x","x"
"Cost of Function","cost","
`(10) Top management support: ERP upgrade projects not only cause huge costs but
often also implicate considerable organizational and technical change.'
","BarthEtAl2019CriticSuccesFactor",667,"x","x","x","x"
"Cost of Function","cost","
`As a result of the high complexity of such projects, financial forecasts are
often not met and costs exceed the planned budget.'
","BarthEtAl2019CriticSuccesFactor",667,"x","x","x","x"
"Cost of Function","cost","
`However, not only because of complexity but also because of high costs, a
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failed ERP upgrade project can have serious negative consequences.'
","BarthEtAl2019CriticSuccesFactor",669,"x","x","x","x"
"Cost of Function","cost","
`Despite numerous implementation challenges and high implementation costs, ERP systems have become popular, and both small and large companies implement ERP systems in order to remain competitive.'
","ChatzoglouEtAl2016AnteceOutcomERP",1254,"x","x","x","x"
"Cost of Function","cost","
`The expected benefits of system quality include cost reduction, enhanced performance and improved efficiency [67].'
","ChatzoglouEtAl2016AnteceOutcomERP",1257,"x","x","x","x"
"Cost of Function","cost","
`Information quality can help organizations choose different supply resources, hence, produce with lower costs and, therefore, develop competitive advantages, while increasing their competitiveness and internal efficiency.'
","ChatzoglouEtAl2016AnteceOutcomERP",1260,"x","x","x","x"
"Cost of Function","cost","
`Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.'
","FinneyEtAl2007ERPImplemCompil",340,"x","x","x","x"
"Cost of Function","cost","
`Developing software systems is an expensive, and often a difficult process as software development projects are affected by a series of problems, such as poor project management, cost and schedule overruns, poor quality software and under-motivated developers.'
","GargEtAl2013EmpiriStudyon",500,"x","x","x","x"
"Cost of Function","cost","
`BPR can be defined as the fundamental rethinking and radical redesign of business process to achieve dramatic improvement in critical, contemporary measures of performance, such as cost, quality, service and speed approaches (Hammer and Champy, 1993; Koch, 2001; Huang et al., 2004).'
","GargEtAl2015FactorAffectERP",1318,"x","","x",""
"Cost of Function","cost","
`Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) ● Communication within the company ● Organization resistance ● Project budget ● Project management ● Implementation strategy ● Strategic goals and objectives ● Business process reengineering ● organizational culture ● knowledge base of the company ● Project planning and control ● Facilitating conditions ● Organization size ● The vision of the organization ● Readiness of organizations ● Clarity of potential cost ● User involvement ● Selection of vendor/consult ant ● Project team ● Top management support ● Training of user ● Trust on vendor ● Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender ● Highest degree attained ● Selection of ERP package ● IT infrastructure ● Data integrity and system testing.'
","HuangEtAl2021CriticSuccesFactor",4686,"x","x","x","x"
"Cost of Function","cost","
`The management in such organizations faced up with such a high resistance from

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the systems users that they were even unable to implement the other modules of
the system for which their management already paid for the huge sum of money,
which cause the enterprises with financial losses to a great extent and hence
the project was declared unsuccessful in the end due to both the cost as well as
time overruns.'
","KhattakEtAl2013InvestCriticSucces",59,"x","x","x","x"
"Cost of Function","cost","
`Implementing ERPs successfully however is problematic, costly and complex, and
often shows high failure rates or even abandonment due to lack of fit with the
business or social culture.'
","RabaaiEtAl2015CulturPerspeon",85,"x","x","x","x"
"Cost of Function","cost","
`Ownership of an Enterprise System is a risky and `high cost proposition'
involving numerous indirect as well as direct costs (Umble, Haft and Umble,
2003).'
","RabaaiEtAl2015CulturPerspeon",86,"x","x","x","x"
"Cost of Function","cost","
`Such difficulties can be more than pain or inconvenience: reports consistently
note that the majority of ERP implementations fail, with cost and schedule
overruns, non-realisation of benefits, failure to recoup costs, and satisfaction
below 50% on various dimensions (Krigsman, 2013).'
","RabaaiEtAl2015CulturPerspeon",86,"x","x","x","x"
"Cost of Function","cost","
`There was also a significant difference in the regularity of cost reviews, with
almost 50% of private sector respondents disagreeing that ``the project's costs
were reviewed regularly'' compared to around only 6% of public sector
respondents.'
","RabaaiEtAl2015CulturPerspeon",95,"x","x","x","x"
"Cost of Function","cost","
`Other studies indicates that 35% of ERP implementations are cancelled, with the
remaining 65% of them resulting in cost and time overruns averaging 178% and
230%, respectively.'
","RavasanEtAl2014FCM-BaDynamiModeli",34,"x","x","x","x"
"Cost of Function","cost","
`Later on, Gargeya and Brady (2005) classified ERP failure implementation in two
levels of 1) complete failure: the project is cancelled before full
implementation or is omitted from operation and 2) partial failure: increased
implementation costs and time over the estimated, inadequate return on
investment (ROI) or user satisfaction and so on.'
","RavasanEtAl2014FCM-BaDynamiModeli",35,"x","x","x","x"
"Cost of Function","cost","
`Item Description 1 top management support 25 application project costs 2
effective communication 26 interdepartmental cooperation 3 interdepartmental
communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor
relations 5 business plan-vision 29 ongoing vendor support 6 change management
30 use of vendor's development tools 7 education on new business process 31
organizational characteristics 8 user training& education 32 employee / team
morale-motivation 9 user acceptance 33 leadership of the project team 10
managing cultural change 34 project team competence- composition 11 business
process reengineering 35 ERP team work 12 customization 36 steering committee 13
minimal customization 37 empowered decision makers 14 software configuration 38
use of consultants 15 data accuracy 39 obtain business analysts 16 data
analysis- conversion 40 project champion 17 software development testing &
troubleshooting 41 appropriate business-legacy systems 18 implementation
strategies 42 data integration 19 ERP package selection 43 scope & vision based
performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of
performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"x","x","x","x"
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"Data Analysis & Conversion","data analysis and conversion","
`They rate CSFs by a degree of importance during ERP implementation as follows:
(1) top management support; (2) project team competence; (3) inter-departmental
cooperation; (4) clear goals and objectives; (5) project management; (6) inter-
departmental communication; (7) management of expectation; (8) project champion;
(9) vendors' support; (10) careful package selection; (11) data analysis and
conversion; (12) dedicated resources; (13) use of steering committee; (14) user
training on software; (15) education on new business processes; (16) BPR; (17)
minimal customisation; (18) architecture choices; (19) change management; (20)
partnership with vendors; (21) use of vendors' tool; and (22) use of
consultant.'
","AliEtAl2017ERPSystemImplem",674,"","x","",""
"Data Analysis & Conversion","data analysis and conversion","
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation
strategies (23) Management of expectations (24) Project management (32) Employee
/ team morale & motivation (33) Leadership of the project team (34) Project team
competence and composition 2 (14) Software configuration (21) IT infrastructure
(28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor
development tools (38) Use of consultants 3 (40) Project champion (46) National
culture (47) Country related functional requirements (48) Centralization 4 (1)
Top management support (2) Effective communication (3) Interdepartmental
communication (4) Clear goals and objectives (5) Business plan & vision 5 (15)
Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7)
Education on new business processes (8) User training and education (9) User
acceptance (10) Managing cultural change this result maybe, end-users resist
changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"","x","",""
"Data Analysis & Conversion","data conversion","
`Frequency analysis of CSFs in literature CSF category Top management commitment
and support Change management BPR and software configuration Training and job
redesign Project team: the best and brightest Implementation strategy and
timeframe Consultant selection and relationship Visioning and planning Balanced
team Project champion Communication plan IT infrastructure Managing cultural
change Post-implementation evaluation Selection of ERP Team morale and
motivation Vanilla ERP Project management Troubleshooting/crises management
Legacy system consideration Data conversion and integrity System testing Client
consultation Project cost planning and management Build a business case
Empowered decision makers Number of instances cited in literature 25 25 23 23 21
17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often
focused on only a specific aspect of the implementation process or a specific
CSF.'
","FinneyEtAl2007ERPImplemCompil",340,"","x","",""
"Data Analysis & Conversion","data conversion","
`ERP implementation success is highly dependent on success of data conversion
and accuracy.'
","GargEtAl2014FactorInflueERP",440,"","x","",""
"Data Analysis & Conversion","data conversion","
`in Indian retail sector (2) The ``Technological'' factor in this study is
defined by Implementation strategy, Adequate IT infrastructure, Minimal
customization and Data conversion and accuracy items which may affect the
success of ERP implementation in Indian retail sector.'
","GargEtAl2015FactorAffectERP",1331,"","x","",""
"Data Analysis & Conversion","data conversion","
`ERP implementation success is highly dependent on success of data conversion
and accuracy.'
","GargEtAl2015FactorAffectERP",1331,"","x","",""
"Data Analysis & Conversion","data conversion","
`Moreover, end-users involvement is helpful in the ERP configuration analysis

and in data conversion as well as in system testing.'
","OsmanEtAl2019ERPCriticSucces",38,"","x","",""
"Data Analysis & Conversion","data conversion","
`Moreover, key aspects like data conversion, integration and analysis provided by ERP applications are pointed out by end-users.'
","SaygiliEtAl2017EndUsersPercep",69,"","x","",""
"Data Analysis & Conversion","data integrity","
`Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) ● Communication within the company ● Organization resistance ● Project budget ● Project management ● Implementation strategy ● Strategic goals and objectives ● Business process reengineering ● organizational culture ● knowledge base of the company ● Project planning and control ● Facilitating conditions ● Organization size ● The vision of the organization ● Readiness of organizations ● Clarity of potential cost ● User involvement ● Selection of vendor/consult ant ● Project team ● Top management support ● Training of user ● Trust on vendor ● Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender ● Highest degree attained ● Selection of ERP package ● IT infrastructure ● Data integrity and system testing.'
","HuangEtAl2021CriticSuccesFactor",4686,"","x","",""
"Data Analysis & Conversion","data integrity","
`Certainly efficiency is desirable and several CSFs proved relevant in HES – mainly in efficient service delivery, IT support, easier access to reliable information by integrating disparate legacy systems and reengineered business processes, and data integrity.'
","RabaaiEtAl2016SuccesFactorEnterp",58,"","x","",""
"Data Analysis & Conversion","data management","
`The findings of our study reveal that `appropriate business and IT legacy systems', `business plan/vision/goals/justification', `business process reengineering', `change management culture and programme', `communication', `ERP teamwork and composition', `monitoring and evaluation of performance', `project champion', `project management', `software/system development, testing and troubleshooting', `top management support', `data management', `ERP strategy and implementation methodology', `ERP vendor', `organizational characteristics', `fit between ERP and business/process', `national culture' and `country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.'
","NgaiEtAl2008ExaminCriticSucces",548,"","x","",""
"Data Analysis & Conversion","data management","
`Data management Data management is one of the new factors not included in Nah et al. [51].'
","NgaiEtAl2008ExaminCriticSucces",555,"","x","",""
"Data Analysis & Conversion","data management","
`Whereas the focus of MRP is on manufacturing processes, ERP systems look at a much broader integration of information or data management functions within the organisation.'
","Rabaai2009IdentiCriticSucces",2,"","x","",""
"Data Analysis & Conversion","data management","
`ERP failure factors and categories Failure Categories Failure Factors C4: Project Management F1: Conflicts between organization and consultants/ vendor C5: Technical F2: High rate of system customization C5: Technical F3: Data management issues C2: Human Resources F4: Inadequate education and training C2: Human Resources F5: Inadequate user involvement C2: Human Resources F6: Ineffective communications system C3: Organizational F7: Internal conflicts between departments C2: Human Resources F8: Inadequate change management C3: Organizational F9: Lack of performance measurement system C3: Organizational F10: Misfit between organization culture and ERP system C3: Organizational F11: Misfit between organization structure and ERP system C3: Organizational F12: Misfits between the IT and business strategies C1: Environmental F13:

Environmental pressures C3: Organizational F14: Poor business process reengineering C1: Environmental F15: Poor consultant C4: Project Management F16: Poor project management C4: Project Management F17: Poor risk management C3: Organizational F18: Poor top management support C5: Technical F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...'
","RavasanEtAl2014FCM-BaDynamiModeli",42,"","x","",""
"Data Analysis & Conversion","data management","
`Accordingly, Data Management is critical in ERP package selection and implementation (Soh et al., 2000; Ahituv et al., 2002).'
","SaygiliEtAl2017EndUsersPercep",69,"","x","",""
"Data Analysis & Conversion","data quality","
`Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) identify several other attributes associated with implementation failures, including approaching ERP implementation from an excessively functional perspective, inappropriately cutting the scope of the project, eliminating user training, inadequate testing, not improving business processes initially, underestimating data quality problems, fragile human capital, and data migration problems.'
","AliEtAl2017ERPSystemImplem",680,"","x","",""
"Data Analysis & Conversion","data quality","
`They identify causes of ERP implementation failure as excessive customisation, dilemma of internal integration, poor understanding of business implications and requirements, lack of change management strategy, poor data quality, misalignment of IT with business, hidden costs, limited training, and lack of top management support.'
","AliEtAl2017ERPSystemImplem",681,"","x","",""
"Data Analysis & Conversion","data quality","
`Data quality and accuracy is a major determinant of ERP success widely cited in the literature [9,14,19,36,66,87,92].'
","AmidEtAl2012IdentiClassiERP",233,"","x","",""
"Data Analysis & Conversion","data quality","
`Work practices, poor data quality, BPR activities, customization of the ERP system, internal staff adequacy, training, top management support, quality of consultants are the main problems (Genoulaz & Millet, 2006).'
","BasogluEtAl2007OrganiAdoptiEnterp",89,"","x","",""
"Data Analysis & Conversion","data quality","
`To overcome this misfit, companies can establish a framework that takes the primary failures of poor leadership, poor project management, poor data quality, poor training, and users' resistance into consideration.'
","ShaulEtAl2013CriticSuccesFactor",18,"","x","",""
"Data Analysis & Conversion","data quality","
`Thus, identifying data quality requirements is imperative since problems in ERP implementation can arise from a lack of forethought about data quality.'
","ShaulEtAl2013CriticSuccesFactor",19,"","x","",""
"Data Analysis & Conversion","data quality","
`Fourth, deploy supporting tools to control the data quality process by monitoring all dimensions, that is, amount, accuracy, timeliness, completeness, consistency, accessibility, and multiple sources of the same data.'
","ShaulEtAl2013CriticSuccesFactor",19,"","x","",""
"Data Input","data input","
`The project ERP system modules are normally associated with one another, erroneous data input into one component, module will negatively influence the functioning of another module (Sum et al., 1997; Markus and Tanis, 2000).'
","AnjumEtAl2015FactorManipuERP",629,"x","","",""
"Data Input","data input","
`Since ERP system modules are intricately linked to one another, incorrect data input into one module will adversely affect the functioning of other modules.'
","GargEtAl2014CriticSuccesFactor",405,"x","","",""

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"Data Input","data input","
`The project ERP systems modules are intricately linked to one another,
inaccurate data input into one module will adversely affect the functioning of
other module (Sum et al., 1997; Markus and Tanis, 2000).'
","GargEtAl2015FactorAffectERP",1319,"x","","",""
"Education & Training","education","
`They rate CSFs by a degree of importance during ERP implementation as follows:
(1) top management support; (2) project team competence; (3) inter-departmental
cooperation; (4) clear goals and objectives; (5) project management; (6) inter-
departmental communication; (7) management of expectation; (8) project champion;
(9) vendors' support; (10) careful package selection; (11) data analysis and
conversion; (12) dedicated resources; (13) use of steering committee; (14) user
training on software; (15) education on new business processes; (16) BPR; (17)
minimal customisation; (18) architecture choices; (19) change management; (20)
partnership with vendors; (21) use of vendors' tool; and (22) use of
consultant.'
","AliEtAl2017ERPSystemImplem",674,"x","x","x","x"
"Education & Training","education","
`CSFs identified for successful implementation are: a clear understanding of
strategic goals, top management commitment and support, organisational change
management strategy, good implementation team, data accuracy, extensive
education and training, focussed performance measures, and multi-site issues.'
","AliEtAl2017ERPSystemImplem",675,"x","x","x","x"
"Education & Training","education","
`Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000)
Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000)
Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in
personnel Lack of discipline Organisational resistance Lack of organisational
commitment Poor data accuracy Limited user involvement Mismatch between
organisation requirements and functionalities offered Lack of readiness for
integration Lack of focus on user education and training Excessive customisation
Inadequate organisational analysis Costs Project duration Technical challenges
Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.'
","AliEtAl2017ERPSystemImplem",681,"x","x","x","x"
"Education & Training","education","
`In this study, the dimension of ``end-users'' includes three factors (user
involvement, training and education, employee skills).'
","ChatzoglouEtAl2016AnteceOutcomERP",1256,"x","","x",""
"Education & Training","education","
`As expected, education, organizational culture, and communication problems come
to the fore in large-scale companies, while financial problems come to the fore
in small-scale companies.'
","CoşkunEtAl2022ERPFailurSystem",16,"x","x","x","x"
"Education & Training","education","
`Management of communication, education and expectations are critical throughout
the organization (Wee, 2000).'
","GargEtAl2014FactorInflueERP",434,"x","x","x","x"
"Education & Training","education","
`F3 Quality (adequacy) and quantity of training and education of personnel/
system users Nelson & Cheney, 1987; Umble et al.,2003; Bradford & Florin, 2003;
Bradley & Lee, 2007; Somers & Nelson, 2001; Zhang et al.,2002; Bhatti, 2005;
AlMashari et al.,2006; Yuanqiang et al.,2009; Noudoostbeni & Norizan, 2009;
Kumar et al.,2010; Woo,2007; Almahdi et al.,2008; Anjum & Rehman,2010; Garg,
2010; Upadhyay & Dan,2008; Nah et al.,2001; Jafari et al.,2006; Ranzhe &
Qiu,2007; Zarei & Naeli, 2010); Hanafizadeh et al., 2010; Lai,2006; Muscatello &
Chen, 2008.'
","KhattakEtAl2013InvestCriticSucces",47,"x","x","x","x"
"Education & Training","education","
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`The research concludes that: (1) Quality (adequacy) and quantity of training
and education of personnel/users, role and effectiveness of management in
reducing the users' resistance, use of steering committee for control purpose,
top management support or involvement, clearly specified goals/objectives/scope
regarding ERP system, ease of system's use and users' acceptance, vendor's
support, project management, effective communication among the organizational
members and a balanced team for ERP implementation are practically considered by
the successful enterprises in China while planning and going for the
implementation of the ERP system and are thus critical for the success of ERP
systems implementation projects, ignoring of which may cause implementation
failure in the Chinese organizations; (2) Some of the factors deemed imperative
for ERP systems implementation success in the literature like; selection of a
right full time project manager with extensive experience, presence/existence of
a champion, integration of business planning with IT/ERP planning, use and role
of consultant, change management strategy and programs, competency in use of IT
and IT infrastructure, business...'
","KhattakEtAl2013InvestCriticSucces",68,"x","x","x","x"
"Education & Training","education","
`According to the literature, the most studied factors were: Top Management
Support, Effective Communication, Training, and Education, Business plan and
vision, Project Management, BPR management, Change Management, Project team
Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation,
Technological Infrastructure, Legacy systems consideration.'
","MahrazEtAl2020CompilAnalysCritic",112,"x","x","x","x"
"Education & Training","education","
`The factors identified were management and leadership, visioning and planning,
ERP package selection, communication process management, training and education,
project management, legacy systems management, system integration, system
testing, cultural and structural changes, and performance evaluation and
management.'
","Rabaai2009IdentiCriticSucces",6,"x","x","x","x"
"Education & Training","education","
`They are the few key areas where things must go right. . . '' An earlier paper by
this team (Ram, Corkindale and Wu, 2013) tabulated the relationships found in
the literature between CSFs and implementation or performance output success to
identify four factors consistently emerging as central, namely project
management, training and education, business process re-engineering and system
integration.'
","RabaaiEtAl2015CulturPerspeon",87,"x","x","x","x"
"Education & Training","education","
`Low ease of use could be due to the complexity and unfamiliarity of the
interfaces, ineffective end-user education and training, inadequate user
involvement and participation in the implementation, or simply user rejection of
the technology.'
","RabaaiEtAl2015CulturPerspeon",97,"x","x","x","x"
"Education & Training","education","
`Cultures that have successfully adopted ERPs recognise the importance of
adequate education and training for end-users in using the new system (Bajwa,
Garcia and Mooney, 2004).'
","RabaaiEtAl2015CulturPerspeon",97,"x","x","x","x"
"Education & Training","education","
`One of the first articles that has been published about analyzing ERP failures
returned to Umble and Umble (2002) in which they mentioned that lack of
education, BPR, project management, top management support and unrealistic
expectations of users could lead companies to fail.'
","RavasanEtAl2014FCM-BaDynamiModeli",35,"x","x","x","x"
"Education & Training","education","
`ERP failure factors and categories Failure Categories Failure Factors C4:

Project Management F1: Conflicts between organization and consultants/ vendor C5: Technical F2: High rate of system customization C5: Technical F3: Data management issues C2: Human Resources F4: Inadequate education and training C2: Human Resources F5: Inadequate user involvement C2: Human Resources F6: Ineffective communications system C3: Organizational F7: Internal conflicts between departments C2: Human Resources F8: Inadequate change management C3: Organizational F9: Lack of performance measurement system C3: Organizational F10: Misfit between organization culture and ERP system C3: Organizational F11: Misfit between organization structure and ERP system C3: Organizational F12: Misfits between the IT and business strategies C1: Environmental F13: Environmental pressures C3: Organizational F14: Poor business process reengineering C1: Environmental F15: Poor consultant C4: Project Management F16: Poor project management C4: Project Management F17: Poor risk management C3: Organizational F18: Poor top management support C5: Technical F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...'
","RavasanEtAl2014FCM-BaDynamiModeli",42,"x","x","x","x"
"Education & Training","education","
`Critical success factors identified in Turkish studies Author (s) Critical Success Factors Baskak& Cetisli (2003) Top management support, business plan and vision, ERP teamwork, ERP package selection, change management, user training and education, effective communication, project management, data integration, software testing and troubleshooting, appropriate legacy systems, monitoring and evaluation of performance.'
","SaygiliEtAl2017EndUsersPercep",62,"x","x","x","x"
"Education & Training","education","
`Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"x","x","x","x"
"Education & Training","education","
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"x","x","x","x"
"Education & Training","education","

`According to the regression analysis on the successful implementation of SCMIS, as shown in Table 8, factors that have significant impact at 5 per cent or higher level include top management support, user support and involvement, training and education, change management, pre-implementation analysis, communication and data Table 7.'
","SethEtAl2015DeveloModelSucces",256,"x","x","x","x"
"Education & Training","training","
`They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.'
","AliEtAl2017ERPSystemImplem",674,"x","x","x","x"
"Education & Training","training","
`CSFs identified for successful implementation are: a clear understanding of strategic goals, top management commitment and support, organisational change management strategy, good implementation team, data accuracy, extensive education and training, focussed performance measures, and multi-site issues.'
","AliEtAl2017ERPSystemImplem",675,"x","x","x","x"
"Education & Training","training","
`Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) identify several other attributes associated with implementation failures, including approaching ERP implementation from an excessively functional perspective, inappropriately cutting the scope of the project, eliminating user training, inadequate testing, not improving business processes initially, underestimating data quality problems, fragile human capital, and data migration problems.'
","AliEtAl2017ERPSystemImplem",680,"x","x","x","x"
"Education & Training","training","
`They identify causes of ERP implementation failure as excessive customisation, dilemma of internal integration, poor understanding of business implications and requirements, lack of change management strategy, poor data quality, misalignment of IT with business, hidden costs, limited training, and lack of top management support.'
","AliEtAl2017ERPSystemImplem",681,"x","x","x","x"
"Education & Training","training","
`Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline Organisational resistance Lack of organisational commitment Poor data accuracy Limited user involvement Mismatch between organisation requirements and functionalities offered Lack of readiness for integration Lack of focus on user education and training Excessive customisation Inadequate organisational analysis Costs Project duration Technical challenges Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.'
","AliEtAl2017ERPSystemImplem",681,"x","x","x","x"
"Education & Training","training","
`The most common causes of ERP implementation failures are a combination of poor planning and high software customisation (Scheer and Habbermann, 2000), lack of top management commitment; ineffective communication; insufficient training; lack of user support, poor project management, relying on legacy systems, inter-departmental conflicts, poor composition of project teams, failure in redesigning business processes and, lack of clarity about required changes.'

","AliEtAl2017ERPSystemImplem",682,"x","x","x","x"
"Education & Training","training","
`Work practices, poor data quality, BPR activities, customization of the ERP system, internal staff adequacy, training, top management support, quality of consultants are the main problems (Genoulaz & Millet, 2006).'
","BasogluEtAl2007OrganiAdoptiEnterp",89,"x","x","x","x"
"Education & Training","training","
`In this study, the dimension of ``end-users'' includes three factors (user involvement, training and education, employee skills).'
","ChatzoglouEtAl2016AnteceOutcomERP",1256,"x","","x",""
"Education & Training","training","
`Lack of management support, poor organizational culture, communication problems, financial management problems, lack of clarity on scope, project management problems, poor project team, ERP software misfit, poor solution implementer performance, poor quality of testing, outdated it infrastructure, lack of training, highly customized ERP, poor process design, lack of user involvement, resistance to change, unrealistic expectations are the main failure factors that need to be analyzed in detail.'
","CoşkunEtAl2022ERPFailurSystem",3,"x","x","x","x"
"Education & Training","training","
`Therefore, it involves not only the planning stages, but also the allocating of responsibilities to various players, the definition of milestones and critical paths, training and human resource planning, and finally the determination of measures of success (Nah et al., 2001).'
","FinneyEtAl2007ERPImplemCompil",336,"x","x","x","x"
"Education & Training","training","
`Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.'
","FinneyEtAl2007ERPImplemCompil",340,"x","x","x","x"
"Education & Training","training","
`Consultants who are not able to demonstrate a mastery of professional communication skills, good language capability, industrial knowledge, and business analytical skills, are not able to provide expertise concerning project planning, ERP systems and BPR during ERP implementation and hence cannot act as change agents and fill the knowledge gaps (Ngai et al., 2008; Stebel, 1992; Ganesh and Mehta, 2010; Nah and Lau, 2001) (for example, communicating with project team members and users for acquiring business requirements, conducting BPR and delivering professional training).'
","GargEtAl2013EmpiriStudyon",499,"x","x","x","x"
"Education & Training","training","
`Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) ● Communication within the company ● Organization resistance ● Project budget ● Project management ● Implementation strategy ● Strategic goals and objectives ● Business process reengineering ● organizational culture ● knowledge base of the company ● Project planning and control ● Facilitating conditions ● Organization size ● The vision of the organization ● Readiness of organizations ● Clarity of potential cost ● User involvement ● Selection of vendor/consult ant ● Project

team ● Top management support ● Training of user ● Trust on vendor ● Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender ● Highest degree attained ● Selection of ERP package ● IT infrastructure ● Data integrity and system testing.'
","HuangEtAl2021CriticSuccesFactor",4686,"x","x","x","x"
"Education & Training","training","
`P3: The quality (adequacy) and quantity of training and education of personnel/users are positively related to successful implementation of ERP project.'
","KhattakEtAl2013InvestCriticSucces",46,"x","x","x","x"
"Education & Training","training","
`The research concludes that: (1) Quality (adequacy) and quantity of training and education of personnel/users, role and effectiveness of management in reducing the users' resistance, use of steering committee for control purpose, top management support or involvement, clearly specified goals/objectives/scope regarding ERP system, ease of system's use and users' acceptance, vendor's support, project management, effective communication among the organizational members and a balanced team for ERP implementation are practically considered by the successful enterprises in China while planning and going for the implementation of the ERP system and are thus critical for the success of ERP systems implementation projects, ignoring of which may cause implementation failure in the Chinese organizations; (2) Some of the factors deemed imperative for ERP systems implementation success in the literature like; selection of a right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role of consultant, change management strategy and programs, competency in use of IT and IT infrastructure, business...'
","KhattakEtAl2013InvestCriticSucces",68,"x","x","x","x"
"Education & Training","training","
`According to the literature, the most studied factors were: Top Management Support, Effective Communication, Training, and Education, Business plan and vision, Project Management, BPR management, Change Management, Project team Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation, Technological Infrastructure, Legacy systems consideration.'
","MahrazEtAl2020CompilAnalysCritic",112,"x","x","x","x"
"Education & Training","training","
`The factors identified were management and leadership, visioning and planning, ERP package selection, communication process management, training and education, project management, legacy systems management, system integration, system testing, cultural and structural changes, and performance evaluation and management.'
","Rabaai2009IdentiCriticSucces",6,"x","x","x","x"
"Education & Training","training","
`Disruption to staff and resistance to received `best practices', together with required training, data mapping, customisations and their support, complexity of integration with remaining legacy systems are all commonly reported, and are often ongoing issues post-implementation.'
","RabaaiEtAl2015CulturPerspeon",86,"x","x","x","x"
"Education & Training","training","
`They are the few key areas where things must go right. . . '' An earlier paper by this team (Ram, Corkindale and Wu, 2013) tabulated the relationships found in the literature between CSFs and implementation or performance output success to identify four factors consistently emerging as central, namely project management, training and education, business process re-engineering and system integration.'
","RabaaiEtAl2015CulturPerspeon",87,"x","x","x","x"
"Education & Training","training","
`Lack of benefit realisation is not simply attributable to technical or

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managerial aspects however, since most items specifically addressing required
training, change and team composition largely showed that these aspects were
adequately understood and implemented.'
","RabaaiEtAl2015CulturPerspeon",97,"x","x","x","x"
"Education & Training","training","
`Low ease of use could be due to the complexity and unfamiliarity of the
interfaces, ineffective end-user education and training, inadequate user
involvement and participation in the implementation, or simply user rejection of
the technology.'
","RabaaiEtAl2015CulturPerspeon",97,"x","x","x","x"
"Education & Training","training","
`Cultures that have successfully adopted ERPs recognise the importance of
adequate education and training for end-users in using the new system (Bajwa,
Garcia and Mooney, 2004).'
","RabaaiEtAl2015CulturPerspeon",97,"x","x","x","x"
"Education & Training","training","
`Arabic organisations often devalue this however, considering training end-users
as an additional cost to be avoided as much as possible.'
","RabaaiEtAl2015CulturPerspeon",97,"x","x","x","x"
"Education & Training","training","
`As a cheaper substitute to training, organisations often provide end-users with
printed manuals describing the system's functionality, as happened in the
majority of organisations surveyed here.'
","RabaaiEtAl2015CulturPerspeon",97,"x","x","x","x"
"Education & Training","training","
`While the results suggested most respondents considered the training adequate,
it can be argued that the failure to provide significant resources for training
purposes has seen short-term gains, but ultimately end-users ignorance and 98
A.A. Rabaa'i and E. AlJamal system rejection led to long-term failure.'
","RabaaiEtAl2015CulturPerspeon",97,"x","x","x","x"
"Education & Training","training","
`Further research could examine this more closely, since traditional Jordanian
cultural attitudes to training and change management may not match the
requirements for successful ERP uptake.'
","RabaaiEtAl2015CulturPerspeon",98,"x","x","x","x"
"Education & Training","training","
`Disruption to staff and resistance to received ``best practices'', together
with required training, data mapping, customizations and their support,
complexity of integration with remaining legacy systems are all commonly
reported, and are often ongoing issues post-implementation.'
","RabaaiEtAl2016SuccesFactorEnterp",46,"x","x","x","x"
"Education & Training","training","
`IT staff too may have a significant learning overhead, an inadequate budget for
the training required, an extra learning curve (with an ongoing dependence on
consultants) significant extra work necessitated while legacy systems remain
critical.'
","RabaaiEtAl2016SuccesFactorEnterp",58,"","x","",""
"Education & Training","training","
`ERP failure factors and categories Failure Categories Failure Factors C4:
Project Management F1: Conflicts between organization and consultants/ vendor
C5: Technical F2: High rate of system customization C5: Technical F3: Data
management issues C2: Human Resources F4: Inadequate education and training C2:
Human Resources F5: Inadequate user involvement C2: Human Resources F6:
Ineffective communications system C3: Organizational F7: Internal conflicts
between departments C2: Human Resources F8: Inadequate change management C3:
Organizational F9: Lack of performance measurement system C3: Organizational
F10: Misfit between organization culture and ERP system C3: Organizational F11:
Misfit between organization structure and ERP system C3: Organizational F12:
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Misfits between the IT and business strategies C1: Environmental F13: Environmental pressures C3: Organizational F14: Poor business process reengineering C1: Environmental F15: Poor consultant C4: Project Management F16: Poor project management C4: Project Management F17: Poor risk management C3: Organizational F18: Poor top management support C5: Technical F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...'
","RavasanEtAl2014FCM-BaDynamiModeli",42,"x","x","x","x"
"Education & Training","training","
`Critical success factors identified in Turkish studies Author (s) Critical Success Factors Baskak& Cetisli (2003) Top management support, business plan and vision, ERP teamwork, ERP package selection, change management, user training and education, effective communication, project management, data integration, software testing and troubleshooting, appropriate legacy systems, monitoring and evaluation of performance.'
","SaygiliEtAl2017EndUsersPercep",62,"x","x","x","x"
"Education & Training","training","
`Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"x","x","x","x"
"Education & Training","training","
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"x","x","x","x"
"Education & Training","training","
`The proposed model confirms that following factors play a significant role during implementation of SCMIS-top management support, user involvement, pre-implementation analysis, user training, change management, data accuracy and communication.'
","SethEtAl2015DeveloModelSucces",248,"x","x","x","x"
"Education & Training","training","
`According to the regression analysis on the successful implementation of SCMIS, as shown in Table 8, factors that have significant impact at 5 per cent or higher level include top management support, user support and involvement,

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training and education, change management, pre-implementation analysis,
communication and data Table 7.'
","SethEtAl2015DeveloModelSucces",256,"x","x","x","x"
"Education & Training","training","
`Note: Numbers are the beta weight and **p < 0.05. confirms that these CSVs has
a significant impact, and in order to have a successful implementation of SCMIS,
top management support, user support and involvement, preimplementation
analysis, training, change management, data accuracy and communication are
critical.'
","SethEtAl2015DeveloModelSucces",257,"x","x","x","x"
"Education & Training","training","
`The findings also support the proposed hypothesis that training and knowledge
transfer has a positive impact on SCMIS implementation success (H4b), so
organization should arrange effective training for the end users of SCMIS for
smooth implementation of the system.'
","SethEtAl2015DeveloModelSucces",258,"x","x","x","x"
"Education & Training","training","
`To overcome this misfit, companies can establish a framework that takes the
primary failures of poor leadership, poor project management, poor data quality,
poor training, and users' resistance into consideration.'
","ShaulEtAl2013CriticSuccesFactor",18,"x","x","x","x"
"Education & Training","training","
`● IT infrastructure ● System Training and knowledge transfer ● Over-dependence
on detailed and heavy customization ● High turnover rate of project team members
● Business process re-engineering ● User's resistance to transform ● ERP system
misfit Considering these critical factors, specifically affecting the
agricultural business sectors in Malaysia, there are a few possible suggestions
proposed.'
","ShukorEtAl2020EnterpResourPlanni",2055,"x","x","x","x"
"Empowered Decision-makers","empower","
`This is partially supported by Maas et al. (2014), who investigate the impact
of organisational control and empowerment on ERP system usage.'
","AliEtAl2017ERPSystemImplem",677,"","","","x"
"Empowered Decision-makers","empower","
`The authors find that empowerment strategy is positively related to increased
system usage whilst an inverted-U relationship is observed for organisational
control.'
","AliEtAl2017ERPSystemImplem",677,"","","","x"
"Empowered Decision-makers","empower","
`This concept refers to the need for the team to be empowered to make necessary
decisions (Shanks and Parr, 2000; Chen, 2001) in due time, so as to allow for
effective timing with respect to the implementation (Gupta, 2000).'
","FinneyEtAl2007ERPImplemCompil",337,"","","","x"
"Empowered Decision-makers","empower","
`Frequency analysis of CSFs in literature CSF category Top management commitment
and support Change management BPR and software configuration Training and job
redesign Project team: the best and brightest Implementation strategy and
timeframe Consultant selection and relationship Visioning and planning Balanced
team Project champion Communication plan IT infrastructure Managing cultural
change Post-implementation evaluation Selection of ERP Team morale and
motivation Vanilla ERP Project management Troubleshooting/crises management
Legacy system consideration Data conversion and integrity System testing Client
consultation Project cost planning and management Build a business case
Empowered decision makers Number of instances cited in literature 25 25 23 23 21
17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often
focused on only a specific aspect of the implementation process or a specific
CSF.'
","FinneyEtAl2007ERPImplemCompil",340,"","","","x"
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"Empowered Decision-makers","empower","
`Decision maker in the project team should be empowered to make speedy and
valuable decisions.'
","GargEtAl2014CriticSuccesFactor",409,"","","","x"
"Empowered Decision-makers","empower","
`Finally, the PM team should be empowered to manage all aspects of the project,
including balancing the technical, business, and change management
requirements.'
","GargEtAl2014CriticSuccesFactor",416,"","","","x"
"Empowered Decision-makers","empower","
`The most generalized ones being, cost reduction, productivity and quality
improvement, better resource management, improved decision-making and planning,
and organizational empowerment (Federici, 2009; Kamhawi, 2008).'
","GargEtAl2014FactorInflueERP",425,"","","","x"
"Empowered Decision-makers","empower","
`In addition, the decision maker in the project team should be empowered to make
quick and effective decisions [53,54].'
","NgaiEtAl2008ExaminCriticSucces",555,"","","","x"
"Empowered Decision-makers","empower","
`In order to have an effective and fast decision maker, the key member of the
project team must be empowered.'
","NgaiEtAl2008ExaminCriticSucces",557,"","","","x"
"Empowered Decision-makers","empower","
`Further, the project team should be empowered in decision making for continuous
implementation progress.'
","OsmanEtAl2019ERPCriticSucces",37,"","","","x"
"Empowered Decision-makers","empower","
`3 Note: Other critical success factors were found in the reviewed articles,
such as: system testing, building a business case, and empowered decision
makers.'
","Rabaai2009IdentiCriticSucces",7,"","","","x"
"Empowered Decision-makers","empower","
`Item Description 1 top management support 25 application project costs 2
effective communication 26 interdepartmental cooperation 3 interdepartmental
communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor
relations 5 business plan-vision 29 ongoing vendor support 6 change management
30 use of vendor's development tools 7 education on new business process 31
organizational characteristics 8 user training& education 32 employee / team
morale-motivation 9 user acceptance 33 leadership of the project team 10
managing cultural change 34 project team competence- composition 11 business
process reengineering 35 ERP team work 12 customization 36 steering committee 13
minimal customization 37 empowered decision makers 14 software configuration 38
use of consultants 15 data accuracy 39 obtain business analysts 16 data
analysis- conversion 40 project champion 17 software development testing &
troubleshooting 41 appropriate business-legacy systems 18 implementation
strategies 42 data integration 19 ERP package selection 43 scope & vision based
performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of
performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","","","x"
"Empowered Decision-makers","empower","
`The results supported the findings of Sarker & Lee (2003) who stated that
strong and committed leadership, open and honest communication, and a balanced
and empowered implementation team are necessary conditions/precursors for
successful ERP application.'
","SaygiliEtAl2017EndUsersPercep",68,"","","","x"
"Empowered Decision-makers","empower","
`In addition, the project team should be empowered to define a clear program and
required resources, set realistic milestones, and ensure interdepartmental

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cooperation.'
","ShaulEtAl2013CriticSuccesFactor",19,"","","","x"
"Empowered Decision-makers","reporting level","
`Therefore, the project manager's reporting level does not positively or
negatively affects ERP system implementation project success and hence the
literature stating the project manager's reporting relationship as imperative
for the project success is not supported in the current study.'
","KhattakEtAl2013InvestCriticSucces",53,"","","","x"
"Empowered Decision-makers","reporting level","
`... process re-engineering/customization, involvement of organizational
members/users in ERP adoption/implementation and ERP strategy & implementation
methodology are found as least critical i.e. some organizations in China
considers these while some do not and therefore, these factors may be necessary
but exclusively relying on the same may not favorably or unfavorably leads and
thus can not sufficiently guarantee the ERP project implementation success; and
finally (3) A managerial based issue that was supported in the past scholarly
work i.e. reporting level of the project manager is not practically considered
by the enterprises included in the current research and is therefore not
critical at all for ERP systems implementation success in Chinese
organizations.'
","KhattakEtAl2013InvestCriticSucces",68,"","","","x"
"External Environment","economic environment","
`They observe that vendor failure to adapt to local culture, BPR, managing local
human resources, lack of information sharing, failure to understand cultural
characteristics, lack of adaptability towards a changing business and economic
environment, lack of cost control functions (i.e. adapting to changing costs),
and failure to understand technical issues are the main causes of ERP
implementation failure.'
","AliEtAl2017ERPSystemImplem",681,"","","","x"
"External Environment","economic environment","
`One of the most probable reasons among others may be diversity of the samples
that are targeted in different regions and countries, which may have different
national or organizational cultures, government laws or regulations and level of
economic environments.'
","KhattakEtAl2013InvestCriticSucces",46,"","","","x"
"External Environment","economic environment","
`Cultures, government regulations, and economic environments differ among
countries, a fact that raises some issues and challenges for ERP implementation
[30,42,64].'
","NgaiEtAl2008ExaminCriticSucces",549,"","","","x"
"External Environment","external environment","
`The introduction of change management processes is an important requirement in
the modern era especially when the organizations are facing several business
related challenges due to the continuous changes in the external environmental
factors (Saharia and Tucker, 2008).'
","BazhairEtAl2015FactorChangeManage",51,"","","","x"
"IT Infrastructure","infrastructure","
`Lack of management support, poor organizational culture, communication
problems, financial management problems, lack of clarity on scope, project
management problems, poor project team, ERP software misfit, poor solution
implementer performance, poor quality of testing, outdated it infrastructure,
lack of training, highly customized ERP, poor process design, lack of user
involvement, resistance to change, unrealistic expectations are the main failure
factors that need to be analyzed in detail.'
","CoşkunEtAl2022ERPFailurSystem",3,"","","","x"
"IT Infrastructure","infrastructure","
`Special considerations during this phase might include the need to enhance the
ERP interface quality (Aladwani, 2001) as well as the need to plan technology
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infrastructure (Mabert et al., 2003).'
","FinneyEtAl2007ERPImplemCompil",338,"","","","x"
"IT Infrastructure","infrastructure","
`If necessary, infrastructure might need to be upgraded or revamped (Kumar et al., 2002; Palaniswamy and Frank, 2002).'
","FinneyEtAl2007ERPImplemCompil",338,"","","","x"
"IT Infrastructure","infrastructure","
`Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.'
","FinneyEtAl2007ERPImplemCompil",340,"","","","x"
"IT Infrastructure","infrastructure","
`These factors include, but not limited to, poor consultant effectiveness, ERP software misfit, unrealistic expectations from top management concerning the ERP systems, over-reliance on heavy customization, poor quality of Business Process Reengineering (BPR), high turnover rate of project team members, poor IT Infrastructure, functionality problems with the system, unclear concept of the nature and use of the ERP system from the users perspective, too tight project schedule, lack of formal communication, part-time dedication, etc.'
","GargEtAl2013EmpiriStudyon",498,"","","","x"
"IT Infrastructure","infrastructure","
`There should be an adequate IT infrastructure, hardware and networking are crucial for an ERP system's success.'
","GargEtAl2014FactorInflueERP",432,"","","","x"
"IT Infrastructure","infrastructure","
`in Indian retail sector (2) The ``Technological'' factor in this study is defined by Implementation strategy, Adequate IT infrastructure, Minimal customization and Data conversion and accuracy items which may affect the success of ERP implementation in Indian retail sector.'
","GargEtAl2015FactorAffectERP",1331,"","","","x"
"IT Infrastructure","infrastructure","
`Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) ● Communication within the company ● Organization resistance ● Project budget ● Project management ● Implementation strategy ● Strategic goals and objectives ● Business process reengineering ● organizational culture ● knowledge base of the company ● Project planning and control ● Facilitating conditions ● Organization size ● The vision of the organization ● Readiness of organizations ● Clarity of potential cost ● User involvement ● Selection of vendor/consult ant ● Project team ● Top management support ● Training of user ● Trust on vendor ● Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender ● Highest degree attained ● Selection of ERP package ● IT infrastructure ● Data integrity and system testing.'
","HuangEtAl2021CriticSuccesFactor",4686,"","","","x"
"IT Infrastructure","infrastructure","
`The main reasons among many others as to why the Chinese enterprises faced the kind of challenges include data maintenance and integration problems, system integration problems (Lai, 2006), the involvement of knowledgeable consultants in respective projects, selection of reputable vendors, low implementation

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experience, weak or unsophisticated IT infrastructure, lack of access to
knowledge and human resource etc., to name some of few.'
","KhattakEtAl2013InvestCriticSucces",43,"","","","x"
"IT Infrastructure","infrastructure","
`The research concludes that: (1) Quality (adequacy) and quantity of training
and education of personnel/users, role and effectiveness of management in
reducing the users' resistance, use of steering committee for control purpose,
top management support or involvement, clearly specified goals/objectives/scope
regarding ERP system, ease of system's use and users' acceptance, vendor's
support, project management, effective communication among the organizational
members and a balanced team for ERP implementation are practically considered by
the successful enterprises in China while planning and going for the
implementation of the ERP system and are thus critical for the success of ERP
systems implementation projects, ignoring of which may cause implementation
failure in the Chinese organizations; (2) Some of the factors deemed imperative
for ERP systems implementation success in the literature like; selection of a
right full time project manager with extensive experience, presence/existence of
a champion, integration of business planning with IT/ERP planning, use and role
of consultant, change management strategy and programs, competency in use of IT
and IT infrastructure, business...'
","KhattakEtAl2013InvestCriticSucces",68,"","","","x"
"IT Infrastructure","infrastructure","
`According to the literature, the most studied factors were: Top Management
Support, Effective Communication, Training, and Education, Business plan and
vision, Project Management, BPR management, Change Management, Project team
Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation,
Technological Infrastructure, Legacy systems consideration.'
","MahrazEtAl2020CompilAnalysCritic",112,"","","","x"
"IT Infrastructure","infrastructure","
`In addition to the flexibility that they prefer to retain, Chinese leaders are
less willing to invest in the longterm development of company infrastructure
such as in technology adoption, internal human resources, and processes since
they are thrifty, and focus on short-term profit maximization [15].'
","NgaiEtAl2008ExaminCriticSucces",558,"","","","x"
"IT Infrastructure","infrastructure","
`Across various developing countries, Huang and Palvia (2001) identified many
factors of national and organisational culture affecting ERP implementation
including economic status and growth, infrastructure, government regulation, low
IT maturity, small firm size, and lack of process management and BPR
experience.'
","RabaaiEtAl2015CulturPerspeon",88,"","","","x"
"IT Infrastructure","infrastructure","
`Item Description 1 top management support 25 application project costs 2
effective communication 26 interdepartmental cooperation 3 interdepartmental
communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor
relations 5 business plan-vision 29 ongoing vendor support 6 change management
30 use of vendor's development tools 7 education on new business process 31
organizational characteristics 8 user training& education 32 employee / team
morale-motivation 9 user acceptance 33 leadership of the project team 10
managing cultural change 34 project team competence- composition 11 business
process reengineering 35 ERP team work 12 customization 36 steering committee 13
minimal customization 37 empowered decision makers 14 software configuration 38
use of consultants 15 data accuracy 39 obtain business analysts 16 data
analysis- conversion 40 project champion 17 software development testing &
troubleshooting 41 appropriate business-legacy systems 18 implementation
strategies 42 data integration 19 ERP package selection 43 scope & vision based
performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of
performance 21 IT infrastructure 45 post imple...'
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","SaygiliEtAl2017EndUsersPercep",64,"","","","x"
"IT Infrastructure","infrastructure","
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"","","","x"
"IT Infrastructure","infrastructure","
`Study by Lu, Huang and Heng (2006) reveals seven CSFs for the IOS, namely, intensive stimulation, shared vision, crossorganizational implementation team, high integration with internal information systems, inter-organizational BPR, advanced legacy information system and infrastructure and shared industry standard.'
","SethEtAl2015DeveloModelSucces",251,"","","","x"
"IT Infrastructure","infrastructure","
`● IT infrastructure ● System Training and knowledge transfer ● Over-dependence on detailed and heavy customization ● High turnover rate of project team members ● Business process re-engineering ● User's resistance to transform ● ERP system misfit Considering these critical factors, specifically affecting the agricultural business sectors in Malaysia, there are a few possible suggestions proposed.'
","ShukorEtAl2020EnterpResourPlanni",2055,"","","","x"
"IT Infrastructure","network","
`This unique network architecture provides expert care to our patients and a level of confidence in receiving the latest medicine has to offer.'
","GargEtAl2014CriticSuccesFactor",407,"","","","x"
"IT Infrastructure","network","
`The most widely cited CSFs were found to be: security, project management, communication, compliance, network and the reaction of organization.'
","HuangEtAl2021CriticSuccesFactor",4685,"","","","x"
"IT Infrastructure","network","
`Discussion From the systematic literature review conducted into Cloud ERP implementation, we found that the top five most widely cited CSFs for the successful implementation of Cloud ERP are: security, project management, communication, compliance, and network.'
","HuangEtAl2021CriticSuccesFactor",4689,"","","","x"
"IT Infrastructure","network","
`The technical factors that are critical to organizations in their adoption decision of Internet-based inter-organizational information systems (IBIS) was also studied by Soliman and Janz (2004) and Bouchbout and Alimazighi (2008) and suggested establishing costs, network reliability, data security, scalability and complexity as main factors that significantly affect the adoption decision of IBIS.'
","SethEtAl2015DeveloModelSucces",252,"","","","x"
"Knowledge Transfer","knowledge transfer","
`Other factors found to affect the effectiveness of ERP system implementation, includes external consultant support, knowledge transfer, and the technical aspects knowledge transfers, all of which are essential during an implementation process.'

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","AliEtAl2017ERPSystemImplem",673,"","x","",""
"Knowledge Transfer","knowledge transfer","
`This resulted in the team members being overloaded which resulted in a high
staff turnover rate, ineffective knowledge transfer, and political problems
occurred which hindered the implementation process.'
","CoşkunEtAl2022ERPFailurSystem",14,"","x","",""
"Knowledge Transfer","knowledge transfer","
`However, as part of this relationship, it is imperative to arrange for
knowledge transfer from the consultant to the company (Al-Mashari et al., 2003)
so as to decrease the dependency on the vendor/consultant (Skok and Legge,
2002).'
","FinneyEtAl2007ERPImplemCompil",338,"","x","",""
"Knowledge Transfer","knowledge transfer","
`The findings also support the proposed hypothesis that training and knowledge
transfer has a positive impact on SCMIS implementation success (H4b), so
organization should arrange effective training for the end users of SCMIS for
smooth implementation of the system.'
","SethEtAl2015DeveloModelSucces",258,"","x","",""
"Knowledge Transfer","knowledge transfer","
`● IT infrastructure ● System Training and knowledge transfer ● Over-dependence
on detailed and heavy customization ● High turnover rate of project team members
● Business process re-engineering ● User's resistance to transform ● ERP system
misfit Considering these critical factors, specifically affecting the
agricultural business sectors in Malaysia, there are a few possible suggestions
proposed.'
","ShukorEtAl2020EnterpResourPlanni",2055,"","x","",""
"Leadership","leadership","
`Among the factors influencing ERP system acceptance, Elkhani et al. (2014) find
transformational leadership and self-efficacy influence the perceived usefulness
of the system.'
","AliEtAl2017ERPSystemImplem",680,"","","","x"
"Leadership","leadership","
`In addition, transformation leadership also influences the perceived ease of
use via incorporating self-efficacy measures.'
","AliEtAl2017ERPSystemImplem",680,"","","","x"
"Leadership","leadership","
`The respondents from the survey showed that the overarching issue is that of
leadership and the role it has to play in driving the creation of ICT-enabled
value and competitiveness.'
","Chan2013AustraQuantiSurvey",107,"","","","x"
"Leadership","leadership","
`Effective leadership is needed in order to achieve the desirable goals [35].'
","ChatzoglouEtAl2016AnteceOutcomERP",1255,"","","","x"
"Leadership","leadership","
`Sarker and Lee (2003) empirically proved that strong and committed leadership
at the top management level is essential to the success of an ERP
implementation.'
","FinneyEtAl2007ERPImplemCompil",335,"","","","x"
"Leadership","leadership","
`Social capital theory is used for the Cloud ERP context because it suggests
that the support and commitment from the responsible leadership is crucial to
set the environment in the organization.'
","HuangEtAl2021CriticSuccesFactor",4690,"","","","x"
"Leadership","leadership","
`Top management support is important for providing leadership and allocating
resources for such large, complex and expensive projects.'
","KhattakEtAl2013InvestCriticSucces",65,"","","","x"
"Leadership","leadership","
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`Project team: consultant, leadership and champion The ERP team should consist
of the best people in the organization.'
","OsmanEtAl2019ERPCriticSucces",37,"","","","x"
"Leadership","leadership","
`Therefore, the consultant should have multiple skills covering functional,
technical issues and in-depth knowledge of the software[17]- [19] Additionally,
project manager appointed should be experienced, mix of business and IT
knowledge, strong leadership skills and have adequate authority to manage all
aspects of the project.'
","OsmanEtAl2019ERPCriticSucces",37,"","","","x"
"Leadership","leadership","
`Top management This concept is referred to the need of having committed
leadership at the top management level, Successful ERP implementation very much
depends upon active and persistent top management involvement, and the
importance of top management support in each step in all company levels is
crucial[20].'
","OsmanEtAl2019ERPCriticSucces",37,"","","","x"
"Leadership","leadership","
`They should also be able to anticipate glitches that might occur; this
naturally puts a great demand on their knowledge regarding ERP systems and the
implementation process strategic planning and leadership but also of technical
expertise.'
","OsmanEtAl2019ERPCriticSucces",37,"","","","x"
"Leadership","leadership","
`The factors identified were management and leadership, visioning and planning,
ERP package selection, communication process management, training and education,
project management, legacy systems management, system integration, system
testing, cultural and structural changes, and performance evaluation and
management.'
","Rabaai2009IdentiCriticSucces",6,"","","","x"
"Leadership","leadership","
`Additionally, Sarker and Lee (2003) empirically proved that strong and
committed leadership at the top management level is essential to the success of
an ERP implementation.'
","Rabaai2009IdentiCriticSucces",7,"","","","x"
"Leadership","leadership","
`Glaser (1999) claimed that senior management must demonstrate their commitment
by showing strong leadership, limiting the initial scope of the project, and
working towards achieving an early success.'
","Rabaai2009IdentiCriticSucces",7,"","","","x"
"Leadership","leadership","
`However, the author posited that the main reason for an ERP implementation
failure stems from a lack of understanding of the project and an inability to
provide guidance and adequate leadership to project team members.'
","Rabaai2009IdentiCriticSucces",8,"","","","x"
"Leadership","leadership","
`Harris shows the prescience of Musselin's (2005) analysis of an agenda that
``weakens deliberative bodies and collegial decision making'' in favour of
developing executive leadership.'
","RabaaiEtAl2016SuccesFactorEnterp",49,"","","","x"
"Leadership","leadership","
`Additionally, Sarker and Lee (2003) empirically proved that strong and
committed leadership at the top management level is essential to the success of
an ERP implementation.'
","RabaaiEtAl2016SuccesFactorEnterp",50,"","","","x"
"Leadership","leadership","
`However, the author posited that the main reason for an ERP implementation
failure stems from a lack of understanding of the project and an inability to

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provide guidance and adequate leadership to project team members.'
",”RabaaiEtAl2016SuccesFactorEnterp”,52,””,””,””,”x”
”Leadership”,”leadership”,”
`Item Description 1 top management support 25 application project costs 2
effective communication 26 interdepartmental cooperation 3 interdepartmental
communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor
relations 5 business plan-vision 29 ongoing vendor support 6 change management
30 use of vendor's development tools 7 education on new business process 31
organizational characteristics 8 user training& education 32 employee / team
morale-motivation 9 user acceptance 33 leadership of the project team 10
managing cultural change 34 project team competence- composition 11 business
process reengineering 35 ERP team work 12 customization 36 steering committee 13
minimal customization 37 empowered decision makers 14 software configuration 38
use of consultants 15 data accuracy 39 obtain business analysts 16 data
analysis- conversion 40 project champion 17 software development testing &
troubleshooting 41 appropriate business-legacy systems 18 implementation
strategies 42 data integration 19 ERP package selection 43 scope & vision based
performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of
performance 21 IT infrastructure 45 post imple...'
",”SaygiliEtAl2017EndUsersPercep”,64,””,””,””,”x”
”Leadership”,”leadership”,”
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation
strategies (23) Management of expectations (24) Project management (32) Employee
/ team morale & motivation (33) Leadership of the project team (34) Project team
competence and composition 2 (14) Software configuration (21) IT infrastructure
(28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor
development tools (38) Use of consultants 3 (40) Project champion (46) National
culture (47) Country related functional requirements (48) Centralization 4 (1)
Top management support (2) Effective communication (3) Interdepartmental
communication (4) Clear goals and objectives (5) Business plan & vision 5 (15)
Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7)
Education on new business processes (8) User training and education (9) User
acceptance (10) Managing cultural change this result maybe, end-users resist
changing business processes instead they prefer customizations in ERP software.'
",”SaygiliEtAl2017EndUsersPercep”,67,””,””,””,”x”
”Leadership”,”leadership”,”
`The sub-factors represent the fundamental management functions introduced by
Draft (1991) planning (implementation strategies, project management),
organizing (business process reengineering, management of expectations, project
team competence and composition) and leading (leadership of project team,
employee / team morale and motivation).'
",”SaygiliEtAl2017EndUsersPercep”,68,””,””,””,”x”
”Leadership”,”leadership”,”
`The results supported the findings of Sarker & Lee (2003) who stated that
strong and committed leadership, open and honest communication, and a balanced
and empowered implementation team are necessary conditions/precursors for
successful ERP application.'
",”SaygiliEtAl2017EndUsersPercep”,68,””,””,””,”x”
”Leadership”,”leadership”,”
`Accordingly, only strong and committed leadership can be empirically
established as a necessary condition.'
",”SaygiliEtAl2017EndUsersPercep”,68,””,””,””,”x”
”Leadership”,”leadership”,”
`Have a leader in the project team with strong leadership skills as well as
business, technical and personal managerial competencies.'
",”SaygiliEtAl2017EndUsersPercep”,74,””,””,””,”x”
”Leadership”,”leadership”,”
`Have a project champion who performs the crucial functions like leadership,
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facilitation, and marketing the project to the users.'
","SaygiliEtAl2017EndUsersPercep",75,"","","","x"
"Leadership","leadership","
`Studies have been conducted on the need of having a project leader (Bradley, 2008; Ngai et al., 2008), who should possess strong leadership skills (Mandal & Gunasekaran, 2003) as well as business, technical and personal managerial competencies (Kraemmergaard & Rose, 2002).'
","SethEtAl2015DeveloModelSucces",252,"","","","x"
"Leadership","leadership","
`Moreover, ERP projects fail due to errors in managing the following dimensions: leadership (42%), organizational and cultural (27%), human and people (23%), technology and other issues (8%) [Waters 2006].'
","ShaulEtAl2013CriticSuccesFactor",2,"","","","x"
"Leadership","leadership","
`To overcome this misfit, companies can establish a framework that takes the primary failures of poor leadership, poor project management, poor data quality, poor training, and users' resistance into consideration.'
","ShaulEtAl2013CriticSuccesFactor",18,"","","","x"
"Leadership","leadership","
`A lack of leadership can jeopardize implementation considerably since it negatively influences the roles and activities of other stakeholders [Ngai et al. 2008].'
","ShaulEtAl2013CriticSuccesFactor",19,"","","","x"
"Leadership","leadership","
`Ettlie et al. [2005] argued, based on social learning theory, that leadership through exemplary action promotes the successful adoption of discontinuous change, especially when the adopting firm's general managers demonstrate cohesive support for a new ERP system.'
","ShaulEtAl2013CriticSuccesFactor",19,"","","","x"
"Leadership","leadership","
`Therefore, it is crucial to appoint a senior project champion (e.g., CEO) to take on the leadership role of the ERP implementation, whose job it is to bring respected and active contributing top management promoters into the system selection decision process rather than relying on the vendor's or consultant's efforts to overcome resistance.'
","ShaulEtAl2013CriticSuccesFactor",19,"","","","x"
"Legacy Systems (-)","legacy systems","
`ERP systems are often implemented to address issues of organisational failure in information coordination due to the application of legacy systems (Nah et al., 2003).'
","AliEtAl2017ERPSystemImplem",667,"","","","x"
"Legacy Systems (-)","legacy systems","
`These legacy systems usually offer ageing solutions that are difficult to maintain, and no longer meet organisational needs (Bradley, 2008).'
","AliEtAl2017ERPSystemImplem",667,"","","","x"
"Legacy Systems (-)","legacy systems","
`Important CSFs identified are: ERP team work and composition, top management support, business plan and vision, effective communication, project management, project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and evaluation of performance.'
","AliEtAl2017ERPSystemImplem",675,"","","","x"
"Legacy Systems (-)","legacy systems","
`The factors in the order of ERP system importance are: implementation in LEs • lack of top management commitment; • ineffective communication; • insufficient training; • lack of user support; • poor project management; • relying on legacy systems; • inter-departmental conflicts; • composition of project team; • failure in redesigning business processes; and • lack of clarity about required

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changes.'
","AliEtAl2017ERPSystemImplem",681,"","","","x"
"Legacy Systems (-)","legacy systems","
`This often results in key organisational changes, especially in relation to
questions of how to integrate ERP systems, what to do with legacy systems, and
how organisational business processes should be revised.'
","AliEtAl2017ERPSystemImplem",682,"","","","x"
"Legacy Systems (-)","legacy systems","
`Lesser, but still important CSFs are, having a good business plan, vision,
having a project champion, appropriate business and legacy systems, change
management programmes, culture, BPR, minimum customisation, software
development, testing, trouble shooting, monitoring, and the evaluation of
performance (Markus, Axline, Petrie and Tanis, 2000; Bancroft et al., 1998;
Bingi et al., 1999; Nah et al., 2001; Umble et al., 2003; Ehie and Madsen, 2005;
Sarkar and Lee, 2003; Umble et al., 2003; Kim et al., 2005; Motwani et al.,
2005; Nah and Delgado, 2006; Maguire et al., 2010).'
","AliEtAl2017ERPSystemImplem",682,"","","","x"
"Legacy Systems (-)","legacy systems","
`The most common causes of ERP implementation failures are a combination of poor
planning and high software customisation (Scheer and Habbermann, 2000), lack of
top management commitment; ineffective communication; insufficient training;
lack of user support, poor project management, relying on legacy systems, inter-
departmental conflicts, poor composition of project teams, failure in
redesigning business processes and, lack of clarity about required changes.'
","AliEtAl2017ERPSystemImplem",682,"","","","x"
"Legacy Systems (-)","legacy systems","
`The appropriate management of IT legacy systems is a key success factor,
whether it is replacement or development of interfaces (Lee et al., 2003).'
","BarthEtAl2019CriticSuccesFactor",659,"","","","x"
"Legacy Systems (-)","legacy systems","
`Further success factors for ERP implementation projects, such as the selection
of a project champion, the building of a business case or the appropriate
management of legacy systems were rated as not very significant for upgrade
projects by the interviewees.'
","BarthEtAl2019CriticSuccesFactor",668,"","","","x"
"Legacy Systems (-)","legacy systems","
`Gyampah (2007) explained this negative relationship by the usage of legacy
systems before the implementation of ERP systems, because after using legacy
systems, learning a harder system is not an attractive issue for system users.'
","BasogluEtAl2007OrganiAdoptiEnterp",84,"","","","x"
"Legacy Systems (-)","legacy systems","
`Mabert et al. (2003) findings indicate that the most important motivations for
implementing an ERP system are to replace legacy systems and to standardize
systems.'
","GargEtAl2014FactorInflueERP",432,"","","","x"
"Legacy Systems (-)","legacy systems","
`All users move to the new system and manual/legacy systems are discontinued.'
","GargEtAl2014FactorInflueERP",440,"","","","x"
"Legacy Systems (-)","legacy systems","
`The data residing in the legacy systems needs to be migrated to ERP system.'
","GargEtAl2014FactorInflueERP",440,"","","","x"
"Legacy Systems (-)","legacy systems","
`According to the literature, the most studied factors were: Top Management
Support, Effective Communication, Training, and Education, Business plan and
vision, Project Management, BPR management, Change Management, Project team
Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation,
Technological Infrastructure, Legacy systems consideration.'
","MahrazEtAl2020CompilAnalysCritic",112,"","","","x"
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"Legacy Systems (-)","legacy systems","
`Among these factors, ERP Choices, Technological Infrastructure, Legacy systems consideration are related to the technological dimension, while the other factors are more related to the organizational dimension.'
","MahrazEtAl2020CompilAnalysCritic",112,"","","","x"
"Legacy Systems (-)","legacy systems","
`Technical requirements of the implementation may also change due to a new version of the software released which may create a temporal complexity challenges as well; Legacy systems Consideration: There must also be consideration of the current legacy system in place as this will be a good indicator of the nature and scale of potential problems.'
","MahrazEtAl2020CompilAnalysCritic",114,"","","","x"
"Legacy Systems (-)","legacy systems","
`The findings of our study reveal that `appropriate business and IT legacy systems', `business plan/vision/goals/justification', `business process reengineering', `change management culture and programme', `communication', `ERP teamwork and composition', `monitoring and evaluation of performance', `project champion', `project management', `software/system development, testing and troubleshooting', `top management support', `data management', `ERP strategy and implementation methodology', `ERP vendor', `organizational characteristics', `fit between ERP and business/process', `national culture' and `country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.'
","NgaiEtAl2008ExaminCriticSucces",548,"","","","x"
"Legacy Systems (-)","legacy systems","
`Appropriate business and IT legacy systems According to Holland and Light [28], `legacy systems encapsulated the existing business processes, organization structure, culture, and information technology'.'
","NgaiEtAl2008ExaminCriticSucces",551,"","","","x"
"Legacy Systems (-)","legacy systems","
`It is necessary to evaluate the current legacy system, as greater and more complex legacy systems require more technological and organizational changes during the transitional period of ERP implementation [28,51].'
","NgaiEtAl2008ExaminCriticSucces",551,"","","","x"
"Legacy Systems (-)","legacy systems","
`Nah et al. [51] pointed out that to be successful, ERP implementation efforts must overcome issues of complexity arising from business and IT legacy systems.'
","NgaiEtAl2008ExaminCriticSucces",551,"","","","x"
"Legacy Systems (-)","legacy systems","
`Software may need to be developed to integrate the legacy systems and the ERP systems.'
","NgaiEtAl2008ExaminCriticSucces",556,"","","","x"
"Legacy Systems (-)","legacy systems","
`Since ERP implementation involves a complex transition from legacy systems and business processes to an integrated infrastructure and common business process throughout a company, it is necessary to upgrade or revamp the poorly current IT infrastructure.'
","OsmanEtAl2019ERPCriticSucces",39,"","","","x"
"Legacy Systems (-)","legacy systems","
`2 Legacy systems, in this study context, are defined as applications (often standalone) that have been built using a prior era's technology and been in the organisation for many years.'
","Rabaai2009IdentiCriticSucces",1,"","","","x"
"Legacy Systems (-)","legacy systems","
`Eleven critical factors were identified, such as ERP teamwork and composition, change management program and culture, top management support, business plan and vision, business process reengineering (BPR) and minimum customisation, effective communications, project management, software development, testing and

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troubleshooting, monitoring and evaluating performance, project champion, and
appropriate business and IT legacy systems.'
","Rabaai2009IdentiCriticSucces",6,"","","","x"
"Legacy Systems (-)","legacy systems","
`The factors identified were management and leadership, visioning and planning,
ERP package selection, communication process management, training and education,
project management, legacy systems management, system integration, system
testing, cultural and structural changes, and performance evaluation and
management.'
","Rabaai2009IdentiCriticSucces",6,"","","","x"
"Legacy Systems (-)","legacy systems","
`Their recommendation was that QUT replace its legacy systems with common
integrated systems.'
","RabaaiEtAl2009ERPSystemHigher",460,"","","","x"
"Legacy Systems (-)","legacy systems","
`Disruption to staff and resistance to received `best practices', together with
required training, data mapping, customisations and their support, complexity of
integration with remaining legacy systems are all commonly reported, and are
often ongoing issues post-implementation.'
","RabaaiEtAl2015CulturPerspeon",86,"","","","x"
"Legacy Systems (-)","legacy systems","
`Disruption to staff and resistance to received ``best practices'', together
with required training, data mapping, customizations and their support,
complexity of integration with remaining legacy systems are all commonly
reported, and are often ongoing issues post-implementation.'
","RabaaiEtAl2016SuccesFactorEnterp",46,"","","","x"
"Legacy Systems (-)","legacy systems","
`Although classed as technology related, experience shows that business
practices developed around legacy systems can cause the biggest challenge to a
successful enterprise system implementation, and despite a product's
configurability, they can still contain many non-modifiable functionalities that
may or may not be applicable in a particular university (Yakovlev, 2001) .'
","RabaaiEtAl2016SuccesFactorEnterp",57,"","","","x"
"Legacy Systems (-)","legacy systems","
`IT staff too may have a significant learning overhead, an inadequate budget for
the training required, an extra learning curve (with an ongoing dependence on
consultants) significant extra work necessitated while legacy systems remain
critical.'
","RabaaiEtAl2016SuccesFactorEnterp",58,"","","","x"
"Legacy Systems (-)","legacy systems","
`Certainly efficiency is desirable and several CSFs proved relevant in HES -
mainly in efficient service delivery, IT support, easier access to reliable
information by integrating disparate legacy systems and reengineered business
processes, and data integrity.'
","RabaaiEtAl2016SuccesFactorEnterp",58,"","","","x"
"Legacy Systems (-)","legacy systems","
`Critical success factors identified in Turkish studies Author (s) Critical
Success Factors Baskak& Cetisli (2003) Top management support, business plan and
vision, ERP teamwork, ERP package selection, change management, user training
and education, effective communication, project management, data integration,
software testing and troubleshooting, appropriate legacy systems, monitoring and
evaluation of performance.'
","SaygiliEtAl2017EndUsersPercep",62,"","","","x"
"Legacy Systems (-)","legacy systems","
`Item Description 1 top management support 25 application project costs 2
effective communication 26 interdepartmental cooperation 3 interdepartmental
communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor
relations 5 business plan-vision 29 ongoing vendor support 6 change management
```

30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","","","x"
"Legacy Systems (-)","legacy systems","
`Develop software to integrate legacy systems and ERP systems when necessary.'
","SaygiliEtAl2017EndUsersPercep",74,"","","","x"
"Legacy Systems (-)","legacy systems","
`Evaluate the appropriateness of the current legacy systems.'
","SaygiliEtAl2017EndUsersPercep",75,"","","","x"
"Legacy Systems (-)","legacy systems","
`Fifth, some legacy systems are not replaced, and new in-house systems continue to be developed despite the fact that companies have adopted ERP solutions because of the risks and time involved in replacing these legacy systems and current processes [Tanriverdi et al. 2007].'
","ShaulEtAl2013CriticSuccesFactor",18,"","","","x"
"Legacy Systems (-)","legacy systems","
`Second, consider data analysis decisions, activities, responsibilities, priorities, implemented processes, legacy systems, methods, and test plans.'
","ShaulEtAl2013CriticSuccesFactor",19,"","","","x"
"Management Changes (-)","management changes","
`Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline Organisational resistance Lack of organisational commitment Poor data accuracy Limited user involvement Mismatch between organisation requirements and functionalities offered Lack of readiness for integration Lack of focus on user education and training Excessive customisation Inadequate organisational analysis Costs Project duration Technical challenges Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.'
","AliEtAl2017ERPSystemImplem",681,"","","","x"
"Morale & Motivation","morale","
`Bingi et al. (1999) extended this list to include, implementation time and cost, ERP vendors, selecting right employees, and employee morale.'
","AliEtAl2017ERPSystemImplem",674,"","x","",""
"Morale & Motivation","morale","
`So, it is crucial for organizations to exploit proper mechanisms to recruit and preserve qualified employees, and nurture and maintain a high level of employees' morale and motivation among them [36,71-75].'
","AmidEtAl2012IdentiClassiERP",233,"","x","",""
"Morale & Motivation","morale","
`Here, lack of employees' morale and motivation is considered as one of the most important failure factors, which intensively relates to governmental structure of large Iranian organization by high levels of bureaucracy and heavy regulations.'
","AmidEtAl2012IdentiClassiERP",233,"","x","",""
"Morale & Motivation","morale","
`The management of the firm can boost the morale of the employees and motivate them so that they accept the ERP systems and use them in an effective manner for

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the benefit of the organization (Russo and Brandt, 1999).'
","BazhairEtAl2015FactorChangeManage",51,"","","x",""
"Morale & Motivation","morale","
`This CSF is related to the need for the project manager/champion to nurture and
maintain a high level of employee morale and motivation during the project
(Trimmer et al., 2002; Willcocks and Stykes, 2000; Bingi et al., 1999).'
","FinneyEtAl2007ERPImplemCompil",337,"","x","",""
"Morale & Motivation","morale","
`Frequency analysis of CSFs in literature CSF category Top management commitment
and support Change management BPR and software configuration Training and job
redesign Project team: the best and brightest Implementation strategy and
timeframe Consultant selection and relationship Visioning and planning Balanced
team Project champion Communication plan IT infrastructure Managing cultural
change Post-implementation evaluation Selection of ERP Team morale and
motivation Vanilla ERP Project management Troubleshooting/crises management
Legacy system consideration Data conversion and integrity System testing Client
consultation Project cost planning and management Build a business case
Empowered decision makers Number of instances cited in literature 25 25 23 23 21
17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often
focused on only a specific aspect of the implementation process or a specific
CSF.'
","FinneyEtAl2007ERPImplemCompil",340,"","x","",""
"Morale & Motivation","morale","
`So, it is crucial for organizations to exploit proper mechanisms to recruit and
preserve qualified employees, and nurture and maintain a high level of
employees' morale and motivation among them (Kim, Lee, & Gosain, 2005;
Metaxiotis, Zafeiropoulos, Nikolinakou, & Psarras, 2005; Skok & Legge, 2002;
Umble, et al., 2003; Verville, Bernadas, & Halingten, 2005; Willcocks & Sykes,
2000).'
","RavasanEtAl2014FCM-BaDynamiModeli",45,"","x","",""
"Morale & Motivation","morale","
`Item Description 1 top management support 25 application project costs 2
effective communication 26 interdepartmental cooperation 3 interdepartmental
communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor
relations 5 business plan-vision 29 ongoing vendor support 6 change management
30 use of vendor's development tools 7 education on new business process 31
organizational characteristics 8 user training& education 32 employee / team
morale-motivation 9 user acceptance 33 leadership of the project team 10
managing cultural change 34 project team competence- composition 11 business
process reengineering 35 ERP team work 12 customization 36 steering committee 13
minimal customization 37 empowered decision makers 14 software configuration 38
use of consultants 15 data accuracy 39 obtain business analysts 16 data
analysis- conversion 40 project champion 17 software development testing &
troubleshooting 41 appropriate business-legacy systems 18 implementation
strategies 42 data integration 19 ERP package selection 43 scope & vision based
performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of
performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","x","",""
"Morale & Motivation","morale","
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation
strategies (23) Management of expectations (24) Project management (32) Employee
/ team morale & motivation (33) Leadership of the project team (34) Project team
competence and composition 2 (14) Software configuration (21) IT infrastructure
(28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor
development tools (38) Use of consultants 3 (40) Project champion (46) National
culture (47) Country related functional requirements (48) Centralization 4 (1)
Top management support (2) Effective communication (3) Interdepartmental
communication (4) Clear goals and objectives (5) Business plan & vision 5 (15)
```

Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"","x","",""
"Morale & Motivation","morale","
`The sub-factors represent the fundamental management functions introduced by Draft (1991) planning (implementation strategies, project management), organizing (business process reengineering, management of expectations, project team competence and composition) and leading (leadership of project team, employee / team morale and motivation).'
","SaygiliEtAl2017EndUsersPercep",68,"","x","",""
"Morale & Motivation","motivation","
`So, it is crucial for organizations to exploit proper mechanisms to recruit and preserve qualified employees, and nurture and maintain a high level of employees' morale and motivation among them [36,71-75].'
","AmidEtAl2012IdentiClassiERP",233,"","x","",""
"Morale & Motivation","motivation","
`Here, lack of employees' morale and motivation is considered as one of the most important failure factors, which intensively relates to governmental structure of large Iranian organization by high levels of bureaucracy and heavy regulations.'
","AmidEtAl2012IdentiClassiERP",233,"","x","",""
"Morale & Motivation","motivation","
`This CSF is related to the need for the project manager/champion to nurture and maintain a high level of employee morale and motivation during the project (Trimmer et al., 2002; Willcocks and Stykes, 2000; Bingi et al., 1999).'
","FinneyEtAl2007ERPImplemCompil",337,"","x","",""
"Morale & Motivation","motivation","
`Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.'
","FinneyEtAl2007ERPImplemCompil",340,"","x","",""
"Morale & Motivation","motivation","
`Some of the interviewee indicated the absence of adequate incentives like performance recognition, sense of achievement or even monetary rewards for motivational purpose as the reasons of devoting low percentage of their time by the PMs to the ERP system implementation project.'
","KhattakEtAl2013InvestCriticSucces",53,"","","","x"
"Morale & Motivation","motivation","
`Therefore, this infers that the presence of a champion in a significant role may be useful for providing guidance & motivation on the project but it cannot essentially guarantee the ERP project implementation success.'
","KhattakEtAl2013InvestCriticSucces",59,"","","","x"
"Morale & Motivation","motivation","
`So, it is crucial for organizations to exploit proper mechanisms to recruit and preserve qualified employees, and nurture and maintain a high level of employees' morale and motivation among them (Kim, Lee, & Gosain, 2005;

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Metaxiotis, Zafeiropoulos, Nikolinakou, & Psarras, 2005; Skok & Legge, 2002;
Umble, et al., 2003; Verville, Bernadas, & Halingten, 2005; Willcocks & Sykes,
2000).'
","RavasanEtAl2014FCM-BaDynamiModeli",45,"","x","",""
"Morale & Motivation","motivation","
`Item Description 1 top management support 25 application project costs 2
effective communication 26 interdepartmental cooperation 3 interdepartmental
communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor
relations 5 business plan-vision 29 ongoing vendor support 6 change management
30 use of vendor's development tools 7 education on new business process 31
organizational characteristics 8 user training& education 32 employee / team
morale-motivation 9 user acceptance 33 leadership of the project team 10
managing cultural change 34 project team competence- composition 11 business
process reengineering 35 ERP team work 12 customization 36 steering committee 13
minimal customization 37 empowered decision makers 14 software configuration 38
use of consultants 15 data accuracy 39 obtain business analysts 16 data
analysis- conversion 40 project champion 17 software development testing &
troubleshooting 41 appropriate business-legacy systems 18 implementation
strategies 42 data integration 19 ERP package selection 43 scope & vision based
performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of
performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","x","",""
"Morale & Motivation","motivation","
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation
strategies (23) Management of expectations (24) Project management (32) Employee
/ team morale & motivation (33) Leadership of the project team (34) Project team
competence and composition 2 (14) Software configuration (21) IT infrastructure
(28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor
development tools (38) Use of consultants 3 (40) Project champion (46) National
culture (47) Country related functional requirements (48) Centralization 4 (1)
Top management support (2) Effective communication (3) Interdepartmental
communication (4) Clear goals and objectives (5) Business plan & vision 5 (15)
Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7)
Education on new business processes (8) User training and education (9) User
acceptance (10) Managing cultural change this result maybe, end-users resist
changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"","x","",""
"Morale & Motivation","motivation","
`The sub-factors represent the fundamental management functions introduced by
Draft (1991) planning (implementation strategies, project management),
organizing (business process reengineering, management of expectations, project
team competence and composition) and leading (leadership of project team,
employee / team morale and motivation).'
","SaygiliEtAl2017EndUsersPercep",68,"","x","",""
"Organisational Change","change management","
`They rate CSFs by a degree of importance during ERP implementation as follows:
(1) top management support; (2) project team competence; (3) inter-departmental
cooperation; (4) clear goals and objectives; (5) project management; (6) inter-
departmental communication; (7) management of expectation; (8) project champion;
(9) vendors' support; (10) careful package selection; (11) data analysis and
conversion; (12) dedicated resources; (13) use of steering committee; (14) user
training on software; (15) education on new business processes; (16) BPR; (17)
minimal customisation; (18) architecture choices; (19) change management; (20)
partnership with vendors; (21) use of vendors' tool; and (22) use of
consultant.'
","AliEtAl2017ERPSystemImplem",674,"x","x","x","x"
"Organisational Change","change management","
`Important CSFs identified are: ERP team work and composition, top management
```

support, business plan and vision, effective communication, project management,
project champion, appropriate business and legacy systems, change management
programmes, culture, BPR, minimum customisation, software development, testing,
trouble shooting, monitoring, and evaluation of performance.'
",”AliEtAl2017ERPSystemImplem”,675,”x”,”x”,”x”,”x”
”Organisational Change”,”change management”,”
`CSFs identified for successful implementation are: a clear understanding of
strategic goals, top management commitment and support, organisational change
management strategy, good implementation team, data accuracy, extensive
education and training, focussed performance measures, and multi-site issues.'
",”AliEtAl2017ERPSystemImplem”,675,”x”,”x”,”x”,”x”
”Organisational Change”,”change management”,”
`They identify causes of ERP implementation failure as excessive customisation,
dilemma of internal integration, poor understanding of business implications and
requirements, lack of change management strategy, poor data quality,
misalignment of IT with business, hidden costs, limited training, and lack of
top management support.'
",”AliEtAl2017ERPSystemImplem”,681,”x”,”x”,”x”,”x”
”Organisational Change”,”change management”,”
`Lesser, but still important CSFs are, having a good business plan, vision,
having a project champion, appropriate business and legacy systems, change
management programmes, culture, BPR, minimum customisation, software
development, testing, trouble shooting, monitoring, and the evaluation of
performance (Markus, Axline, Petrie and Tanis, 2000; Bancroft et al., 1998;
Bingi et al., 1999; Nah et al., 2001; Umble et al., 2003; Ehie and Madsen, 2005;
Sarkar and Lee, 2003; Umble et al., 2003; Kim et al., 2005; Motwani et al.,
2005; Nah and Delgado, 2006; Maguire et al., 2010).'
",”AliEtAl2017ERPSystemImplem”,682,”x”,”x”,”x”,”x”
”Organisational Change”,”change management”,”
`The findings of this research shows that change management activities within
the organization can be helpful in increasing ERP acceptance within the firm.'
",”BazhairEtAl2015FactorChangeManage”,41,”x”,”x”,”x”,”x”
”Organisational Change”,”change management”,”
`The results of this study show that ``Managers and employees readiness to
change'', ``Top management Support'', ``Business Process Reengineering'',
``Software and user interface development'' and ``Change management'' are five
top critical success factors.'
",”Chan2013AustraQuantiSurvey”,109,”x”,”x”,”x”,”x”
”Organisational Change”,”change management”,”
`Frequency analysis of CSFs in literature CSF category Top management commitment
and support Change management BPR and software configuration Training and job
redesign Project team: the best and brightest Implementation strategy and
timeframe Consultant selection and relationship Visioning and planning Balanced
team Project champion Communication plan IT infrastructure Managing cultural
change Post-implementation evaluation Selection of ERP Team morale and
motivation Vanilla ERP Project management Troubleshooting/crises management
Legacy system consideration Data conversion and integrity System testing Client
consultation Project cost planning and management Build a business case
Empowered decision makers Number of instances cited in literature 25 25 23 23 21
17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often
focused on only a specific aspect of the implementation process or a specific
CSF.'
",”FinneyEtAl2007ERPImplemCompil”,340,”x”,”x”,”x”,”x”
”Organisational Change”,”change management”,”
`Findings - Results suggest that 9 critical failure items namely Inadequate
resources, Poor User involvement, Users' resistance to change, High Attrition
rate of project team members, Lack of top management commitment, Poor project
management, Inadequate project team composition, Ineffective organizational

```
change management and Unrealistic project scheduling have a high impact on ERP
implementation and therefore deserve serious attention in the process of ERP
implementation.'
","GargEtAl2013EmpiriStudyon",496,"x","x","x","x"
"Organisational Change","change management","
`Pareto chart per factors for ERP failure Pareto analysis suggest that nine
critical failure items namely inadequate resources, poor user involvement,
users' resistance to change, higher attrition rate of project team members, Lack
of top management commitment, Poor project management, inadequate project team
composition, ineffective organizational change management, unrealistic project
scheduling have a high impact on ERP implementation and therefore deserve
serious attention in the process of ERP implementation.'
","GargEtAl2013EmpiriStudyon",507,"x","x","x","x"
"Organisational Change","change management","
`P10: The cases partially supported this proposition because not in all
successful cases, although proficient to changes i.e. the change management
culture was prevailing in the past, yet no attention was given to devise a
proper change management strategy particularly regarding the ERP system project
implementation but still the implementation was gone successful.'
","KhattakEtAl2013InvestCriticSucces",60,"x","x","x","x"
"Organisational Change","change management","
`The research concludes that: (1) Quality (adequacy) and quantity of training
and education of personnel/users, role and effectiveness of management in
reducing the users' resistance, use of steering committee for control purpose,
top management support or involvement, clearly specified goals/objectives/scope
regarding ERP system, ease of system's use and users' acceptance, vendor's
support, project management, effective communication among the organizational
members and a balanced team for ERP implementation are practically considered by
the successful enterprises in China while planning and going for the
implementation of the ERP system and are thus critical for the success of ERP
systems implementation projects, ignoring of which may cause implementation
failure in the Chinese organizations; (2) Some of the factors deemed imperative
for ERP systems implementation success in the literature like; selection of a
right full time project manager with extensive experience, presence/existence of
a champion, integration of business planning with IT/ERP planning, use and role
of consultant, change management strategy and programs, competency in use of IT
and IT infrastructure, business...'
","KhattakEtAl2013InvestCriticSucces",68,"x","x","x","x"
"Organisational Change","change management","
`According to the literature, the most studied factors were: Top Management
Support, Effective Communication, Training, and Education, Business plan and
vision, Project Management, BPR management, Change Management, Project team
Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation,
Technological Infrastructure, Legacy systems consideration.'
","MahrazEtAl2020CompilAnalysCritic",112,"x","x","x","x"
"Organisational Change","change management","
`The findings of our study reveal that `appropriate business and IT legacy
systems', `business plan/vision/goals/justification', `business process
reengineering', `change management culture and programme', `communication', `ERP
teamwork and composition', `monitoring and evaluation of performance', `project
champion', `project management', `software/system development, testing and
troubleshooting', `top management support', `data management', `ERP strategy and
implementation methodology', `ERP vendor', `organizational characteristics',
`fit between ERP and business/process', `national culture' and `country-related
functional requirement' were the commonly extracted factors across these 10
countries/regions.'
","NgaiEtAl2008ExaminCriticSucces",548,"x","x","x","x"
"Organisational Change","change management","
```

`Eleven critical factors were identified, such as ERP teamwork and composition, change management program and culture, top management support, business plan and vision, business process reengineering (BPR) and minimum customisation, effective communications, project management, software development, testing and troubleshooting, monitoring and evaluating performance, project champion, and appropriate business and IT legacy systems.'
","Rabaai2009IdentiCriticSucces",6,"x","x","x","x"
"Organisational Change","change management","
`Based on the work by Markus and Tanis (2000), Nah and Delgado organised these factors into seven main categories: (1) Business plan and vision; (2) Change management; (3) Communication; (4) ERP team composition, skills, and compensation; (5) Project management; (6) Top management support and championship; and (7) System analysis, selection, and technical implementation.'
","Rabaai2009IdentiCriticSucces",6,"x","x","x","x"
"Organisational Change","change management","
`The whole organisation should be aware of the project scope, its objectives and activities as an effective communication plan will have a direct impact on the success of the change management program (Mendel, 1999).'
","Rabaai2009IdentiCriticSucces",10,"x","x","x","x"
"Organisational Change","change management","
`Indeed ERPs have also proved challenging to implement even in Western organisations, often due to an underestimated requirement for change management and the repositioning of roles and their meaning for actors (Boersma and Kingma, 2005).'
","RabaaiEtAl2015CulturPerspeon",84,"x","","x",""
"Organisational Change","change management","
`Several essential CSFs have been turned into valid and measurable constructs covering both technical and organisational factors (Bhatti, 2005), Many studies around this time detailed other specific CSFs applicable in implementation, but lacked attention to stakeholder perspective and change management aspects (Finney and Corbett, 2007).'
","RabaaiEtAl2015CulturPerspeon",87,"x","x","x","x"
"Organisational Change","change management","
`Organisational factors traditionally found to affect implementation success, including management support, project communication, change management and team composition do not differentiate the public from the private sector, at least in the case of Jordan.'
","RabaaiEtAl2015CulturPerspeon",97,"x","x","x","x"
"Organisational Change","change management","
`Resistance to new technology is a noted phenomenon in many cultures, but is one that requires effective change management strategies driven from the top.'
","RabaaiEtAl2015CulturPerspeon",98,"x","x","x","x"
"Organisational Change","change management","
`ERP failure factors and categories Failure Categories Failure Factors C4: Project Management F1: Conflicts between organization and consultants/ vendor C5: Technical F2: High rate of system customization C5: Technical F3: Data management issues C2: Human Resources F4: Inadequate education and training C2: Human Resources F5: Inadequate user involvement C2: Human Resources F6: Ineffective communications system C3: Organizational F7: Internal conflicts between departments C2: Human Resources F8: Inadequate change management C3: Organizational F9: Lack of performance measurement system C3: Organizational F10: Misfit between organization culture and ERP system C3: Organizational F11: Misfit between organization structure and ERP system C3: Organizational F12: Misfits between the IT and business strategies C1: Environmental F13: Environmental pressures C3: Organizational F14: Poor business process reengineering C1: Environmental F15: Poor consultant C4: Project Management F16: Poor project management C4: Project Management F17: Poor risk management C3: Organizational F18: Poor top management support C5: Technical F19: IT Technical

```
issues C2: Human Resources F20: Language barriers C4:...'
","RavasanEtAl2014FCM-BaDynamiModeli",42,"x","x","x","x"
"Organisational Change","change management","
`Critical success factors identified in Turkish studies Author (s) Critical
Success Factors Baskak& Cetisli (2003) Top management support, business plan and
vision, ERP teamwork, ERP package selection, change management, user training
and education, effective communication, project management, data integration,
software testing and troubleshooting, appropriate legacy systems, monitoring and
evaluation of performance.'
","SaygiliEtAl2017EndUsersPercep",62,"x","x","x","x"
"Organisational Change","change management","
`Item Description 1 top management support 25 application project costs 2
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communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor
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managing cultural change 34 project team competence- composition 11 business
process reengineering 35 ERP team work 12 customization 36 steering committee 13
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use of consultants 15 data accuracy 39 obtain business analysts 16 data
analysis- conversion 40 project champion 17 software development testing &
troubleshooting 41 appropriate business-legacy systems 18 implementation
strategies 42 data integration 19 ERP package selection 43 scope & vision based
performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of
performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"x","x","x","x"
"Organisational Change","change management","
`The proposed model confirms that following factors play a significant role
during implementation of SCMIS-top management support, user involvement, pre-
implementation analysis, user training, change management, data accuracy and
communication.'
","SethEtAl2015DeveloModelSucces",248,"x","x","x","x"
"Organisational Change","change management","
`According to the regression analysis on the successful implementation of SCMIS,
as shown in Table 8, factors that have significant impact at 5 per cent or
higher level include top management support, user support and involvement,
training and education, change management, pre-implementation analysis,
communication and data Table 7.'
","SethEtAl2015DeveloModelSucces",256,"x","x","x","x"
"Organisational Change","change management","
`Note: Numbers are the beta weight and **p < 0.05. confirms that these CSVs has
a significant impact, and in order to have a successful implementation of SCMIS,
top management support, user support and involvement, preimplementation
analysis, training, change management, data accuracy and communication are
critical.'
","SethEtAl2015DeveloModelSucces",257,"x","x","x","x"
"Organisational Change","organisational change","
`For instance, Maguire et al. (2010) find the introduction of ERP systems often
result in key organisational changes, which, if not managed carefully, can
result in conflict within an organisation.'
","AliEtAl2017ERPSystemImplem",673,"x","x","x","x"
"Organisational Change","organizational change","
`Findings - Results suggest that 9 critical failure items namely Inadequate
resources, Poor User involvement, Users' resistance to change, High Attrition
rate of project team members, Lack of top management commitment, Poor project
management, Inadequate project team composition, Ineffective organizational
```

change management and Unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.'
","GargEtAl2013EmpiriStudyon",496,"x","x","x","x"
"Organisational Change","organizational change","
`Pareto chart per factors for ERP failure Pareto analysis suggest that nine critical failure items namely inadequate resources, poor user involvement, users' resistance to change, higher attrition rate of project team members, Lack of top management commitment, Poor project management, inadequate project team composition, ineffective organizational change management, unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.'
","GargEtAl2013EmpiriStudyon",507,"x","x","x","x"
"Organisational Change","organizational change","
`Organizations with experience in projects involving IT or organizational change of a similar scale will find it much easier to handle the implementation of ERP [3,46].'
","NgaiEtAl2008ExaminCriticSucces",555,"x","x","x","x"
"Organisational Change","resistance","
`The authors report risk factors such as loss of qualified IT experts after implementation, inaccurate master production schedules, user resistance, loss of ERP-related know-how, lack of vendor support, failure to produce an appropriate material requirement plan, and inefficient integration between modules are primary risk factors that can affect the viability of ERP projects.'
","AliEtAl2017ERPSystemImplem",678,"x","","x",""
"Organisational Change","resistance","
`Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline Organisational resistance Lack of organisational commitment Poor data accuracy Limited user involvement Mismatch between organisation requirements and functionalities offered Lack of readiness for integration Lack of focus on user education and training Excessive customisation Inadequate organisational analysis Costs Project duration Technical challenges Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.'
","AliEtAl2017ERPSystemImplem",681,"x","","x",""
"Organisational Change","resistance","
`As a result of the studies conducted, user resistance was found to be one of the significant factors.'
","BasogluEtAl2007OrganiAdoptiEnterp",74,"x","","x","x"
"Organisational Change","resistance","
`Lack of management support, poor organizational culture, communication problems, financial management problems, lack of clarity on scope, project management problems, poor project team, ERP software misfit, poor solution implementer performance, poor quality of testing, outdated it infrastructure, lack of training, highly customized ERP, poor process design, lack of user involvement, resistance to change, unrealistic expectations are the main failure factors that need to be analyzed in detail.'
","CoşkunEtAl2022ERPFailurSystem",3,"x","","x",""
"Organisational Change","resistance","
`In some cases, they have referenced the need to build acceptance and commitment to the change (Shanks and Parr, 2000; Motwani et al., 2002; Bajwa et al., 2004; Holland and Light, 1999; Abdinnour-Helm et al., 2003; Kumar et al., 2002) and address resistance (Ross and Vitale, 2000; Hong and Kim, 2002; Skok and Legge, 2002); the need to communicate (Ribbers and Schoo, 2002); the need to understand benefits and drawbacks (Bingi et al., 1999; Aladwani, 2001); the need to educate (Siriginidi, 2000a, b); and the need to consider and address organizational culture issues (Davison, 2002; Al-Mashari et al., 2003; Aladwani, 2001; Nah et

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al., 2001; Scott and Vessey, 2000; Tarafdar and Roy, 2003; Skok and Legge,
2002).'
","FinneyEtAl2007ERPImplemCompil",342,"x","","x","x"
"Organisational Change","resistance","
`Findings - Results suggest that 9 critical failure items namely Inadequate
resources, Poor User involvement, Users' resistance to change, High Attrition
rate of project team members, Lack of top management commitment, Poor project
management, Inadequate project team composition, Ineffective organizational
change management and Unrealistic project scheduling have a high impact on ERP
implementation and therefore deserve serious attention in the process of ERP
implementation.'
","GargEtAl2013EmpiriStudyon",496,"x","","x","x"
"Organisational Change","resistance","
`Pareto chart per factors for ERP failure Pareto analysis suggest that nine
critical failure items namely inadequate resources, poor user involvement,
users' resistance to change, higher attrition rate of project team members, Lack
of top management commitment, Poor project management, inadequate project team
composition, ineffective organizational change management, unrealistic project
scheduling have a high impact on ERP implementation and therefore deserve
serious attention in the process of ERP implementation.'
","GargEtAl2013EmpiriStudyon",507,"x","","x","x"
"Organisational Change","resistance","
`Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) ●
Communication within the company ● Organization resistance ● Project budget ●
Project management ● Implementation strategy ● Strategic goals and objectives ●
Business process reengineering ● organizational culture ● knowledge base of the
company ● Project planning and control ● Facilitating conditions ● Organization
size ● The vision of the organization ● Readiness of organizations ● Clarity of
potential cost ● User involvement ● Selection of vendor/consult ant ● Project
team ● Top management support ● Training of user ● Trust on vendor ● Performance
expectancy ● Effort expectancy ● Social influence ● Age ● Gender ● Highest
degree attained ● Selection of ERP package ● IT infrastructure ● Data integrity
and system testing.'
","HuangEtAl2021CriticSuccesFactor",4686,"x","","x",""
"Organisational Change","resistance","
`The research concludes that: (1) Quality (adequacy) and quantity of training
and education of personnel/users, role and effectiveness of management in
reducing the users' resistance, use of steering committee for control purpose,
top management support or involvement, clearly specified goals/objectives/scope
regarding ERP system, ease of system's use and users' acceptance, vendor's
support, project management, effective communication among the organizational
members and a balanced team for ERP implementation are practically considered by
the successful enterprises in China while planning and going for the
implementation of the ERP system and are thus critical for the success of ERP
systems implementation projects, ignoring of which may cause implementation
failure in the Chinese organizations; (2) Some of the factors deemed imperative
for ERP systems implementation success in the literature like; selection of a
right full time project manager with extensive experience, presence/existence of
a champion, integration of business planning with IT/ERP planning, use and role
of consultant, change management strategy and programs, competency in use of IT
and IT infrastructure, business...'
","KhattakEtAl2013InvestCriticSucces",68,"x","","x",""
"Organisational Change","resistance","
`Disruption to staff and resistance to received `best practices', together with
required training, data mapping, customisations and their support, complexity of
integration with remaining legacy systems are all commonly reported, and are
often ongoing issues post-implementation.'
","RabaaiEtAl2015CulturPerspeon",86,"x","","x",""
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"Organisational Change","resistance","
`Resistance to new technology is a noted phenomenon in many cultures, but is one
that requires effective change management strategies driven from the top.'
","RabaaiEtAl2015CulturPerspeon",98,"x","","x",""
"Organisational Change","resistance","
`Disruption to staff and resistance to received ``best practices'', together
with required training, data mapping, customizations and their support,
complexity of integration with remaining legacy systems are all commonly
reported, and are often ongoing issues post-implementation.'
","RabaaiEtAl2016SuccesFactorEnterp",46,"x","","x","x"
"Organisational Change","resistance","
`To overcome this misfit, companies can establish a framework that takes the
primary failures of poor leadership, poor project management, poor data quality,
poor training, and users' resistance into consideration.'
","ShaulEtAl2013CriticSuccesFactor",18,"x","","x","x"
"Organisational Change","resistance","
`● IT infrastructure ● System Training and knowledge transfer ● Over-dependence
on detailed and heavy customization ● High turnover rate of project team members
● Business process re-engineering ● User's resistance to transform ● ERP system
misfit Considering these critical factors, specifically affecting the
agricultural business sectors in Malaysia, there are a few possible suggestions
proposed.'
","ShukorEtAl2020EnterpResourPlanni",2055,"x","","x",""
"Organisational Culture","company culture","
`Furthermore, ERP project changes the way a company is organized, often acting
against the prevailing company culture, and any organization planning to
introduce an ERP system needs to perform a socio-technical analysis before the
actual implementation (Colmenares et al., 2004).'
","MahrazEtAl2020CompilAnalysCritic",114,"x","x","x","x"
"Organisational Culture","organisational culture","
`An organisational culture of shared values and common objectives is crucial for
business success [46].'
","ChatzoglouEtAl2016AnteceOutcomERP",1255,"x","x","x","x"
"Organisational Culture","organisational culture","
`Mehlinger (2006) found that the organisational culture of 10 campuses in a
university system that installed an ERP system, had little or no impact on the
successful implementation of an ERP system.'
","RabaaiEtAl2009ERPSystemHigher",459,"x","x","x","x"
"Organisational Culture","organisational culture","
`ERP technology is also known for imposing rigid norms of workflows and
particular practices upon workplaces and it is well noted that ERP demands
changes to organisational culture.'
","RabaaiEtAl2015CulturPerspeon",84,"x","x","x","x"
"Organisational Culture","organisational culture","
`Organisational culture plays a critical role in ERP implementation success.'
","RabaaiEtAl2015CulturPerspeon",84,"x","x","x","x"
"Organisational Culture","organisational culture","
`Across various developing countries, Huang and Palvia (2001) identified many
factors of national and organisational culture affecting ERP implementation
including economic status and growth, infrastructure, government regulation, low
IT maturity, small firm size, and lack of process management and BPR
experience.'
","RabaaiEtAl2015CulturPerspeon",88,"x","x","x","x"
"Organisational Culture","organisational culture","
`Culture changes however are relatively slower, and it is known that societal
culture attitudes do help shape organisational culture attitudes towards ICT
adoption, including in the Arab world (Twati and Gammack, 2006).'
","RabaaiEtAl2015CulturPerspeon",89,"x","x","x","x"

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"Organisational Culture","organisational culture","
`Whilst many conventional interpretations assume that the national cultural
values of employees directly influence organisational cultures this has been
strongly challenged (McSweeney, 20022).'
","RabaaiEtAl2015CulturPerspeon",90,"x","x","x","x"
"Organisational Culture","organisational culture","
`A further lack of fit with organisational culture is indicated by the extensive
customisations that were required in the Jordanian organisations surveyed.'
","RabaaiEtAl2015CulturPerspeon",98,"x","x","x","x"
"Organisational Culture","organizational culture","
`Moreover, future works could focus on more specific areas such as change
management, project management, organizational structure or organizational
culture impact in ERP failures so that more detailed and in-depth information or
deep-rooted failure reasons could be identified.'
","AmidEtAl2012IdentiClassiERP",234,"x","x","x","x"
"Organisational Culture","organizational culture","
`Exploring knowledge sharing in ERP implementation: An organizational culture
framework.'
","BasogluEtAl2007OrganiAdoptiEnterp",95,"x","x","x","x"
"Organisational Culture","organizational culture","
`An important insight, uncovered by the research was the importance of an open
discussion environment and organizational culture.'
","Chan2013AustraQuantiSurvey",104,"x","x","x","x"
"Organisational Culture","organizational culture","
`In this study, the dimension of ``internal environment'' includes four factors
(top management support, business process reengineering, organizational culture,
change management).'
","ChatzoglouEtAl2016AnteceOutcomERP",1255,"x","x","x","x"
"Organisational Culture","organizational culture","
`Organizations should built an organizational culture that is open to change
[32], since openness to change plays a pivotal role in today's business
environment.'
","ChatzoglouEtAl2016AnteceOutcomERP",1255,"x","x","x","x"
"Organisational Culture","organizational culture","
`Lack of management support, poor organizational culture, communication
problems, financial management problems, lack of clarity on scope, project
management problems, poor project team, ERP software misfit, poor solution
implementer performance, poor quality of testing, outdated it infrastructure,
lack of training, highly customized ERP, poor process design, lack of user
involvement, resistance to change, unrealistic expectations are the main failure
factors that need to be analyzed in detail.'
","CoşkunEtAl2022ERPFailurSystem",3,"x","x","x","x"
"Organisational Culture","organizational culture","
`After 2016, ``Top Management Support'', ``Poor Organizational Culture'', and
``Poor Project Team'' had the same and second mostly encountered factors with 14
articles.'
","CoşkunEtAl2022ERPFailurSystem",14,"x","x","x","x"
"Organisational Culture","organizational culture","
`Therefore, the impact of organizational culture on ERP projects is inevitable.'
","CoşkunEtAl2022ERPFailurSystem",14,"x","x","x","x"
"Organisational Culture","organizational culture","
`According to results, in Asia, while mostly studied failure factor was
``Project Management Problems'' with twenty-three articles, ``Poor
Organizational Culture'' followed it with twenty-two articles.'
","CoşkunEtAl2022ERPFailurSystem",15,"x","x","x","x"
"Organisational Culture","organizational culture","
`In addition, in large companies, ``Poor Organizational Culture'' is the second
most studied factor.'
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",”CoşkunEtAl2022ERPFailurSystem”,15,”x”,”x”,”x”,”x”
”Organisational Culture”,”organizational culture”,”
`As expected, education, organizational culture, and communication problems come to the fore in large-scale companies, while financial problems come to the fore in small-scale companies.'
",”CoşkunEtAl2022ERPFailurSystem”,16,”x”,”x”,”x”,”x”
”Organisational Culture”,”organizational culture”,”
`However, the most important factors such as ``Project Management Problems'', ``Lack of Top Management Support'', and ``Poor Organizational Culture'' are related to project management, and these are completely specific to ERP.'
",”CoşkunEtAl2022ERPFailurSystem”,18,”x”,”x”,”x”,”x”
”Organisational Culture”,”organizational culture”,”
`In some cases, they have referenced the need to build acceptance and commitment to the change (Shanks and Parr, 2000; Motwani et al., 2002; Bajwa et al., 2004; Holland and Light, 1999; Abdinnour-Helm et al., 2003; Kumar et al., 2002) and address resistance (Ross and Vitale, 2000; Hong and Kim, 2002; Skok and Legge, 2002); the need to communicate (Ribbers and Schoo, 2002); the need to understand benefits and drawbacks (Bingi et al., 1999; Aladwani, 2001); the need to educate (Siriginidi, 2000a, b); and the need to consider and address organizational culture issues (Davison, 2002; Al-Mashari et al., 2003; Aladwani, 2001; Nah et al., 2001; Scott and Vessey, 2000; Tarafdar and Roy, 2003; Skok and Legge, 2002).'
",”FinneyEtAl2007ERPImplemCompil”,342,”x”,”x”,”x”,”x”
”Organisational Culture”,”organizational culture”,”
`Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) ● Communication within the company ● Organization resistance ● Project budget ● Project management ● Implementation strategy ● Strategic goals and objectives ● Business process reengineering ● organizational culture ● knowledge base of the company ● Project planning and control ● Facilitating conditions ● Organization size ● The vision of the organization ● Readiness of organizations ● Clarity of potential cost ● User involvement ● Selection of vendor/consult ant ● Project team ● Top management support ● Training of user ● Trust on vendor ● Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender ● Highest degree attained ● Selection of ERP package ● IT infrastructure ● Data integrity and system testing.'
",”HuangEtAl2021CriticSuccesFactor”,4686,”x”,”x”,”x”,”x”
”Organisational Culture”,”organizational culture”,”
`One of the most probable reasons among others may be diversity of the samples that are targeted in different regions and countries, which may have different national or organizational cultures, government laws or regulations and level of economic environments.'
",”KhattakEtAl2013InvestCriticSucces”,46,”x”,”x”,”x”,”x”
”Organisational Culture”,”organizational culture”,”
`In Pakistani companies, change management refers inevitably to enabling change through manipulation of or challenges to existing organizational culture.'
",”KhattakEtAl2013InvestCriticSucces”,66,”x”,”x”,”x”,”x”
”Organisational Culture”,”organizational culture”,”
`By contrast, in the Chinese context, we contend that the existing organizational culture is usually imposed and it is mostly determined by top management as to how and what to pursue and the change is accepted only if it is demanded.'
",”KhattakEtAl2013InvestCriticSucces”,66,”x”,”x”,”x”,”x”
”Organisational Culture”,”organizational culture”,”
`This is again because of the difference in national and organizational culture between both the countries.'
",”KhattakEtAl2013InvestCriticSucces”,66,”x”,”x”,”x”,”x”
”Organisational Culture”,”organizational culture”,”
`The importance of CSFs in ERP project affected by the existing organizational

culture, but it will also change the current culture.'
","MahrazEtAl2020CompilAnalysCritic",119,"x","x","x","x"
"Organisational Culture","organizational culture","
`Change management culture and programme The effective implementation of an ERP system requires change management strategies and an understanding of organizational culture.'
","NgaiEtAl2008ExaminCriticSucces",551,"x","x","x","x"
"Organisational Culture","organizational culture","
`National culture Several studies have recently pointed out the relevance of national culture to ERP implementation since it is embedded in organizational culture [23,32,88].'
","NgaiEtAl2008ExaminCriticSucces",556,"x","x","x","x"
"Organisational Culture","organizational culture","
`Academic research has pointed out the impacts of national culture on organizational culture, and business practices.'
","NgaiEtAl2008ExaminCriticSucces",557,"x","x","x","x"
"Organisational Culture","organizational culture","
`Change management and organizational culture are also frequently cited as factors critical to the success of the implementation of ERP systems.'
","NgaiEtAl2008ExaminCriticSucces",557,"x","x","x","x"
"Organisational Culture","organizational culture","
`In order to improve the chances for the successful implementation of the system, organizations should also review their organizational culture and attributes, as well as the readiness of management and employees to change before implementing an ERP system.'
","NgaiEtAl2008ExaminCriticSucces",558,"x","x","x","x"
"Organisational Culture","organizational culture","
`Jackson (2011) describes the critical influence of organizational culture on IS adoption, detailing a failed enterprise-wide implementation in a multi-campus higher education college in the UK.'
","RabaaiEtAl2016SuccesFactorEnterp",48,"x","x","x","x"
"Organisational Culture","organizational culture","
`The contribution of the study is that it brings forward the corporate and organizational culture as a critical success factor.'
","SaygiliEtAl2017EndUsersPercep",68,"x","x","x","x"
"Organisational Culture","organizational culture","
`Managing cultural change (Jones et al., 2006) and user training and education (Ke & Wei, 2008), remarked by end-users as components of factor five are determinants of organizational culture.'
","SaygiliEtAl2017EndUsersPercep",69,"x","x","x","x"
"Organisational Culture","organizational culture","
`According to this study end-users perceive ERP application as an organization wide software project with components of organizational culture and users.'
","SaygiliEtAl2017EndUsersPercep",69,"x","x","x","x"
"Organisational Culture","organizational culture","
`Organizational culture is another important factor that needs to be considered for the success of the information system.'
","SethEtAl2015DeveloModelSucces",250,"x","x","x","x"
"Organisational Culture","organizational culture","
`The studies by Leidner and Kayworth (2006) have shown that the success rate of the system that is being implemented increases if the system is aligned with the organizational culture.'
","SethEtAl2015DeveloModelSucces",250,"x","x","x","x"
"Organisational Culture","organizational culture","
`Organizational culture is embedded within national culture and it is regarded as a unique factor affecting ERP systems implementation success [Zhang et al. 2005].'
","ShaulEtAl2013CriticSuccesFactor",9,"x","x","x","x"

"Organisational Integration","internal integration","
`They identify causes of ERP implementation failure as excessive customisation,
dilemma of internal integration, poor understanding of business implications and
requirements, lack of change management strategy, poor data quality,
misalignment of IT with business, hidden costs, limited training, and lack of
top management support.'
","AliEtAl2017ERPSystemImplem",681,"x","","x","x"
"Organisational Integration","internal integration","
`As well as improving the efficiency of an individual company success, BPR can
be envisaged as a hierarchy of business reconfiguration, from local exploitation
through internal integration and business process redesign to business network
redesign and ultimately business scope redefinition (Venkatraman, 1991).'
","BasogluEtAl2007OrganiAdoptiEnterp",81,"x","","x","x"
"Organisational Structure","organisation structure","
`These systems are often `due' for retirement, but still exist within the
organisation encapsulating the existing business processes, organisation
structure, culture, and information technology (adopted from Aiken 1995;
Tayntor, 2005; Holland and Light, 1999).'
","Rabaai2009IdentiCriticSucces",1,"","","","x"
"Organisational Structure","organisational structure","
`If 92 A.A. Rabaa'i and E. AlJamal organisational structures are lacking in
rigorous lines of authority, as Hutchings and Weir suggest, the culture imposed
by ERPs may not fit without major customisation or culture change, attitudes to
which may differ between the traditional public sector and emerging private
enterprises.'
","RabaaiEtAl2015CulturPerspeon",91,"","","","x"
"Organisational Structure","organization structure","
`Appropriate business and IT legacy systems According to Holland and Light [28],
`legacy systems encapsulated the existing business processes, organization
structure, culture, and information technology'.'
","NgaiEtAl2008ExaminCriticSucces",551,"","","","x"
"Organisational Structure","organization structure","
`Also, F11 (misfit between organization structure and ERP system) has the
weakest path effect from failure factors to project failure modes with an
average effect of 0.40.'
","RavasanEtAl2014FCM-BaDynamiModeli",39,"","","","x"
"Organisational Structure","organization structure","
`ERP failure factors and categories Failure Categories Failure Factors C4:
Project Management F1: Conflicts between organization and consultants/ vendor
C5: Technical F2: High rate of system customization C5: Technical F3: Data
management issues C2: Human Resources F4: Inadequate education and training C2:
Human Resources F5: Inadequate user involvement C2: Human Resources F6:
Ineffective communications system C3: Organizational F7: Internal conflicts
between departments C2: Human Resources F8: Inadequate change management C3:
Organizational F9: Lack of performance measurement system C3: Organizational
F10: Misfit between organization culture and ERP system C3: Organizational F11:
Misfit between organization structure and ERP system C3: Organizational F12:
Misfits between the IT and business strategies C1: Environmental F13:
Environmental pressures C3: Organizational F14: Poor business process
reengineering C1: Environmental F15: Poor consultant C4: Project Management F16:
Poor project management C4: Project Management F17: Poor risk management C3:
Organizational F18: Poor top management support C5: Technical F19: IT Technical
issues C2: Human Resources F20: Language barriers C4:...'
","RavasanEtAl2014FCM-BaDynamiModeli",42,"","","","x"
"Organisational Structure","organization structure","
`Scenario 3 or organizational category (e.g., poor top management support,
misfit between organization structure and ERP system, and misfits between the IT
and business strategies) is the third ranked scenario among our five scenario.'

",”RavasanEtAl2014FCM-BaDynamiModeli”,45,”","","","x”
”Organisational Structure”,”organizational structure”,”
`Low degrees of management tendency to long and midterm planning as another
failure factor is a probable result of immature organizational structures in
Iranian industries, which is more explained in organizational component.'
",”AmidEtAl2012IdentiClassiERP”,233,”","","","x”
”Organisational Structure”,”organizational structure”,”
`Moreover, future works could focus on more specific areas such as change
management, project management, organizational structure or organizational
culture impact in ERP failures so that more detailed and in-depth information or
deep-rooted failure reasons could be identified.'
",”AmidEtAl2012IdentiClassiERP”,234,”","","","x”
”Organisational Structure”,”organizational structure”,”
`Depending on the organizational structure, economic issues, the intricacy of
the firm, time constrictions and environmental locations and strategic partners
(Markus and Tanis, 2000), the suitable execution strategy should be preferred.'
",”AnjumEtAl2015FactorManipuERP”,629,”","","","x”
”Organisational Structure”,”organizational structure”,”
`Related issues will be of increasing relevance and importance in the next years
for practice though (Botta-Genoulaz et al., 2005; Salmeron and Lopez, 2010; Law
et al., 2010), as in times of rapidly changing business environments and newly
emerging technologies, companies are not only forced to adapt their business
models, their strategy and their organizational structures but also their
information systems.'
",”BarthEtAl2019CriticSuccesFactor”,656,”","","","x”
”Organisational Structure”,”organizational structure”,”
`Organizational structures have to be adapted to new or changed processes and
necessary staffing changes have to be managed to prepare the organization in the
best way possible for the time after the upgrade (E, H).'
",”BarthEtAl2019CriticSuccesFactor”,667,”","","","x”
”Organisational Structure”,”organizational structure”,”
`BPC is an organizational initiative to design business processes to achieve
significant improvement through changes in the relationships between management,
information technology, organizational structure, and people (Kettinger et al.,
1995).'
",”BasogluEtAl2007OrganiAdoptiEnterp”,81,”","","","x”
”Organisational Structure”,”organizational structure”,”
`Depending on the organizational structure, the complexity of the organization,
economical issues, strategic partners, time constraints and geographical
locations (Markus and Tanis, 2000), the appropriate implementation strategy
should be selected.'
",”GargEtAl2014FactorInflueERP”,432,”","","","x”
”Organisational Structure”,”organizational structure”,”
`P2: The current study does not support the second proposition that reporting
level of the project manager that is an organizational structure in which the
project manager directly reports to the business division's senior management
leads to implementation project success.'
",”KhattakEtAl2013InvestCriticSucces”,53,”","","","x”
”Organisational Structure”,”organizational structure”,”
`Existing organizational structures and business processes may not fit with the
new system, which introduces a certain level of change.'
",”NgaiEtAl2008ExaminCriticSucces”,557,”","","","x”
”Organisational Structure”,”organizational structure”,”
`Detailing the case of resistance to the introduction of an integrated student
information management system, Noble and Newman (1993) use the term
``organizational invalidity'' to describe when a technology does not fit
organizational structures.'
",”RabaaiEtAl2016SuccesFactorEnterp”,48,”","","","x”

"Organisational Structure","organizational structure","
`The ERP life cycle is assumed different from the software life cycle since the ERP package involves configuring and adapting the generic functionality to fit organizational structures and processes developed by a known vendor.'
","ShaulEtAl2013CriticSuccesFactor",20,"","","","x"
"Organisational Structure","structure of the organization","
`High rate of managements' substitution or replacement in top levels of organizations' hierarchy and absence of any stable managerial position in governmental organizations as a result of governmental structure of the organizations, prevent managers to consider any long or even midterm goals and objectives.'
","AmidEtAl2012IdentiClassiERP",231,"","","","x"
"Organisational Structure","structure of the organization","
`The high expectation of achieving all-round cost savings and service improvements is very much dependent on how good the chosen ERP system fits to the organizational functionalities and how well the tailoring and configuration process of the system matches with the business culture, strategy and structure of the organization (Rashid, Hossain, & Patrick, 2002).'
","BasogluEtAl2007OrganiAdoptiEnterp",74,"","","","x"
"Performance Measurement System","performance measurement","
`Lack of performance measurement system 24.'
","AmidEtAl2012IdentiClassiERP",235,"","","","x"
"Performance Measurement System","performance measurement","
`ERP failure factors and categories Failure Categories Failure Factors C4: Project Management F1: Conflicts between organization and consultants/ vendor C5: Technical F2: High rate of system customization C5: Technical F3: Data management issues C2: Human Resources F4: Inadequate education and training C2: Human Resources F5: Inadequate user involvement C2: Human Resources F6: Ineffective communications system C3: Organizational F7: Internal conflicts between departments C2: Human Resources F8: Inadequate change management C3: Organizational F9: Lack of performance measurement system C3: Organizational F10: Misfit between organization culture and ERP system C3: Organizational F11: Misfit between organization structure and ERP system C3: Organizational F12: Misfits between the IT and business strategies C1: Environmental F13: Environmental pressures C3: Organizational F14: Poor business process reengineering C1: Environmental F15: Poor consultant C4: Project Management F16: Poor project management C4: Project Management F17: Poor risk management C3: Organizational F18: Poor top management support C5: Technical F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...'
","RavasanEtAl2014FCM-BaDynamiModeli",42,"","","","x"
"Project Management Skills & Competencies","project management","
`The authors find that top management support, good project management teams, and good communications are the top three most important critical successful factors during implementation.'
","AliEtAl2017ERPSystemImplem",666,"","","","x"
"Project Management Skills & Competencies","project management","
`They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.'
","AliEtAl2017ERPSystemImplem",674,"","","","x"
"Project Management Skills & Competencies","project management","

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`Important CSFs identified are: ERP team work and composition, top management
support, business plan and vision, effective communication, project management,
project champion, appropriate business and legacy systems, change management
programmes, culture, BPR, minimum customisation, software development, testing,
trouble shooting, monitoring, and evaluation of performance.'
","AliEtAl2017ERPSystemImplem",675,"","","","x"
"Project Management Skills & Competencies","project management","
`In another country-specific study, Amid et al. (2012) examine critical failure
factors in Iranian companies and identify and classify failure attributes as
vendors and consultants, human resources, managerial, project management,
processes, organisational, and technical issues (Table V).'
","AliEtAl2017ERPSystemImplem",681,"","","","x"
"Project Management Skills & Competencies","project management","
`The most common causes of ERP implementation failures are a combination of poor
planning and high software customisation (Scheer and Habbermann, 2000), lack of
top management commitment; ineffective communication; insufficient training;
lack of user support, poor project management, relying on legacy systems, inter-
departmental conflicts, poor composition of project teams, failure in
redesigning business processes and, lack of clarity about required changes.'
","AliEtAl2017ERPSystemImplem",682,"","","","x"
"Project Management Skills & Competencies","project management","
`The study founds a significant association of technological, strategic, project
management, people, top management support and communication factor with ERP
implementation.'
","AnjumEtAl2015FactorManipuERP",628,"","","","x"
"Project Management Skills & Competencies","project management","
`Project management: The study of Suganthalakshmi and Mothuvelayuthan (2012),
concluded that the formation of the project team has robust influence on the ERP
execution process and two significant issues are the combination of third-party
professionals within the team and the preservation within the firm with the
pertinent ERP knowledge.'
","AnjumEtAl2015FactorManipuERP",630,"","","","x"
"Project Management Skills & Competencies","project management","
`Organizations should have an effective project management strategy to control
the implementation process to avoid overrun of budget and ensuring
implementation on schedule.'
","BasogluEtAl2007OrganiAdoptiEnterp",91,"","","","x"
"Project Management Skills & Competencies","project management","
`Lack of management support, poor organizational culture, communication
problems, financial management problems, lack of clarity on scope, project
management problems, poor project team, ERP software misfit, poor solution
implementer performance, poor quality of testing, outdated it infrastructure,
lack of training, highly customized ERP, poor process design, lack of user
involvement, resistance to change, unrealistic expectations are the main failure
factors that need to be analyzed in detail.'
","CoşkunEtAl2022ERPFailurSystem",3,"","","","x"
"Project Management Skills & Competencies","project management","
`It should not be confused that many factors such as ``budget'',
``communication'', and ``project team'' are not examined in the ``Project
Management Problems'' category since they are examined in separate categories
because many articles analyzed in this study show that project management is
handled as project coordination.'
","CoşkunEtAl2022ERPFailurSystem",13,"","","","x"
"Project Management Skills & Competencies","project management","
`Frequency analysis of CSFs in literature CSF category Top management commitment
and support Change management BPR and software configuration Training and job
redesign Project team: the best and brightest Implementation strategy and
timeframe Consultant selection and relationship Visioning and planning Balanced
```

team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.'
","FinneyEtAl2007ERPImplemCompil",340,"","","","x"
"Project Management Skills & Competencies","project management","
`Findings - Results suggest that 9 critical failure items namely Inadequate resources, Poor User involvement, Users' resistance to change, High Attrition rate of project team members, Lack of top management commitment, Poor project management, Inadequate project team composition, Ineffective organizational change management and Unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.'
","GargEtAl2013EmpiriStudyon",496,"","","","x"
"Project Management Skills & Competencies","project management","
`Developing software systems is an expensive, and often a difficult process as software development projects are affected by a series of problems, such as poor project management, cost and schedule overruns, poor quality software and under-motivated developers.'
","GargEtAl2013EmpiriStudyon",500,"","","","x"
"Project Management Skills & Competencies","project management","
`Pareto chart per factors for ERP failure Pareto analysis suggest that nine critical failure items namely inadequate resources, poor user involvement, users' resistance to change, higher attrition rate of project team members, Lack of top management commitment, Poor project management, inadequate project team composition, ineffective organizational change management, unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.'
","GargEtAl2013EmpiriStudyon",507,"","","","x"
"Project Management Skills & Competencies","project management","
`The results of this research support the suggested hypothesis (H4) that there is positive influence between ``Project management'' related items on ERP implementation success (b = 0.788, t-value = 17.521, p-value = 0.007).'
","GargEtAl2014FactorInflueERP",438,"","","","x"
"Project Management Skills & Competencies","project management","
`(4) The Project Management factor in this study is defined by team composition, project team competence, scope management, expectation management, communication within project team and budget control items which may affect the success of ERP implementation in Indian retail sector.'
","GargEtAl2015FactorAffectERP",1332,"","","","x"
"Project Management Skills & Competencies","project management","
`The most widely cited CSFs were found to be: security, project management, communication, compliance, network and the reaction of organization.'
","HuangEtAl2021CriticSuccesFactor",4685,"","","","x"
"Project Management Skills & Competencies","project management","
`Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) ● Communication within the company ● Organization resistance ● Project budget ● Project management ● Implementation strategy ● Strategic goals and objectives ● Business process reengineering ● organizational culture ● knowledge base of the company ● Project planning and control ● Facilitating conditions ● Organization size ● The vision of the organization ● Readiness of organizations ● Clarity of potential cost ● User involvement ● Selection of vendor/consult ant ● Project team ● Top management support ● Training of user ● Trust on vendor ● Performance

expectancy ● Effort expectancy ● Social influence ● Age ● Gender ● Highest degree attained ● Selection of ERP package ● IT infrastructure ● Data integrity and system testing.'
","HuangEtAl2021CriticSuccesFactor",4686,"","","","x"
"Project Management Skills & Competencies","project management","
`Discussion From the systematic literature review conducted into Cloud ERP implementation, we found that the top five most widely cited CSFs for the successful implementation of Cloud ERP are: security, project management, communication, compliance, and network.'
","HuangEtAl2021CriticSuccesFactor",4689,"","","","x"
"Project Management Skills & Competencies","project management","
`The research concludes that: (1) Quality (adequacy) and quantity of training and education of personnel/users, role and effectiveness of management in reducing the users' resistance, use of steering committee for control purpose, top management support or involvement, clearly specified goals/objectives/scope regarding ERP system, ease of system's use and users' acceptance, vendor's support, project management, effective communication among the organizational members and a balanced team for ERP implementation are practically considered by the successful enterprises in China while planning and going for the implementation of the ERP system and are thus critical for the success of ERP systems implementation projects, ignoring of which may cause implementation failure in the Chinese organizations; (2) Some of the factors deemed imperative for ERP systems implementation success in the literature like; selection of a right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role of consultant, change management strategy and programs, competency in use of IT and IT infrastructure, business...'
","KhattakEtAl2013InvestCriticSucces",68,"","","","x"
"Project Management Skills & Competencies","project management","
`According to the literature, the most studied factors were: Top Management Support, Effective Communication, Training, and Education, Business plan and vision, Project Management, BPR management, Change Management, Project team Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation, Technological Infrastructure, Legacy systems consideration.'
","MahrazEtAl2020CompilAnalysCritic",112,"","","","x"
"Project Management Skills & Competencies","project management","
`The findings of our study reveal that `appropriate business and IT legacy systems', `business plan/vision/goals/justification', `business process reengineering', `change management culture and programme', `communication', `ERP teamwork and composition', `monitoring and evaluation of performance', `project champion', `project management', `software/system development, testing and troubleshooting', `top management support', `data management', `ERP strategy and implementation methodology', `ERP vendor', `organizational characteristics', `fit between ERP and business/process', `national culture' and `country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.'
","NgaiEtAl2008ExaminCriticSucces",548,"","","","x"
"Project Management Skills & Competencies","project management","
`For ERP implementation, a clear and welldefined project plan, including the goals, objectives, strategy, scope, and schedule of the project, are significant issues in project management.'
","NgaiEtAl2008ExaminCriticSucces",557,"","","","x"
"Project Management Skills & Competencies","project management","
`Other more specific aspects of project management, such as setting realistic deadlines for implementation, dedicated resources, and the management of expectations were suggested in companies in the USA, United Kingdom, Demark, Europe and Australia.'
","NgaiEtAl2008ExaminCriticSucces",557,"","","","x"

"Project Management Skills & Competencies","project management","
`Eleven critical factors were identified, such as ERP teamwork and composition, change management program and culture, top management support, business plan and vision, business process reengineering (BPR) and minimum customisation, effective communications, project management, software development, testing and troubleshooting, monitoring and evaluating performance, project champion, and appropriate business and IT legacy systems.'
","Rabaai2009IdentiCriticSucces",6,"","","","x"
"Project Management Skills & Competencies","project management","
`The factors identified were management and leadership, visioning and planning, ERP package selection, communication process management, training and education, project management, legacy systems management, system integration, system testing, cultural and structural changes, and performance evaluation and management.'
","Rabaai2009IdentiCriticSucces",6,"","","","x"
"Project Management Skills & Competencies","project management","
`Based on the work by Markus and Tanis (2000), Nah and Delgado organised these factors into seven main categories: (1) Business plan and vision; (2) Change management; (3) Communication; (4) ERP team composition, skills, and compensation; (5) Project management; (6) Top management support and championship; and (7) System analysis, selection, and technical implementation.'
","Rabaai2009IdentiCriticSucces",6,"","","","x"
"Project Management Skills & Competencies","project management","
`They are the few key areas where things must go right. . . '' An earlier paper by this team (Ram, Corkindale and Wu, 2013) tabulated the relationships found in the literature between CSFs and implementation or performance output success to identify four factors consistently emerging as central, namely project management, training and education, business process re-engineering and system integration.'
","RabaaiEtAl2015CulturPerspeon",87,"","","","x"
"Project Management Skills & Competencies","project management","
`The critical success factors consistently identified in the literature include top management support, the presence of a champion, good communication with all stakeholders, effective project management, reengineering of business processes, an understanding of corporate cultural change, and the use of business analysts on the project team.'
","RabaaiEtAl2015CulturPerspeon",88,"","","","x"
"Project Management Skills & Competencies","project management","
`5 Discussion, conclusion and future research Apart from two differences on project management aspects, the overwhelming impression is that the CSFs for implementation success were similar between the Cultural perspectives on ERP implementation in Jordan 97 Jordanian public and the private sector.'
","RabaaiEtAl2015CulturPerspeon",96,"","","","x"
"Project Management Skills & Competencies","project management","
`Project managers, surprised by the scope, size, and complexity of ERP projects may fail to initiate the necessary level of detailed project management planning and control (Umble and Umble, 2002).'
","RabaaiEtAl2015CulturPerspeon",98,"","","","x"
"Project Management Skills & Competencies","project management","
`ERP failure factors and categories Failure Categories Failure Factors C4: Project Management F1: Conflicts between organization and consultants/ vendor C5: Technical F2: High rate of system customization C5: Technical F3: Data management issues C2: Human Resources F4: Inadequate education and training C2: Human Resources F5: Inadequate user involvement C2: Human Resources F6: Ineffective communications system C3: Organizational F7: Internal conflicts between departments C2: Human Resources F8: Inadequate change management C3: Organizational F9: Lack of performance measurement system C3: Organizational F10: Misfit between organization culture and ERP system C3: Organizational F11:

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Misfit between organization structure and ERP system C3: Organizational F12:
Misfits between the IT and business strategies C1: Environmental F13:
Environmental pressures C3: Organizational F14: Poor business process
reengineering C1: Environmental F15: Poor consultant C4: Project Management F16:
Poor project management C4: Project Management F17: Poor risk management C3:
Organizational F18: Poor top management support C5: Technical F19: IT Technical
issues C2: Human Resources F20: Language barriers C4:...'
","RavasanEtAl2014FCM-BaDynamiModeli",42,"","","","x"
"Project Management Skills & Competencies","project management","
`Critical success factors identified in Turkish studies Author (s) Critical
Success Factors Baskak& Cetisli (2003) Top management support, business plan and
vision, ERP teamwork, ERP package selection, change management, user training
and education, effective communication, project management, data integration,
software testing and troubleshooting, appropriate legacy systems, monitoring and
evaluation of performance.'
","SaygiliEtAl2017EndUsersPercep",62,"","","","x"
"Project Management Skills & Competencies","project management","
`...mentation evaluation 22 implementation time 46 national culture 23
management of expectations 47 country related functional requirements 24 project
management 48 centralization'
","SaygiliEtAl2017EndUsersPercep",64,"","","","x"
"Project Management Skills & Competencies","project management","
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation
strategies (23) Management of expectations (24) Project management (32) Employee
/ team morale & motivation (33) Leadership of the project team (34) Project team
competence and composition 2 (14) Software configuration (21) IT infrastructure
(28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor
development tools (38) Use of consultants 3 (40) Project champion (46) National
culture (47) Country related functional requirements (48) Centralization 4 (1)
Top management support (2) Effective communication (3) Interdepartmental
communication (4) Clear goals and objectives (5) Business plan & vision 5 (15)
Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7)
Education on new business processes (8) User training and education (9) User
acceptance (10) Managing cultural change this result maybe, end-users resist
changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"","","","x"
"Project Management Skills & Competencies","project management","
`To overcome this misfit, companies can establish a framework that takes the
primary failures of poor leadership, poor project management, poor data quality,
poor training, and users' resistance into consideration.'
","ShaulEtAl2013CriticSuccesFactor",18,"","","","x"
"Project Management Skills & Competencies","project manager","
`Each new functionality has to be discussed in detail and benefits have to be
weighed against the costs in order to find the best solution for the company.''
A special focus was often put on the project manager.'
","BarthEtAl2019CriticSuccesFactor",664,"","","","x"
"Project Management Skills & Competencies","project manager","
`Despite the benefits that can be achieved from a successful ERP implementation,
project managers focus on the technical and financial aspects of a project and
neglect to take into account the non-technical issues like people (Genoulaz &
Millet, 2006).'
","BasogluEtAl2007OrganiAdoptiEnterp",79,"","","","x"
"Project Management Skills & Competencies","project manager","
`The propositions are as under: P1: Selection of a right full time project
manager with extensive experience whose sole responsibilities is the project is
positively related to the successful implementation of ERP project.'
","KhattakEtAl2013InvestCriticSucces",46,"","","","x"
"Project Management Skills & Competencies","project manager","
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`RESULTS AND DISCUSSION P1: After going through the summary of the survey results in Table 4; it is found that all the successful cases deployed the project managers (PMs) with having reasonable business experiences in the past to formally look after the ERP system implementation project in their respective organizations.'
","KhattakEtAl2013InvestCriticSucces",53,"","","","x"
"Project Management Skills & Competencies","project manager","
`The research concludes that: (1) Quality (adequacy) and quantity of training and education of personnel/users, role and effectiveness of management in reducing the users' resistance, use of steering committee for control purpose, top management support or involvement, clearly specified goals/objectives/scope regarding ERP system, ease of system's use and users' acceptance, vendor's support, project management, effective communication among the organizational members and a balanced team for ERP implementation are practically considered by the successful enterprises in China while planning and going for the implementation of the ERP system and are thus critical for the success of ERP systems implementation projects, ignoring of which may cause implementation failure in the Chinese organizations; (2) Some of the factors deemed imperative for ERP systems implementation success in the literature like; selection of a right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role of consultant, change management strategy and programs, competency in use of IT and IT infrastructure, business...'
","KhattakEtAl2013InvestCriticSucces",68,"","","","x"
"Project Management Skills & Competencies","project manager","
`Project managers, surprised by the scope, size, and complexity of ERP projects may fail to initiate the necessary level of detailed project management planning and control (Umble and Umble, 2002).'
","RabaaiEtAl2015CulturPerspeon",98,"","","","x"
"Project Management Skills & Competencies","project manager","
`To ensure ERP implementation success the project manager should control the financial resources (Frye et al., 2007).'
","RabaaiEtAl2015CulturPerspeon",98,"","","","x"
"Project Management Skills & Competencies","project manager","
`In Jordan, critical decisions and approvals are only taken by top management, thus, project managers do not have access or control over financial resources without approval from top management.'
","RabaaiEtAl2015CulturPerspeon",98,"","","","x"
"Project Planning","project planning","
`CSFs for successful ERP implementation are identified as top management support, presence of a champion, good communication with stakeholders, effective project planning, business process re-engineering (BPR), and using a business analyst on the project team (Bancroft et al., 1998; Bingi et al., 1999).'
","AliEtAl2017ERPSystemImplem",674,"","","","x"
"Project Planning","project planning","
`For a project implementation team, a more intimate understanding of CSFs of the various stakeholder groups would make it possible to assess the project planning phases and determine if the concerns of these relevant groups are being addressed as effectively as possible.'
","FinneyEtAl2007ERPImplemCompil",330,"","","","x"
"Project Planning","project planning","
`Consultants who are not able to demonstrate a mastery of professional communication skills, good language capability, industrial knowledge, and business analytical skills, are not able to provide expertise concerning project planning, ERP systems and BPR during ERP implementation and hence cannot act as change agents and fill the knowledge gaps (Ngai et al., 2008; Stebel, 1992; Ganesh and Mehta, 2010; Nah and Lau, 2001) (for example, communicating with project team members and users for acquiring business requirements, conducting

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BPR and delivering professional training).'
","GargEtAl2013EmpiriStudyon",499,"","","","x"
"Project Planning","project planning","
`Among the more important factors are top management support and involvement
(Duchessi et al., 1989) the need for a project champion (Ehie and Madsen, 2005),
user training (Stefanou and Revanoglou, 2006), technological competence, process
delineation, project planning, change management and PM (Krumbholz and Maiden,
2001).'
","GargEtAl2014CriticSuccesFactor",404,"","","","","x"
"Project Planning","project planning","
`The most important factors are top management support and involvement, the need
for project champion user training, technological competence, process
delineation, project planning, change management and PM (Umble et al., 2003).'
","GargEtAl2014CriticSuccesFactor",404,"","","","","x"
"Project Planning","project planning","
`Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) ●
Communication within the company ● Organization resistance ● Project budget ●
Project management ● Implementation strategy ● Strategic goals and objectives ●
Business process reengineering ● organizational culture ● knowledge base of the
company ● Project planning and control ● Facilitating conditions ● Organization
size ● The vision of the organization ● Readiness of organizations ● Clarity of
potential cost ● User involvement ● Selection of vendor/consult ant ● Project
team ● Top management support ● Training of user ● Trust on vendor ● Performance
expectancy ● Effort expectancy ● Social influence ● Age ● Gender ● Highest
degree attained ● Selection of ERP package ● IT infrastructure ● Data integrity
and system testing.'
","HuangEtAl2021CriticSuccesFactor",4686,"","","","","x"
"Project Planning","project planning","
`Project planning, forming the project team, choosing the ERP package and the
ERP implementer, the project sponsor and supervisor are among the duties that
can only be done by top managers.'
","OsmanEtAl2019ERPCriticSucces",37,"","","","","x"
"Project Planning","project planning","
`The project planning must be looked upon as a change management initiative not
an IT initiative.'
","OsmanEtAl2019ERPCriticSucces",38,"","","","","x"
"Project Planning","project planning","
`The success factors related to top management's engagement with the project -
not just mere involvement, project leaders are veterans, change management goes
hand-in-hand with project planning, satisficing mindset prevails, and team
members were decision makers.'
","Rabaai2009IdentiCriticSucces",6,"","","","","x"
"Project Planning","project planning","
`Project planning follows from the visioning which must be clear enough to
specify a project mission and objectives, which can then turn into a detailed
plan with measurable outcomes as implementation proceeds and thus ensure
alignment with strategic direction.'
","RabaaiEtAl2016SuccesFactorEnterp",55,"","","","","x"
"Project Planning","project planning","
`QUT apply a developed risk management framework to manage risk as an integral
part of project planning and execution, with a regularly updated risk register.'
","RabaaiEtAl2016SuccesFactorEnterp",55,"","","","","x"
"Realistic Expectations","expectation","
`They rate CSFs by a degree of importance during ERP implementation as follows:
(1) top management support; (2) project team competence; (3) inter-departmental
cooperation; (4) clear goals and objectives; (5) project management; (6) inter-
departmental communication; (7) management of expectation; (8) project champion;
(9) vendors' support; (10) careful package selection; (11) data analysis and
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conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.'
","AliEtAl2017ERPSystemImplem",674,"x","","x","x"
"Realistic Expectations","expectation","
`In this work, authors mentioned that lack of education, BPR, project management, top management support and unrealistic expectations of users could lead companies to fail.'
","AmidEtAl2012IdentiClassiERP",229,"x","","x","x"
"Realistic Expectations","expectation","
`The involvement of users augments user satisfaction and approval by increasing pragmatic expectations about system competences (Esteves and Casanovas, 2003).'
","AnjumEtAl2015FactorManipuERP",630,"x","","x","x"
"Realistic Expectations","expectation","
`It is furthermore crucial that expectations and goals are communicated effectively among stakeholders and throughout all levels of an organization, including capabilities as well as limitations of the system (Nah and Delgado, 2006), also to prevent frustration due to ``over-selling'' (Somers and Nelson, 2004).'
","BarthEtAl2019CriticSuccesFactor",658,"x","","x","x"
"Realistic Expectations","expectation","
`Nevertheless, I states: ``To qualify a project as successful, also time and budget targets have to be met.'' As a result of the high complexity of the project and the huge dependency on the ERP system, B and J scale down the expectations and consider an ERP upgrade project as successful when time targets are nearly met and the company is able to continue their business without complications.'
","BarthEtAl2019CriticSuccesFactor",663,"x","","x","x"
"Realistic Expectations","expectation","
`At the end of the project it has to be checked if the project has been executed as planned, if expectations are met and if users get along with the upgraded system (I).'
","BarthEtAl2019CriticSuccesFactor",664,"x","","x","x"
"Realistic Expectations","expectation","
`Another important factor within the communication with end users is the management of expectations.'
","BarthEtAl2019CriticSuccesFactor",666,"x","","x","x"
"Realistic Expectations","expectation","
`The high expectation of achieving all-round cost savings and service improvements is very much dependent on how good the chosen ERP system fits to the organizational functionalities and how well the tailoring and configuration process of the system matches with the business culture, strategy and structure of the organization (Rashid, Hossain, & Patrick, 2002).'
","BasogluEtAl2007OrganiAdoptiEnterp",74,"x","","x","x"
"Realistic Expectations","expectation","
`Many of these companies struggled with issues like globalization, acquisition consolidation, process standardization, and changes in customer expectations (Genoulaz & Millet, 2006).'
","BasogluEtAl2007OrganiAdoptiEnterp",77,"x","","x","x"
"Realistic Expectations","expectation","
`In spite of high expectations of the organizations purchasing ERP software, most of ERP projects become overbudget, late and even fail (Genoulaz & Millet, 2006; Griffith et al., 1999; Hong & Kim, 2002; Kumar et al., 2003; Seewald, 2002).'
","BasogluEtAl2007OrganiAdoptiEnterp",79,"x","","x","x"
"Realistic Expectations","expectation","

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`Unless the organizational context and the information technology are made
compatible, waiting for people to use new technologies will not be more than an
expectation.'
","BasogluEtAl2007OrganiAdoptiEnterp",80,"x","","x","x"
"Realistic Expectations","expectation","
`Lack of management support, poor organizational culture, communication
problems, financial management problems, lack of clarity on scope, project
management problems, poor project team, ERP software misfit, poor solution
implementer performance, poor quality of testing, outdated it infrastructure,
lack of training, highly customized ERP, poor process design, lack of user
involvement, resistance to change, unrealistic expectations are the main failure
factors that need to be analyzed in detail.'
","CoşkunEtAl2022ERPFailurSystem",3,"x","","x","x"
"Realistic Expectations","expectation","
`Failures can be defined in other forms like exceeding budget, lagging behind
projected schedule, and failure to match expectations.'
","GargEtAl2013EmpiriStudyon",498,"x","","x","x"
"Realistic Expectations","expectation","
`These factors include, but not limited to, poor consultant effectiveness, ERP
software misfit, unrealistic expectations from top management concerning the ERP
systems, over-reliance on heavy customization, poor quality of Business Process
Reengineering (BPR), high turnover rate of project team members, poor IT
Infrastructure, functionality problems with the system, unclear concept of the
nature and use of the ERP system from the users perspective, too tight project
schedule, lack of formal communication, part-time dedication, etc.'
","GargEtAl2013EmpiriStudyon",498,"x","","x","x"
"Realistic Expectations","expectation","
`UI increase user satisfaction and acceptance by developing realistic
expectations about system capabilities (Esteves et al., 2003).'
","GargEtAl2014CriticSuccesFactor",408,"x","","x","x"
"Realistic Expectations","expectation","
`Nah et al. (2003) stated that one of the biggest problems ERP project leaders
face comes not from the implementation itself, but from expectations of board
members, senior staff, and other key stakeholders.'
","GargEtAl2014FactorInflueERP",431,"x","","x","x"
"Realistic Expectations","expectation","
`Expectations at every level need to be communicated.'
","GargEtAl2014FactorInflueERP",434,"x","","x","x"
"Realistic Expectations","expectation","
`Management of communication, education and expectations are critical throughout
the organization (Wee, 2000).'
","GargEtAl2014FactorInflueERP",434,"x","","x","x"
"Realistic Expectations","expectation","
`Training and education helps to improve the quality of ERP project results and
to meet user's expectations.'
","GargEtAl2014FactorInflueERP",440,"x","","x","x"
"Realistic Expectations","expectation","
`Also it is extremely important to set the right expectations with all the
project stakeholders so that there should not be any scope creep at the time of
user acceptance test.'
","GargEtAl2014FactorInflueERP",441,"x","","x","x"
"Realistic Expectations","expectation","
`User involvement increase user satisfaction and acceptance by developing
realistic expectations about system capabilities (Esteves and Casanovas, 2003).'
","GargEtAl2015FactorAffectERP",1320,"x","","x","x"
"Realistic Expectations","expectation","
`(4) The Project Management factor in this study is defined by team composition,
project team competence, scope management, expectation management, communication
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within project team and budget control items which may affect the success of ERP implementation in Indian retail sector.'
","GargEtAl2015FactorAffectERP",1332,"x","","x","x"
"Realistic Expectations","expectation","
`So it is advisable for the manager to clearly define the scope statement and set the right expectations with all the project stakeholders so that there should not be any scope creep at the time of user acceptance test (UAT).'
","GargEtAl2015FactorAffectERP",1333,"x","","x","x"
"Realistic Expectations","expectation","
`The size of the organization is significant to ERP implementation since expectations and requirements differ among SMEs and large organizations [16].'
","HuangEtAl2021CriticSuccesFactor",4688,"x","","x","x"
"Realistic Expectations","expectation","
`While, most of the existing papers only focus on the SMEs' context [14, 19–21, 23, 25], the size of the organization is a significant factor in assessing ERP implementation since expectations and requirements largely differ between SMEs and large organizations [39].'
","HuangEtAl2021CriticSuccesFactor",4690,"x","","x","x"
"Realistic Expectations","expectation","
`Unrealistic expectations and incompetent or unskilled project teams frequently lead to implementation failures (Xue et al., 2005).ERP team-work and its composition is important throughout the ERP implementation project and it should be balanced, cross-sectional and comprised of a mix of external consultants and organizational internal staff so that the internal staff can develop the necessary technical skills and expertise for designing, implementing, maintaining and enhancing the ERP systems.'
","KhattakEtAl2013InvestCriticSucces",65,"x","","x","x"
"Realistic Expectations","expectation","
`The Involvement of users may develop rational expectations about system capabilities and thus may increase their satisfaction level and easy acceptance of the new system (Esteves et al., 2003).'
","KhattakEtAl2013InvestCriticSucces",67,"x","","x","x"
"Realistic Expectations","expectation","
`It includes communication of expectations at all company levels, formal presentations by the project teams and the announcement of the project results within the company and announcement of the project scope, objectives and activities before the project onset (Doom et al., 2010); Training and Education: Training and Education are considered actually as one of the preconditions of building a successful ERP system.'
","MahrazEtAl2020CompilAnalysCritic",112,"x","","x","x"
"Realistic Expectations","expectation","
`Some of the ERP project team roles and responsibilities below are often utilized to put together the winning team who will achieve implementation success that meets the expectations and objectives set forth by the company management.'
","MahrazEtAl2020CompilAnalysCritic",113,"x","","x","x"
"Realistic Expectations","expectation","
`ERP implementation projects are very different from most other types of projects such as building construction, network installation, etc., and defining success seems to be more difficult than defining successful financial expectations, or manufacturing objectives (Romney, 2012).'
","MahrazEtAl2020CompilAnalysCritic",117,"x","","x","x"
"Realistic Expectations","expectation","
`Other more specific aspects of project management, such as setting realistic deadlines for implementation, dedicated resources, and the management of expectations were suggested in companies in the USA, United Kingdom, Demark, Europe and Australia.'
","NgaiEtAl2008ExaminCriticSucces",557,"x","","x","x"

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"Realistic Expectations","expectation","
`For example; continuing decline in perstudent government funding and support,
globalisation and global competition, continuing growth in student numbers,
changes in the nature of academic work, increasing competition between
institutions, government pressure to improve operational efficiency, and
generally diverse and shifting expectations of stakeholders.'
","Rabaai2009IdentiCriticSucces",1,"x","","x","x"
"Realistic Expectations","expectation","
`The top five were top management support, project team competence, project
champion, inter-departmental cooperation, and clear goals and expectations.'
","Rabaai2009IdentiCriticSucces",6,"x","","x","x"
"Realistic Expectations","expectation","
`ERP Systems in the HE Sector Environmental pressures for change on Universities
worldwide (McCredie and Updegrove, 1999) and in Australia (Beekhuyzen et al,
2002) have been many (Crase et al, 2000; Brown, 2002); including: continuing
decline in per-student government funding and support, globalisation and global
competition, continuing growth in student numbers, changes in the nature of
academic work, increasing competition between institutions, government pressure
to improve operational efficiency, and generally diverse and shifting
expectations of stakeholders.'
","RabaaiEtAl2009ERPSystemHigher",457,"x","","x","x"
"Realistic Expectations","expectation","
`Watson et al. (2003) for example argued that state government officials have
three major concerns with ERP implementations: high expectations of ERP systems;
inconsistent technology diffusion within government agencies and (despite the
standardisation ERP implementations warrant), many agencies are effectively
independent.'
","RabaaiEtAl2015CulturPerspeon",85,"x","","x","x"
"Realistic Expectations","expectation","
`One of the first articles that has been published about analyzing ERP failures
returned to Umble and Umble (2002) in which they mentioned that lack of
education, BPR, project management, top management support and unrealistic
expectations of users could lead companies to fail.'
","RavasanEtAl2014FCM-BaDynamiModeli",35,"x","","x","x"
"Realistic Expectations","expectation","
`b) Expectation failure, when the IT systems do not live up to user
expectations.'
","RavasanEtAl2014FCM-BaDynamiModeli",39,"x","","x","x"
"Realistic Expectations","expectation","
`Generally, it is believed that the project is partially failed because it is
not completed within time and/or budget (process failure), the ERP systems do
not live up to user expectations (expectation failure), and there is no match
between ERP systems and the planned objectives (correspondence failure).'
","RavasanEtAl2014FCM-BaDynamiModeli",40,"x","","x","x"
"Realistic Expectations","expectation","
`...mentation evaluation 22 implementation time 46 national culture 23
management of expectations 47 country related functional requirements 24 project
management 48 centralization'
","SaygiliEtAl2017EndUsersPercep",64,"x","","x","x"
"Realistic Expectations","expectation","
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation
strategies (23) Management of expectations (24) Project management (32) Employee
/ team morale & motivation (33) Leadership of the project team (34) Project team
competence and composition 2 (14) Software configuration (21) IT infrastructure
(28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor
development tools (38) Use of consultants 3 (40) Project champion (46) National
culture (47) Country related functional requirements (48) Centralization 4 (1)
Top management support (2) Effective communication (3) Interdepartmental
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communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"x","","x","x"
"Realistic Expectations","expectation","
`The sub-factors represent the fundamental management functions introduced by Draft (1991) planning (implementation strategies, project management), organizing (business process reengineering, management of expectations, project team competence and composition) and leading (leadership of project team, employee / team morale and motivation).'
","SaygiliEtAl2017EndUsersPercep",68,"x","","x","x"
"Realistic Expectations","expectation","
`Identify user and organizational expectations effectively.'
","SaygiliEtAl2017EndUsersPercep",74,"x","","x","x"
"Realistic Expectations","expectation","
`However, a substantial number of companies still suffer from ERP project overruns because of unrealistic expectations concerning duration and resources allocated [Panorama 2011].'
","ShaulEtAl2013CriticSuccesFactor",9,"x","","x","x"
"Realistic Expectations","expectation","
`Unrealistic expectations on the part of vendors and the intangible system prior to implementation can lead companies to misinterpret the role of senior management in ERP implementation outcomes.'
","ShaulEtAl2013CriticSuccesFactor",19,"x","","x","x"
"Realistic Expectations","expectation","
`Therefore, there is still a need to continuously adapt and enhance an ERP after its first implementation to resolve users' dissatisfactions regarding expectations and the requirement backlog given the gap between actual functionality and benefits promised by the ERP [Motiwalla and Thompson 2009].'
","ShaulEtAl2013CriticSuccesFactor",22,"x","","x","x"
"Realistic Expectations","expectation","
`Managing user acceptance towards enterprise resource planning (erp) systems: Understanding the dissonance between user expectations and managerial policies.'
","ShaulEtAl2013CriticSuccesFactor",34,"x","","x","x"
"Regulatory & Statutory Compliance","compliance","
`According to the same research, 14% of organizations implement ERP systems for ensure compliance, 14% for make employees' jobs easier, and 13% better integrate systems across locations [17].'
","CoşkunEtAl2022ERPFailurSystem",2,"","","","x"
"Regulatory & Statutory Compliance","compliance","
`Also, they need to meet the compliance requirement of their customers' countries.'
","GargEtAl2014FactorInflueERP",425,"","","","x"
"Regulatory & Statutory Compliance","compliance","
`The most widely cited CSFs were found to be: security, project management, communication, compliance, network and the reaction of organization.'
","HuangEtAl2021CriticSuccesFactor",4685,"","","","x"
"Regulatory & Statutory Compliance","compliance","
`Compliance represents the next widely cited CSF [14, 15, 20, 23].'
","HuangEtAl2021CriticSuccesFactor",4685,"","","","x"
"Regulatory & Statutory Compliance","compliance","
`Since organizations are uncertain about the means of data storage in the cloud, Cloudbased data archiving, segregation of duties, global compliance standards, and regulations are considered as the three major issues in compliance [23].'
","HuangEtAl2021CriticSuccesFactor",4685,"","","","x"
"Regulatory & Statutory Compliance","compliance","

`According to Gupta and Misra [14] and Gupta, Misra [15], high compliance will increase the possibility of successful implementation.'
","HuangEtAl2021CriticSuccesFactor",4685,"","","","x"
"Regulatory & Statutory Compliance","compliance","
`Compliance also has a moderating effect between organizational factors and successful implementation of Cloud ERP [23].'
","HuangEtAl2021CriticSuccesFactor",4685,"","","","x"
"Regulatory & Statutory Compliance","compliance","
`Extrinsic factors include: compliance, network, and security as these CSFs are primarily controlled by the cloud vendor.'
","HuangEtAl2021CriticSuccesFactor",4686,"","","","x"
"Regulatory & Statutory Compliance","compliance","
`For example, Gupta and Misra [14] analyzed statistics and found network, compliance, security is positively related to the success of Cloud ERP implementation.'
","HuangEtAl2021CriticSuccesFactor",4687,"","","","x"
"Regulatory & Statutory Compliance","compliance","
`For example, Gupta and Misra [23] found the moderating effects of security, compliance and Page 4687 network on the relationship between organizational factors and successful implementation of Cloud ERP.'
","HuangEtAl2021CriticSuccesFactor",4687,"","","","x"
"Regulatory & Statutory Compliance","compliance","
`Discussion From the systematic literature review conducted into Cloud ERP implementation, we found that the top five most widely cited CSFs for the successful implementation of Cloud ERP are: security, project management, communication, compliance, and network.'
","HuangEtAl2021CriticSuccesFactor",4689,"","","","x"
"Regulatory & Statutory Compliance","compliance","
`Globalization, centralization, and regulatory compliance were the key drivers for continued ERP investment among LEs.'
","ShaulEtAl2013CriticSuccesFactor",9,"","","","x"
"Regulatory & Statutory Compliance","regulation","
`Here, lack of employees' morale and motivation is considered as one of the most important failure factors, which intensively relates to governmental structure of large Iranian organization by high levels of bureaucracy and heavy regulations.'
","AmidEtAl2012IdentiClassiERP",233,"","","","x"
"Regulatory & Statutory Compliance","regulation","
`These regulations limit managers to recruit and preserve qualified employees due to low levels of salaries and wages paid to employees in governmental structures.'
","AmidEtAl2012IdentiClassiERP",233,"","","","x"
"Regulatory & Statutory Compliance","regulation","
`Since organizations are uncertain about the means of data storage in the cloud, Cloudbased data archiving, segregation of duties, global compliance standards, and regulations are considered as the three major issues in compliance [23].'
","HuangEtAl2021CriticSuccesFactor",4685,"","","","x"
"Regulatory & Statutory Compliance","regulation","
`One of the most probable reasons among others may be diversity of the samples that are targeted in different regions and countries, which may have different national or organizational cultures, government laws or regulations and level of economic environments.'
","KhattakEtAl2013InvestCriticSucces",46,"","","","x"
"Regulatory & Statutory Compliance","regulation","
`Cultures, government regulations, and economic environments differ among countries, a fact that raises some issues and challenges for ERP implementation [30,42,64].'
","NgaiEtAl2008ExaminCriticSucces",549,"","","","x"

"Regulatory & Statutory Compliance","regulation","
`Sheu et al. [64] pointed out that the differences in language, culture, politics, government, regulations, management style, and labour skills have an impact on ERP implementation practices in different countries.'
","NgaiEtAl2008ExaminCriticSucces",549,"","","","x"
"Regulatory & Statutory Compliance","regulation","
`Across various developing countries, Huang and Palvia (2001) identified many factors of national and organisational culture affecting ERP implementation including economic status and growth, infrastructure, government regulation, low IT maturity, small firm size, and lack of process management and BPR experience.'
","RabaaiEtAl2015CulturPerspeon",88,"","","","x"
"Regulatory & Statutory Compliance","regulation","
`Regardless of the misfit between organization structure and ERP system, some of Iranian unique regulations and procedures especially in finance processes, prevent international systems to being implemented and fitted in Iranian organizations or force vendors to do major customizations in their systems.'
","RavasanEtAl2014FCM-BaDynamiModeli",45,"","","","x"
"Regulatory & Statutory Compliance","regulatory","
`Although national characteristics can and do play a role in shaping organisational practices, Bhaskaran and Sukumaran (2007) found that other factors, such as the economic and regulatory environment of organisations, were more influential than simple cultural `stereotyping' based on business managers' nationality.'
","RabaaiEtAl2015CulturPerspeon",90,"","","","x"
"Regulatory & Statutory Compliance","regulatory","
`Globalization, centralization, and regulatory compliance were the key drivers for continued ERP investment among LEs.'
","ShaulEtAl2013CriticSuccesFactor",9,"","","","x"
"Resource Availability","availability of resource","
`In addition, the effect of other on-going projects, including the management of the overall IT architecture, and nonavailability of resources for organisational transformation, are the most critical risk factors for implementation.'
","AliEtAl2017ERPSystemImplem",678,"","x","",""
"Resource Availability","dedicated resource","
`They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.'
","AliEtAl2017ERPSystemImplem",674,"","x","",""
"Resource Availability","dedicated resource","
`Other more specific aspects of project management, such as setting realistic deadlines for implementation, dedicated resources, and the management of expectations were suggested in companies in the USA, United Kingdom, Demark, Europe and Australia.'
","NgaiEtAl2008ExaminCriticSucces",557,"","x","",""
"Resource Availability","dedicated resource","
`Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31

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organizational characteristics 8 user training& education 32 employee / team
morale-motivation 9 user acceptance 33 leadership of the project team 10
managing cultural change 34 project team competence- composition 11 business
process reengineering 35 ERP team work 12 customization 36 steering committee 13
minimal customization 37 empowered decision makers 14 software configuration 38
use of consultants 15 data accuracy 39 obtain business analysts 16 data
analysis- conversion 40 project champion 17 software development testing &
troubleshooting 41 appropriate business-legacy systems 18 implementation
strategies 42 data integration 19 ERP package selection 43 scope & vision based
performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of
performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","x","",""
"Resource Availability","human resource","
`They observe that vendor failure to adapt to local culture, BPR, managing local
human resources, lack of information sharing, failure to understand cultural
characteristics, lack of adaptability towards a changing business and economic
environment, lack of cost control functions (i.e. adapting to changing costs),
and failure to understand technical issues are the main causes of ERP
implementation failure.'
","AliEtAl2017ERPSystemImplem",681,"","x","",""
"Resource Availability","human resource","
`In another country-specific study, Amid et al. (2012) examine critical failure
factors in Iranian companies and identify and classify failure attributes as
vendors and consultants, human resources, managerial, project management,
processes, organisational, and technical issues (Table V).'
","AliEtAl2017ERPSystemImplem",681,"","x","",""
"Resource Availability","human resource","
`Another important failure factor in Iran relates to poor human resources
management.'
","AmidEtAl2012IdentiClassiERP",232,"","x","",""
"Resource Availability","human resource","
`One of the main problems in ERP projects is focusing on technical and financial
aspects of a project and neglecting to take into account the non-technical
issues like people [70], while many ERP studies indicate that failure is largely
due to human resources issues, rather than technical factors.'
","AmidEtAl2012IdentiClassiERP",232,"","x","",""
"Resource Availability","human resource","
`Then, using 236 questionnaire data gathered through ERP project team members in
Iranian industries, which completely failed in their ERP projects
implementation, a robust EFA is conducted and 35 finally failure factors are
categorized into seven main components consist of ``Vendor and Consultant'',
``Human Resources'', ``Managerial'' ``Project Management'', ``Processes'',
``Organizational'' and ``Technical''.'
","AmidEtAl2012IdentiClassiERP",233,"","x","",""
"Resource Availability","human resource","
`In other words, for an organization to work correctly, holistic, fast, and
reliable information is required in production, human resources, purchasing,
financial affairs, and stock [1].'
","CoşkunEtAl2022ERPFailurSystem",1,"","x","",""
"Resource Availability","human resource","
`Therefore, it involves not only the planning stages, but also the allocating of
responsibilities to various players, the definition of milestones and critical
paths, training and human resource planning, and finally the determination of
measures of success (Nah et al., 2001).'
","FinneyEtAl2007ERPImplemCompil",336,"","x","",""
"Resource Availability","human resource","
`The main reasons among many others as to why the Chinese enterprises faced the
kind of challenges include data maintenance and integration problems, system
```

integration problems (Lai, 2006), the involvement of knowledgeable consultants in respective projects, selection of reputable vendors, low implementation experience, weak or unsophisticated IT infrastructure, lack of access to knowledge and human resource etc., to name some of few.'
","KhattakEtAl2013InvestCriticSucces",43,"","x","",""
"Resource Availability","human resource","
`In addition to the flexibility that they prefer to retain, Chinese leaders are less willing to invest in the longterm development of company infrastructure such as in technology adoption, internal human resources, and processes since they are thrifty, and focus on short-term profit maximization [15].'
","NgaiEtAl2008ExaminCriticSucces",558,"","x","",""
"Resource Availability","human resource","
`ERP failure factors and categories Failure Categories Failure Factors C4: Project Management F1: Conflicts between organization and consultants/ vendor C5: Technical F2: High rate of system customization C5: Technical F3: Data management issues C2: Human Resources F4: Inadequate education and training C2: Human Resources F5: Inadequate user involvement C2: Human Resources F6: Ineffective communications system C3: Organizational F7: Internal conflicts between departments C2: Human Resources F8: Inadequate change management C3: Organizational F9: Lack of performance measurement system C3: Organizational F10: Misfit between organization culture and ERP system C3: Organizational F11: Misfit between organization structure and ERP system C3: Organizational F12: Misfits between the IT and business strategies C1: Environmental F13: Environmental pressures C3: Organizational F14: Poor business process reengineering C1: Environmental F15: Poor consultant C4: Project Management F16: Poor project management C4: Project Management F17: Poor risk management C3: Organizational F18: Poor top management support C5: Technical F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...'
","RavasanEtAl2014FCM-BaDynamiModeli",42,"","x","",""
"Resource Availability","human resource","
`Organizations where top management is committed for IOS and relationship are bound to be more successful as they will allocate more financial and human resources.'
","SethEtAl2015DeveloModelSucces",250,"","x","",""
"Resource Availability","human resource","
`Furthermore, there can also be underestimation of the available funding, human resources, hardware, suppliers, consultants and physical space, etc., needed for successful ERP implementation.'
","ShaulEtAl2013CriticSuccesFactor",19,"","x","",""
"Resource Availability","inadequate resource","
`Findings - Results suggest that 9 critical failure items namely Inadequate resources, Poor User involvement, Users' resistance to change, High Attrition rate of project team members, Lack of top management commitment, Poor project management, Inadequate project team composition, Ineffective organizational change management and Unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.'
","GargEtAl2013EmpiriStudyon",496,"","x","",""
"Resource Availability","inadequate resource","
`Pareto chart per factors for ERP failure Pareto analysis suggest that nine critical failure items namely inadequate resources, poor user involvement, users' resistance to change, higher attrition rate of project team members, Lack of top management commitment, Poor project management, inadequate project team composition, ineffective organizational change management, unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.'
","GargEtAl2013EmpiriStudyon",507,"","x","",""
"Resource Availability","inadequate resource","

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`Inadequate resources for ERP Implementation at Indian retail sector lead to
many problems and failure so it should not be there.'
","GargEtAl2013EmpiriStudyon",507,"","x","",""
"Resource Availability","inadequate resource","
`This is a similar finding to research conducted by Rockford Consulting Group;
the greatest reason for ERP implementation failures is inadequate resources.'
","GargEtAl2013EmpiriStudyon",507,"","x","",""
"Resource Availability","inadequate resource","
`Inadequate resources and a lack of financial and political support will
inevitably lead to failure as demonstrated in some case studies [87].'
","NgaiEtAl2008ExaminCriticSucces",557,"","x","",""
"Resource Availability","resource availability","
`Therefore, Yusuf et al. (2004) recommend that before embarking on an ERP
implementation, organisations should not only plan for resource availability,
but also assess its readiness for ERP system the changes that ERP implementation
will unleash.'
","AliEtAl2017ERPSystemImplem",676,"","x","",""
"Scope: Features","ERP package","
`Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) ●
Communication within the company ● Organization resistance ● Project budget ●
Project management ● Implementation strategy ● Strategic goals and objectives ●
Business process reengineering ● organizational culture ● knowledge base of the
company ● Project planning and control ● Facilitating conditions ● Organization
size ● The vision of the organization ● Readiness of organizations ● Clarity of
potential cost ● User involvement ● Selection of vendor/consult ant ● Project
team ● Top management support ● Training of user ● Trust on vendor ● Performance
expectancy ● Effort expectancy ● Social influence ● Age ● Gender ● Highest
degree attained ● Selection of ERP package ● IT infrastructure ● Data integrity
and system testing.'
","HuangEtAl2021CriticSuccesFactor",4686,"","","","x"
"Scope: Features","ERP package","
`The factors identified were management and leadership, visioning and planning,
ERP package selection, communication process management, training and education,
project management, legacy systems management, system integration, system
testing, cultural and structural changes, and performance evaluation and
management.'
","Rabaai2009IdentiCriticSucces",6,"","","","x"
"Scope: Features","ERP package","
`Critical success factors identified in Turkish studies Author (s) Critical
Success Factors Baskak& Cetisli (2003) Top management support, business plan and
vision, ERP teamwork, ERP package selection, change management, user training
and education, effective communication, project management, data integration,
software testing and troubleshooting, appropriate legacy systems, monitoring and
evaluation of performance.'
","SaygiliEtAl2017EndUsersPercep",62,"","","","x"
"Scope: Features","ERP package","
`Item Description 1 top management support 25 application project costs 2
effective communication 26 interdepartmental cooperation 3 interdepartmental
communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor
relations 5 business plan-vision 29 ongoing vendor support 6 change management
30 use of vendor's development tools 7 education on new business process 31
organizational characteristics 8 user training& education 32 employee / team
morale-motivation 9 user acceptance 33 leadership of the project team 10
managing cultural change 34 project team competence- composition 11 business
process reengineering 35 ERP team work 12 customization 36 steering committee 13
minimal customization 37 empowered decision makers 14 software configuration 38
use of consultants 15 data accuracy 39 obtain business analysts 16 data
analysis- conversion 40 project champion 17 software development testing &
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troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","","","x"
"Scope: Features","ERP product selection","
`(1) The ``Organizational'' factor in this study is defined by business plan and vision, top management support, business process reengineering, ERP product selection, selection of implementation partner/consultants and enterprise wide communication plan items which may affect the success of ERP implementation in Indian retail sector.'
","GargEtAl2015FactorAffectERP",1327,"","","","x"
"Scope: Features","clarity on scope","
`Lack of management support, poor organizational culture, communication problems, financial management problems, lack of clarity on scope, project management problems, poor project team, ERP software misfit, poor solution implementer performance, poor quality of testing, outdated it infrastructure, lack of training, highly customized ERP, poor process design, lack of user involvement, resistance to change, unrealistic expectations are the main failure factors that need to be analyzed in detail.'
","CoşkunEtAl2022ERPFailurSystem",3,"","","","x"
"Scope: Features","features","
`E also points out that responsible persons should think thoroughly about features to be implemented and their benefits.'
","BarthEtAl2019CriticSuccesFactor",664,"","","","x"
"Scope: Features","features","
`In the project context, the term scope can refer to two components[41]: Product scope the features and functions that characterized product, service or result Project scope its work performed to deliver a product, service or result with specific features and functions From requirement and product scope definitions can conclude requirement is a component of product scope and the functional requirements are typically used in IT and software development to describe product scope, also project scope management deal with requirement collecting which help to validate and control scope[42].'
","OsmanEtAl2019ERPCriticSucces",39,"","","","x"
"Scope: Features","functional","
`Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) identify several other attributes associated with implementation failures, including approaching ERP implementation from an excessively functional perspective, inappropriately cutting the scope of the project, eliminating user training, inadequate testing, not improving business processes initially, underestimating data quality problems, fragile human capital, and data migration problems.'
","AliEtAl2017ERPSystemImplem",680,"","","","x"
"Scope: Features","functional","
`Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline Organisational resistance Lack of organisational commitment Poor data accuracy Limited user involvement Mismatch between organisation requirements and functionalities offered Lack of readiness for integration Lack of focus on user education and training Excessive customisation Inadequate organisational analysis Costs Project duration Technical challenges Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.'
","AliEtAl2017ERPSystemImplem",681,"","","","x"
"Scope: Features","functional","
`Each new functionality has to be discussed in detail and benefits have to be weighed against the costs in order to find the best solution for the company.''

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A special focus was often put on the project manager.'
","BarthEtAl2019CriticSuccesFactor",664,"","","","x"
"Scope: Features","functional","
`Sheu, Chae, and Yang (2004) and Soh, Kien, and Tay-Yap (2000) highlighted that
there are often significant gaps between the functionality offered by ERP
systems and the one required by the adopting company.'
","BasogluEtAl2007OrganiAdoptiEnterp",80,"","","","x"
"Scope: Features","functional","
`These factors include, but not limited to, poor consultant effectiveness, ERP
software misfit, unrealistic expectations from top management concerning the ERP
systems, over-reliance on heavy customization, poor quality of Business Process
Reengineering (BPR), high turnover rate of project team members, poor IT
Infrastructure, functionality problems with the system, unclear concept of the
nature and use of the ERP system from the users perspective, too tight project
schedule, lack of formal communication, part-time dedication, etc.'
","GargEtAl2013EmpiriStudyon",498,"","","","x"
"Scope: Features","functional","
`The findings of our study reveal that `appropriate business and IT legacy
systems', `business plan/vision/goals/justification', `business process
reengineering', `change management culture and programme', `communication', `ERP
teamwork and composition', `monitoring and evaluation of performance', `project
champion', `project management', `software/system development, testing and
troubleshooting', `top management support', `data management', `ERP strategy and
implementation methodology', `ERP vendor', `organizational characteristics',
`fit between ERP and business/process', `national culture' and `country-related
functional requirement' were the commonly extracted factors across these 10
countries/regions.'
","NgaiEtAl2008ExaminCriticSucces",548,"","","","x"
"Scope: Features","functional","
`In the project context, the term scope can refer to two components[41]: Product
scope the features and functions that characterized product, service or result
Project scope its work performed to deliver a product, service or result with
specific features and functions From requirement and product scope definitions
can conclude requirement is a component of product scope and the functional
requirements are typically used in IT and software development to describe
product scope, also project scope management deal with requirement collecting
which help to validate and control scope[42].'
","OsmanEtAl2019ERPCriticSucces",39,"","","","x"
"Scope: Features","functional","
`Although classed as technology related, experience shows that business
practices developed around legacy systems can cause the biggest challenge to a
successful enterprise system implementation, and despite a product's
configurability, they can still contain many non-modifiable functionalities that
may or may not be applicable in a particular university (Yakovlev, 2001) .'
","RabaaiEtAl2016SuccesFactorEnterp",57,"","","","x"
"Scope: Features","functional","
`...mentation evaluation 22 implementation time 46 national culture 23
management of expectations 47 country related functional requirements 24 project
management 48 centralization'
","SaygiliEtAl2017EndUsersPercep",64,"","","","x"
"Scope: Features","functional","
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation
strategies (23) Management of expectations (24) Project management (32) Employee
/ team morale & motivation (33) Leadership of the project team (34) Project team
competence and composition 2 (14) Software configuration (21) IT infrastructure
(28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor
development tools (38) Use of consultants 3 (40) Project champion (46) National
culture (47) Country related functional requirements (48) Centralization 4 (1)
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Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"","","","x"
"Scope: Features","lack of fit","
`A further lack of fit with organisational culture is indicated by the extensive customisations that were required in the Jordanian organisations surveyed.'
","RabaaiEtAl2015CulturPerspeon",98,"","","","x"
"Scope: Features","package selection","
`They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.'
","AliEtAl2017ERPSystemImplem",674,"","","","x"
"Scope: Features","package selection","
`The factors identified were management and leadership, visioning and planning, ERP package selection, communication process management, training and education, project management, legacy systems management, system integration, system testing, cultural and structural changes, and performance evaluation and management.'
","Rabaai2009IdentiCriticSucces",6,"","","","x"
"Scope: Features","package selection","
`Critical success factors identified in Turkish studies Author (s) Critical Success Factors Baskak& Cetisli (2003) Top management support, business plan and vision, ERP teamwork, ERP package selection, change management, user training and education, effective communication, project management, data integration, software testing and troubleshooting, appropriate legacy systems, monitoring and evaluation of performance.'
","SaygiliEtAl2017EndUsersPercep",62,"","","","x"
"Scope: Features","package selection","
`Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","","","x"
"Scope: Features","requirements","
`They identify causes of ERP implementation failure as excessive customisation,

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dilemma of internal integration, poor understanding of business implications and
requirements, lack of change management strategy, poor data quality,
misalignment of IT with business, hidden costs, limited training, and lack of
top management support.'
",”AliEtAl2017ERPSystemImplem”,681,””,””,””,”x”
"Scope: Features”,"requirements”,"
`Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000)
Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000)
Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in
personnel Lack of discipline Organisational resistance Lack of organisational
commitment Poor data accuracy Limited user involvement Mismatch between
organisation requirements and functionalities offered Lack of readiness for
integration Lack of focus on user education and training Excessive customisation
Inadequate organisational analysis Costs Project duration Technical challenges
Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.'
",”AliEtAl2017ERPSystemImplem”,681,””,””,””,”x”
"Scope: Features”,"requirements”,"
`Consultants who are not able to demonstrate a mastery of professional
communication skills, good language capability, industrial knowledge, and
business analytical skills, are not able to provide expertise concerning project
planning, ERP systems and BPR during ERP implementation and hence cannot act as
change agents and fill the knowledge gaps (Ngai et al., 2008; Stebel, 1992;
Ganesh and Mehta, 2010; Nah and Lau, 2001) (for example, communicating with
project team members and users for acquiring business requirements, conducting
BPR and delivering professional training).'
",”GargEtAl2013EmpiriStudyon”,499,””,””,””,”x”
"Scope: Features”,"requirements”,"
`In the project context, the term scope can refer to two components[41]: Product
scope the features and functions that characterized product, service or result
Project scope its work performed to deliver a product, service or result with
specific features and functions From requirement and product scope definitions
can conclude requirement is a component of product scope and the functional
requirements are typically used in IT and software development to describe
product scope, also project scope management deal with requirement collecting
which help to validate and control scope[42].'
",”OsmanEtAl2019ERPCriticSucces”,39,””,””,””,”x”
"Scope: Features”,"requirements”,"
`Considerable customisation was required in both sectors, and the traditional
style of management in Jordan did not fit well with the requirements for
successful implementation.'
",”RabaaiEtAl2015CulturPerspeon”,83,””,””,””,”x”
"Scope: Features”,"requirements”,"
`...mentation evaluation 22 implementation time 46 national culture 23
management of expectations 47 country related functional requirements 24 project
management 48 centralization'
",”SaygiliEtAl2017EndUsersPercep”,64,””,””,””,”x”
"Scope: Features”,"requirements”,"
`This paper offers the following suggestion in order to achieve the best out of
an ERP system for Malaysia agriculture industry: ● A company must concentrate on
the quality of integration between company requirements and ERP scope.'
",”ShukorEtAl2020EnterpResourPlanni”,2055,””,””,””,”x”
"Scope: Features”,"scope management”,"
`(4) The Project Management factor in this study is defined by team composition,
project team competence, scope management, expectation management, communication
within project team and budget control items which may affect the success of ERP
implementation in Indian retail sector.'
",”GargEtAl2015FactorAffectERP”,1332,””,””,””,”x”
"Scope: Features”,"scope management”,"
```

`In the project context, the term scope can refer to two components[41]: Product scope the features and functions that characterized product, service or result Project scope its work performed to deliver a product, service or result with specific features and functions From requirement and product scope definitions can conclude requirement is a component of product scope and the functional requirements are typically used in IT and software development to describe product scope, also project scope management deal with requirement collecting which help to validate and control scope[42].'
","OsmanEtAl2019ERPCriticSucces",39,"","","","x"
"Scope: Features","selection of ERP","
`Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.'
","FinneyEtAl2007ERPImplemCompil",340,"","","","x"
"Scope: Features","selection of ERP","
`Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) ● Communication within the company ● Organization resistance ● Project budget ● Project management ● Implementation strategy ● Strategic goals and objectives ● Business process reengineering ● organizational culture ● knowledge base of the company ● Project planning and control ● Facilitating conditions ● Organization size ● The vision of the organization ● Readiness of organizations ● Clarity of potential cost ● User involvement ● Selection of vendor/consult ant ● Project team ● Top management support ● Training of user ● Trust on vendor ● Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender ● Highest degree attained ● Selection of ERP package ● IT infrastructure ● Data integrity and system testing.'
","HuangEtAl2021CriticSuccesFactor",4686,"","","","x"
"Scope: Minimal Customisation","customisation","
`They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.'
","AliEtAl2017ERPSystemImplem",674,"","x","",""
"Scope: Minimal Customisation","customisation","
`Important CSFs identified are: ERP team work and composition, top management support, business plan and vision, effective communication, project management, project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and evaluation of performance.'
","AliEtAl2017ERPSystemImplem",675,"","x","",""
"Scope: Minimal Customisation","customisation","
`They identify causes of ERP implementation failure as excessive customisation,

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dilemma of internal integration, poor understanding of business implications and
requirements, lack of change management strategy, poor data quality,
misalignment of IT with business, hidden costs, limited training, and lack of
top management support.'
","AliEtAl2017ERPSystemImplem",681,"","x","",""
"Scope: Minimal Customisation","customisation","
`Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000)
Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000)
Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in
personnel Lack of discipline Organisational resistance Lack of organisational
commitment Poor data accuracy Limited user involvement Mismatch between
organisation requirements and functionalities offered Lack of readiness for
integration Lack of focus on user education and training Excessive customisation
Inadequate organisational analysis Costs Project duration Technical challenges
Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.'
","AliEtAl2017ERPSystemImplem",681,"","x","",""
"Scope: Minimal Customisation","customisation","
`Lesser, but still important CSFs are, having a good business plan, vision,
having a project champion, appropriate business and legacy systems, change
management programmes, culture, BPR, minimum customisation, software
development, testing, trouble shooting, monitoring, and the evaluation of
performance (Markus, Axline, Petrie and Tanis, 2000; Bancroft et al., 1998;
Bingi et al., 1999; Nah et al., 2001; Umble et al., 2003; Ehie and Madsen, 2005;
Sarkar and Lee, 2003; Umble et al., 2003; Kim et al., 2005; Motwani et al.,
2005; Nah and Delgado, 2006; Maguire et al., 2010).'
","AliEtAl2017ERPSystemImplem",682,"","x","",""
"Scope: Minimal Customisation","customisation","
`The most common causes of ERP implementation failures are a combination of poor
planning and high software customisation (Scheer and Habbermann, 2000), lack of
top management commitment; ineffective communication; insufficient training;
lack of user support, poor project management, relying on legacy systems, inter-
departmental conflicts, poor composition of project teams, failure in
redesigning business processes and, lack of clarity about required changes.'
","AliEtAl2017ERPSystemImplem",682,"","x","",""
"Scope: Minimal Customisation","customisation","
`Eleven critical factors were identified, such as ERP teamwork and composition,
change management program and culture, top management support, business plan and
vision, business process reengineering (BPR) and minimum customisation,
effective communications, project management, software development, testing and
troubleshooting, monitoring and evaluating performance, project champion, and
appropriate business and IT legacy systems.'
","Rabaai2009IdentiCriticSucces",6,"","x","",""
"Scope: Minimal Customisation","customisation","
`Disruption to staff and resistance to received `best practices', together with
required training, data mapping, customisations and their support, complexity of
integration with remaining legacy systems are all commonly reported, and are
often ongoing issues post-implementation.'
","RabaaiEtAl2015CulturPerspeon",86,"","x","",""
"Scope: Minimal Customisation","customisation","
`If 92 A.A. Rabaa'i and E. AlJamal organisational structures are lacking in
rigorous lines of authority, as Hutchings and Weir suggest, the culture imposed
by ERPs may not fit without major customisation or culture change, attitudes to
which may differ between the traditional public sector and emerging private
enterprises.'
","RabaaiEtAl2015CulturPerspeon",91,"","x","",""
"Scope: Minimal Customisation","customisation","
`In both sectors half of all respondents strongly agreed that `major
customisation was required'.'
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","RabaaiEtAl2015CulturPerspeon",95,"","x","",""
"Scope: Minimal Customisation","customisation","
`A further lack of fit with organisational culture is indicated by the extensive
customisations that were required in the Jordanian organisations surveyed.'
","RabaaiEtAl2015CulturPerspeon",98,"","x","",""
"Scope: Minimal Customisation","customisation","
`Customisation increases project time, ruins schedules, introduce new bugs into
the system, and make the upgrade to new release harder (Shehab et al. 2004).'
","RabaaiEtAl2015CulturPerspeon",98,"","x","",""
"Scope: Minimal Customisation","customisation","
`Customisation within any culture should therefore be avoided, or at least
minimised, in order to achieve the full benefits of an ERP system.'
","RabaaiEtAl2015CulturPerspeon",98,"","x","",""
"Scope: Minimal Customisation","customization","
`This is also emphasized by Koch and Mitteregger (2016), who have shown that
amount of customization during implementation affects support costs in
maintenance, similar to Light (2001).'
","BarthEtAl2019CriticSuccesFactor",659,"","x","",""
"Scope: Minimal Customisation","customization","
`ERP customization at an acceptable level brings some advantages to the
organizations, like lower user resistance, reduced training needs and more
organizational adaptation (Bingi et al., 1999; Hong & Kim, 2002).'
","BasogluEtAl2007OrganiAdoptiEnterp",88,"","x","",""
"Scope: Minimal Customisation","customization","
`Work practices, poor data quality, BPR activities, customization of the ERP
system, internal staff adequacy, training, top management support, quality of
consultants are the main problems (Genoulaz & Millet, 2006).'
","BasogluEtAl2007OrganiAdoptiEnterp",89,"","x","",""
"Scope: Minimal Customisation","customization","
`ERP customization at an acceptable level is an important determinant of
organizational adoption (Bingi et al., 1999; Hong & Kim, 2002).'
","BasogluEtAl2007OrganiAdoptiEnterp",90,"","x","",""
"Scope: Minimal Customisation","customization","
`Therefore, organizations should be willing to adjust their processes, so as to
fit with the new software and minimize the degree of customization needed [34].'
","ChatzoglouEtAl2016AnteceOutcomERP",1255,"","x","",""
"Scope: Minimal Customisation","customization","
`These factors include, but not limited to, poor consultant effectiveness, ERP
software misfit, unrealistic expectations from top management concerning the ERP
systems, over-reliance on heavy customization, poor quality of Business Process
Reengineering (BPR), high turnover rate of project team members, poor IT
Infrastructure, functionality problems with the system, unclear concept of the
nature and use of the ERP system from the users perspective, too tight project
schedule, lack of formal communication, part-time dedication, etc.'
","GargEtAl2013EmpiriStudyon",498,"","x","",""
"Scope: Minimal Customisation","customization","
`in Indian retail sector (2) The ``Technological'' factor in this study is
defined by Implementation strategy, Adequate IT infrastructure, Minimal
customization and Data conversion and accuracy items which may affect the
success of ERP implementation in Indian retail sector.'
","GargEtAl2015FactorAffectERP",1331,"","x","",""
"Scope: Minimal Customisation","customization","
`P13: A certain level of business process re-engineering (BPR) and minimal
customization of ERP software system to fit into current processes of the
organization is positively related to ERP implementation success.'
","KhattakEtAl2013InvestCriticSucces",48,"","x","",""
"Scope: Minimal Customisation","customization","
`The complexity and magnitude of the efforts required may deter organizations
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from the approach of ERP customization.'
","NgaiEtAl2008ExaminCriticSucces",551,"","x","",""
"Scope: Minimal Customisation","customization","
`In literature, BPR and minimal customization is the third most commonly cited
CSF.'
","OsmanEtAl2019ERPCriticSucces",38,"","x","",""
"Scope: Minimal Customisation","customization","
`Disruption to staff and resistance to received ``best practices'', together
with required training, data mapping, customizations and their support,
complexity of integration with remaining legacy systems are all commonly
reported, and are often ongoing issues post-implementation.'
","RabaaiEtAl2016SuccesFactorEnterp",46,"","x","",""
"Scope: Minimal Customisation","customization","
`ERP failure factors and categories Failure Categories Failure Factors C4:
Project Management F1: Conflicts between organization and consultants/ vendor
C5: Technical F2: High rate of system customization C5: Technical F3: Data
management issues C2: Human Resources F4: Inadequate education and training C2:
Human Resources F5: Inadequate user involvement C2: Human Resources F6:
Ineffective communications system C3: Organizational F7: Internal conflicts
between departments C2: Human Resources F8: Inadequate change management C3:
Organizational F9: Lack of performance measurement system C3: Organizational
F10: Misfit between organization culture and ERP system C3: Organizational F11:
Misfit between organization structure and ERP system C3: Organizational F12:
Misfits between the IT and business strategies C1: Environmental F13:
Environmental pressures C3: Organizational F14: Poor business process
reengineering C1: Environmental F15: Poor consultant C4: Project Management F16:
Poor project management C4: Project Management F17: Poor risk management C3:
Organizational F18: Poor top management support C5: Technical F19: IT Technical
issues C2: Human Resources F20: Language barriers C4:...'
","RavasanEtAl2014FCM-BaDynamiModeli",42,"","x","",""
"Scope: Minimal Customisation","customization","
`But as mentioned before, international ERPs need major customizations to fit
Iranian organizations' structures and processes which is the source of future
problems in system performance.'
","RavasanEtAl2014FCM-BaDynamiModeli",46,"","x","",""
"Scope: Minimal Customisation","customization","
`ERP customization failure: Institutionalized accounting practices, power
relations and market forces.'
","RavasanEtAl2014FCM-BaDynamiModeli",49,"","x","",""
"Scope: Minimal Customisation","customization","
`Item Description 1 top management support 25 application project costs 2
effective communication 26 interdepartmental cooperation 3 interdepartmental
communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor
relations 5 business plan-vision 29 ongoing vendor support 6 change management
30 use of vendor's development tools 7 education on new business process 31
organizational characteristics 8 user training& education 32 employee / team
morale-motivation 9 user acceptance 33 leadership of the project team 10
managing cultural change 34 project team competence- composition 11 business
process reengineering 35 ERP team work 12 customization 36 steering committee 13
minimal customization 37 empowered decision makers 14 software configuration 38
use of consultants 15 data accuracy 39 obtain business analysts 16 data
analysis- conversion 40 project champion 17 software development testing &
troubleshooting 41 appropriate business-legacy systems 18 implementation
strategies 42 data integration 19 ERP package selection 43 scope & vision based
performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of
performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","x","",""
"Scope: Minimal Customisation","customization","
```

`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"","x","",""
"Scope: Minimal Customisation","customization","
`● IT infrastructure ● System Training and knowledge transfer ● Over-dependence on detailed and heavy customization ● High turnover rate of project team members ● Business process re-engineering ● User's resistance to transform ● ERP system misfit Considering these critical factors, specifically affecting the agricultural business sectors in Malaysia, there are a few possible suggestions proposed.'
","ShukorEtAl2020EnterpResourPlanni",2055,"","x","",""
"Short-term Thinking (-)","short term","
`In summary, achieving short term operational goals is of more importance in Iranian industries, rather than long term plans, which is on the contrary with ERP philosophy.'
","AmidEtAl2012IdentiClassiERP",231,"","","","x"
"Short-term Thinking (-)","short term","
`With regard to the former point, it is of great importance to note that companies implementing ERP system encounter problems associated to start-up matters which consequently bring about a performance dip instantly after the implementation in the short term [131 - 132].'
","ShukorEtAl2020EnterpResourPlanni",2054,"","","","x"
"Short-term Thinking (-)","short-term","
`LITERATURE REVIEW An ERP system entails long-term application processes (strategic level) and short-term applications (operational level).'
","ChatzoglouEtAl2016AnteceOutcomERP",1254,"","","","x"
"Short-term Thinking (-)","short-term","
`Meanwhile, ERP implementation is not a short-term project lasting only two or three months, but a longterm program which may last for one or quite a few years.'
","GargEtAl2014CriticSuccesFactor",418,"","","","x"
"Short-term Thinking (-)","short-term","
`In addition to the flexibility that they prefer to retain, Chinese leaders are less willing to invest in the longterm development of company infrastructure such as in technology adoption, internal human resources, and processes since they are thrifty, and focus on short-term profit maximization [15].'
","NgaiEtAl2008ExaminCriticSucces",558,"","","","x"
"Short-term Thinking (-)","short-term","
`However, the failure to provide significant resources for these purposes has seen short-term gains, but end-user ignorance and discontinuance have led to long- term failure.'
","Rabaai2009IdentiCriticSucces",9,"","","","x"
"Short-term Thinking (-)","short-term","
`At the organisational level public sector organisations have more rigid hierarchies and structures, and more paperwork, while at the environmental level public sector organisations are more strongly influenced by the Cultural perspectives on ERP implementation in Jordan 85 political rather than the

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economic environment, entailing strong measures of accountability, short-term
vision and public monitoring of performance.'
","RabaaiEtAl2015CulturPerspeon",84,"","","","x"
"Short-term Thinking (-)","short-term","
`While the results suggested most respondents considered the training adequate,
it can be argued that the failure to provide significant resources for training
purposes has seen short-term gains, but ultimately end-users ignorance and 98
A.A. Rabaa'i and E. AlJamal system rejection led to long-term failure.'
","RabaaiEtAl2015CulturPerspeon",97,"","","","x"
"Short-term Thinking (-)","short-term","
`However, the failure to provide significant resources for these purposes has
seen short-term gains, but end-user ignorance and discontinuance have led to
long- term failure.'
","RabaaiEtAl2016SuccesFactorEnterp",53,"","","","x"
"Short-term Thinking (-)","short-term","
`Senior management often assumes that performance will increase instantly after
the initial implementation, whereas a short-term decline in effectiveness and
productivity is the general rule [Yu 2005].'
","ShaulEtAl2013CriticSuccesFactor",19,"","","","x"
"Software & Hardware Configuration","configuration","
`The merchant of ERP software normally endorse which hardware and hardware
configuration must be utilized to run the ERP system (Al-Mashari, 2002; Yasser,
2000).'
","AnjumEtAl2015FactorManipuERP",629,"","x","","
"Software & Hardware Configuration","configuration","
`The high expectation of achieving all-round cost savings and service
improvements is very much dependent on how good the chosen ERP system fits to
the organizational functionalities and how well the tailoring and configuration
process of the system matches with the business culture, strategy and structure
of the organization (Rashid, Hossain, & Patrick, 2002).'
","BasogluEtAl2007OrganiAdoptiEnterp",74,"","x","","
"Software & Hardware Configuration","configuration","
`Control and coordination in global ERP configuration.'
","BasogluEtAl2007OrganiAdoptiEnterp",94,"","x","","
"Software & Hardware Configuration","configuration","
`A whole commitment from the organization has become one of the critical success
factors (CSF) but the temporary nature of projects in the construction industry
with constantly shifting partners, each with their own individual objectives and
working practices makes it difficult to achieve the ideal ICT configurations.'
","Chan2013AustraQuantiSurvey",107,"","x","","
"Software & Hardware Configuration","configuration","
`The need to conduct BPR and software configuration was the third most commonly
cited CSF.'
","FinneyEtAl2007ERPImplemCompil",337,"","x","","
"Software & Hardware Configuration","configuration","
`Table III reveals that the five most widely cited categories, top management
commitment and support, change management, BPR and software configuration,
training and job redesign, and project team: the best and brightest, are
significantly more often researched than the others.'
","FinneyEtAl2007ERPImplemCompil",339,"","x","","
"Software & Hardware Configuration","configuration","
`Frequency analysis of CSFs in literature CSF category Top management commitment
and support Change management BPR and software configuration Training and job
redesign Project team: the best and brightest Implementation strategy and
timeframe Consultant selection and relationship Visioning and planning Balanced
team Project champion Communication plan IT infrastructure Managing cultural
change Post-implementation evaluation Selection of ERP Team morale and
motivation Vanilla ERP Project management Troubleshooting/crises management
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Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.'
","FinneyEtAl2007ERPImplemCompil",340,"","x","",""
"Software & Hardware Configuration","configuration","
`The poor quality of BPR led to incorrect system configuration problems and hence failed implementation.'
","GargEtAl2013EmpiriStudyon",499,"","x","",""
"Software & Hardware Configuration","configuration","
`The ERP software vendor generally certifies which hardware (and hardware configurations) must be used to run the ERP system (Al-Mashari, 2002; Yasser, 2000).'
","GargEtAl2014FactorInflueERP",432,"","x","",""
"Software & Hardware Configuration","configuration","
`In addition to this IT infrastructure, the software configuration has critical influence on the success of ERP implementation.'
","GargEtAl2015FactorAffectERP",1331,"","x","",""
"Software & Hardware Configuration","configuration","
`Moreover, end-users involvement is helpful in the ERP configuration analysis and in data conversion as well as in system testing.'
","OsmanEtAl2019ERPCriticSucces",38,"","x","",""
"Software & Hardware Configuration","configuration","
`But change management goes far beyond technical change or configuration requests and strikes at the heart of an organisation's culture and identity.'
","RabaaiEtAl2016SuccesFactorEnterp",55,"","x","",""
"Software & Hardware Configuration","configuration","
`Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","x","",""
"Software & Hardware Configuration","configuration","
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User

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acceptance (10) Managing cultural change this result maybe, end-users resist
changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"","x","",""
"Software & Hardware Configuration","configuration","
`To prepare the technical system, Davenport (2000) describes the following
processes: configuration, interface development, data standardization and
conversion, testing and performance management.'
","SethEtAl2015DeveloModelSucces",250,"","x","",""
"Software & Hardware Development","software development","
`Important CSFs identified are: ERP team work and composition, top management
support, business plan and vision, effective communication, project management,
project champion, appropriate business and legacy systems, change management
programmes, culture, BPR, minimum customisation, software development, testing,
trouble shooting, monitoring, and evaluation of performance.'
","AliEtAl2017ERPSystemImplem",675,"","x","",""
"Software & Hardware Development","software development","
`Lesser, but still important CSFs are, having a good business plan, vision,
having a project champion, appropriate business and legacy systems, change
management programmes, culture, BPR, minimum customisation, software
development, testing, trouble shooting, monitoring, and the evaluation of
performance (Markus, Axline, Petrie and Tanis, 2000; Bancroft et al., 1998;
Bingi et al., 1999; Nah et al., 2001; Umble et al., 2003; Ehie and Madsen, 2005;
Sarkar and Lee, 2003; Umble et al., 2003; Kim et al., 2005; Motwani et al.,
2005; Nah and Delgado, 2006; Maguire et al., 2010).'
","AliEtAl2017ERPSystemImplem",682,"","x","",""
"Software & Hardware Development","software development","
`Two researchers conducted a research study on the success issues of ERP which
identified ten successive issues through investigate ten selective articles
which are: effective decision making, Business Plan and vision, project
management, effective communication, testing and troubleshooting, appropriate
business and legacy system, ERP teamwork and composition, top management support
and software development (Nah and Lau, 2001).'
","AnjumEtAl2015FactorManipuERP",628,"","x","",""
"Software & Hardware Development","software development","
`Software Development: Software and user interface development is in relation to
change in software or interfaces to meet the organization and users'
requirements include local languages.'
","Chan2013AustraQuantiSurvey",109,"","x","",""
"Software & Hardware Development","software development","
`Developing software systems is an expensive, and often a difficult process as
software development projects are affected by a series of problems, such as poor
project management, cost and schedule overruns, poor quality software and under-
motivated developers.'
","GargEtAl2013EmpiriStudyon",500,"","x","",""
"Software & Hardware Development","software development","
`Software development, testing, and troubleshooting To enjoy the full benefits
of implementation, various ERP software or packages are required to integrate
the ERP system into the organization [10].'
","NgaiEtAl2008ExaminCriticSucces",556,"","x","",""
"Software & Hardware Development","software development","
`In the project context, the term scope can refer to two components[41]: Product
scope the features and functions that characterized product, service or result
Project scope its work performed to deliver a product, service or result with
specific features and functions From requirement and product scope definitions
can conclude requirement is a component of product scope and the functional
requirements are typically used in IT and software development to describe
product scope, also project scope management deal with requirement collecting
which help to validate and control scope[42].'
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","OsmanEtAl2019ERPCriticSucces",39,"","x","","",""
"Software & Hardware Development","software development","
`Eleven critical factors were identified, such as ERP teamwork and composition, change management program and culture, top management support, business plan and vision, business process reengineering (BPR) and minimum customisation, effective communications, project management, software development, testing and troubleshooting, monitoring and evaluating performance, project champion, and appropriate business and IT legacy systems.'
","Rabaai2009IdentiCriticSucces",6,"","x","","",""
"Software & Hardware Development","software development","
`Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","x","","",""
"Software & Hardware Development","software modification","
`To avoid ERP software modifications which were perceived as slowing down the project, the cause of risky bugs needing to be rewritten in an upgrade, many organizations were committed to a ``vanilla'' implementation [Al-Mudimigh 2007; Finney and Corbett 2007].'
","ShaulEtAl2013CriticSuccesFactor",9,"","x","","",""
"Software & Hardware Development","system development","
`The findings of our study reveal that `appropriate business and IT legacy systems', `business plan/vision/goals/justification', `business process reengineering', `change management culture and programme', `communication', `ERP teamwork and composition', `monitoring and evaluation of performance', `project champion', `project management', `software/system development, testing and troubleshooting', `top management support', `data management', `ERP strategy and implementation methodology', `ERP vendor', `organizational characteristics', `fit between ERP and business/process', `national culture' and `country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.'
","NgaiEtAl2008ExaminCriticSucces",548,"","x","","",""
"Steering Committee","steering committee","
`They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.'
","AliEtAl2017ERPSystemImplem",674,"","","","","x"
"Steering Committee","steering committee","

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`Somers and Nelson (2004) showed that the importance of individual actors and
activities within the company over the life cycle of an ERP system is not
constant, for example a steering committee and change management lose importance
in the later phases.'
","BarthEtAl2019CriticSuccesFactor",659,"","","","x"
"Steering Committee","steering committee","
`Somers and Nelson (2001, 2004) also advocate the need to establish a steering
committee comprised of senior management from different corporate functions,
senior project management reps, and ERP end-users.'
","FinneyEtAl2007ERPImplemCompil",336,"","","","x"
"Steering Committee","steering committee","
`Steering committee members should be involved in ERP selection, monitoring
during implementation and management of outside consultants.'
","FinneyEtAl2007ERPImplemCompil",336,"","","","x"
"Steering Committee","steering committee","
`This could be achieved by being an active member of a Steering Committee: a
team comprised of the company's core hands-on representatives and decision
makers, with effectively defining the goals and requirements of the ERP
project.'
","GargEtAl2014CriticSuccesFactor",418,"","","","x"
"Steering Committee","steering committee","
`Kamhawi, 2007 F6 Use of Steering Committee for control purpose Gupta &
Raghunathan, 1989; Mabert et al.,2003; Browen et al.,2007; Ngai et al.,2008;
Zhang et al.,2003.'
","KhattakEtAl2013InvestCriticSucces",47,"","","","x"
"Steering Committee","steering committee","
`In all the cases, either successful or unsuccessful, the PMs were supposed to
report to almost different personnel in their respective enterprises for
example; to organizational head/chief, steering committee and senior manager of
a business unit.'
","KhattakEtAl2013InvestCriticSucces",53,"","","","x"
"Steering Committee","steering committee","
`P6: All the organizations with successful cases of ERP system implementation,
surveyed in the current study, properly constituted steering committees for the
purpose of monitoring and controlling of the activities related to the ERP
project implementation.'
","KhattakEtAl2013InvestCriticSucces",59,"","","","x"
"Steering Committee","steering committee","
`The steering committee was to be headed by different personnel in different
enterprises i.e., in some cases it was to be headed by Chairman or President
while in others CEO or GM or CIO was the head of the same.'
","KhattakEtAl2013InvestCriticSucces",59,"","","","x"
"Steering Committee","steering committee","
`The presence of steering committee was absolutely lacking in the enterprises
where the ERP implementation got collapsed and did not accomplished on time and
under/within allocated budget.'
","KhattakEtAl2013InvestCriticSucces",60,"","","","x"
"Steering Committee","steering committee","
`In Chinese context, ERP project is seen as the utilization of such a project to
promote deployment and automation of effective processes and to enhance
organizational effectiveness to which the project management efforts of the
steering committee are crucial.'
","KhattakEtAl2013InvestCriticSucces",66,"","","","x"
"Steering Committee","steering committee","
`Whereas, in Pakistani context the steering committee efforts for control
purpose are less important as the controlled is mostly exercised by the project
manager or top manager.'
","KhattakEtAl2013InvestCriticSucces",66,"","","","x"
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"Steering Committee","steering committee","
`The research concludes that: (1) Quality (adequacy) and quantity of training and education of personnel/users, role and effectiveness of management in reducing the users' resistance, use of steering committee for control purpose, top management support or involvement, clearly specified goals/objectives/scope regarding ERP system, ease of system's use and users' acceptance, vendor's support, project management, effective communication among the organizational members and a balanced team for ERP implementation are practically considered by the successful enterprises in China while planning and going for the implementation of the ERP system and are thus critical for the success of ERP systems implementation projects, ignoring of which may cause implementation failure in the Chinese organizations; (2) Some of the factors deemed imperative for ERP systems implementation success in the literature like; selection of a right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role of consultant, change management strategy and programs, competency in use of IT and IT infrastructure, business...'
","KhattakEtAl2013InvestCriticSucces",68,"","","","x"
"Steering Committee","steering committee","
`A steering committee should be established with members committed to participate in project team meetings, to closely monitor the progress of the project, and to provide clear direction to the project [54,88].'
","NgaiEtAl2008ExaminCriticSucces",557,"","","","x"
"Steering Committee","steering committee","
`For example, the Australian Vice Chancellor's Committee (AVCC) created the Core Australian Specification for Management and Administrative Computing (CASMAC) steering committee in 1991 (AVCC, 1996).'
","Rabaai2009IdentiCriticSucces",3,"","","","x"
"Steering Committee","steering committee","
`Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","","","x"
"Steering Committee","steering committee","
`On the other hand, other factors referring to project management like steering committee and empowered decision makers were not recognized by end-users.'
","SaygiliEtAl2017EndUsersPercep",68,"","","","x"
"Steering Committee","steering committee","
`Such consequences can be avoided by open communication with top management, vendors, and consultants through the establishment of senior and professional steering committees, a balanced project team, and a ``responsible'' definition of success measures.'
","ShaulEtAl2013CriticSuccesFactor",19,"","","","x"
"Steering Committee","steering committee","
`These activities are run by a professional steering committee in which

``lowlevel'' stakeholders get a chance to air their views and reduce
uncertainties regarding business concerns.'
","ShaulEtAl2013CriticSuccesFactor",20,"","","","x"
"System Architecture","architecture","
`At the operational level, Gable (1998) defines ERP as a ``comprehensive
packaged software solution, which seeks to integrate the complete range of
business processes and functions in order to present a holistic view of the
business from a single information and IT architecture''.'
","AliEtAl2017ERPSystemImplem",668,"","","","x"
"System Architecture","architecture","
`They rate CSFs by a degree of importance during ERP implementation as follows:
(1) top management support; (2) project team competence; (3) inter-departmental
cooperation; (4) clear goals and objectives; (5) project management; (6) inter-
departmental communication; (7) management of expectation; (8) project champion;
(9) vendors' support; (10) careful package selection; (11) data analysis and
conversion; (12) dedicated resources; (13) use of steering committee; (14) user
training on software; (15) education on new business processes; (16) BPR; (17)
minimal customisation; (18) architecture choices; (19) change management; (20)
partnership with vendors; (21) use of vendors' tool; and (22) use of
consultant.'
","AliEtAl2017ERPSystemImplem",674,"","","","x"
"System Architecture","architecture","
`In addition, the effect of other on-going projects, including the management of
the overall IT architecture, and nonavailability of resources for organisational
transformation, are the most critical risk factors for implementation.'
","AliEtAl2017ERPSystemImplem",678,"","","","x"
"System Architecture","architecture","
`Technical issues like system architecture, language, data modeling and ERP
integration with other systems like Supply Chain Management (SCM) systems are
other branches that have made a contribution.'
","BasogluEtAl2007OrganiAdoptiEnterp",79,"","","","x"
"System Architecture","architecture","
`It is critical to assess the IT readiness of the organization, including the
architecture and skills (Tarafdar and Roy, 2003; Somers and Nelson, 2001; Somers
and Nelson, 2004; Bajwa et al., 2004; Siriginidi, 2000a, b).'
","FinneyEtAl2007ERPImplemCompil",338,"","","","x"
"System Architecture","architecture","
`This unique network architecture provides expert care to our patients and a
level of confidence in receiving the latest medicine has to offer.'
","GargEtAl2014CriticSuccesFactor",407,"","","","x"
"System Architecture","architecture","
`Therefore, it is critical to evaluate company's current IT readiness, including
architecture and skills, before implementation.'
","OsmanEtAl2019ERPCriticSucces",39,"","","","x"
"System Architecture","architecture","
`QUT uses an explicit Enterprise Architecture model as a tool for planning and
prioritization to help achieve both strong ROI and ensure efficient business
operations that are aligned to the blueprint.'
","RabaaiEtAl2016SuccesFactorEnterp",56,"","","","x"
"System Architecture","architecture","
`When QUTs Constellar hub was replaced with a service oriented architecture
solution around 2011 the activity completion report noted a successful
completion of the project with all project benefits realised.'
","RabaaiEtAl2016SuccesFactorEnterp",56,"","","","x"
"System Architecture","architecture","
`The recent direction has been towards a real time integration using a service
oriented architecture such that every touchpoint for the student system
communicates both ways using web services.'

","RabaaiEtAl2016SuccesFactorEnterp",56,"","","","x"
"System Integration","integration","
`The authors report risk factors such as loss of qualified IT experts after implementation, inaccurate master production schedules, user resistance, loss of ERP-related know-how, lack of vendor support, failure to produce an appropriate material requirement plan, and inefficient integration between modules are primary risk factors that can affect the viability of ERP projects.'
","AliEtAl2017ERPSystemImplem",678,"","x","",""
"System Integration","integration","
`They identify causes of ERP implementation failure as excessive customisation, dilemma of internal integration, poor understanding of business implications and requirements, lack of change management strategy, poor data quality, misalignment of IT with business, hidden costs, limited training, and lack of top management support.'
","AliEtAl2017ERPSystemImplem",681,"","x","",""
"System Integration","integration","
`Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline Organisational resistance Lack of organisational commitment Poor data accuracy Limited user involvement Mismatch between organisation requirements and functionalities offered Lack of readiness for integration Lack of focus on user education and training Excessive customisation Inadequate organisational analysis Costs Project duration Technical challenges Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.'
","AliEtAl2017ERPSystemImplem",681,"","x","",""
"System Integration","integration","
`Lack of proper integration and knowledge of business process reengineering are other problems of local solutions.'
","AmidEtAl2012IdentiClassiERP",229,"","x","",""
"System Integration","integration","
`Through data integration, ERP systems eliminate counter-productive processes and cross-functional coordination problems that hinder the integration of organizations.'
","BasogluEtAl2007OrganiAdoptiEnterp",73,"","x","",""
"System Integration","integration","
`Technical issues like system architecture, language, data modeling and ERP integration with other systems like Supply Chain Management (SCM) systems are other branches that have made a contribution.'
","BasogluEtAl2007OrganiAdoptiEnterp",79,"","x","",""
"System Integration","integration","
`The architecture of the software facilitates transparent integration of modules providing flow of information amongall functions within the enterprise in a consistently visible manner (2002).'
","Chan2013AustraQuantiSurvey",104,"","x","",""
"System Integration","integration","
`The main reasons among many others as to why the Chinese enterprises faced the kind of challenges include data maintenance and integration problems, system integration problems (Lai, 2006), the involvement of knowledgeable consultants in respective projects, selection of reputable vendors, low implementation experience, weak or unsophisticated IT infrastructure, lack of access to knowledge and human resource etc., to name some of few.'
","KhattakEtAl2013InvestCriticSucces",43,"","x","",""
"System Integration","integration","
`However, the integration of software is not an easy task, and should be managed properly.'
","NgaiEtAl2008ExaminCriticSucces",556,"","x","",""
"System Integration","integration","

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`The factors identified were management and leadership, visioning and planning,
ERP package selection, communication process management, training and education,
project management, legacy systems management, system integration, system
testing, cultural and structural changes, and performance evaluation and
management.'
","Rabaai2009IdentiCriticSucces",6,"","x","",""
"System Integration","integration","
`Hence, the integration of data from the organisation's wider system is
essential in ensuring the successful implementation of an ERP system (e.g.'
","Rabaai2009IdentiCriticSucces",11,"","x","",""
"System Integration","integration","
`Other critical factors include visioning and planning, consultant selection and
relationship, effective communication plan, ERP system selection, ERP systems
integration, and post-implementation evaluation measures.'
","Rabaai2009IdentiCriticSucces",11,"","x","",""
"System Integration","integration","
`This paper aims to address different areas of emphasis, including: (i) ERP
adoption decisions, (ii) ERP selection, (iii) customisation procedures, (iv)
integration aspects, (v) role of consultants, and (vi) ERP system evaluation;
each of which has been raised in the literature as an important area of
interest, and all of which are among the most commonly reported challenges.'
","RabaaiEtAl2009ERPSystemHigher",457,"","x","",""
"System Integration","integration","
`US HEIs viewed ERP adoption as a method of gaining greater integration of their
management systems to better manage increasingly complex operations (Frantz,
2001).'
","RabaaiEtAl2009ERPSystemHigher",457,"","x","",""
"System Integration","integration","
`While the interviews were far-ranging and insights rich and many, distillation
of the evidence surfaced the following six main areas of emphasis: (i) ERP
adoption decisions, (ii) ERP selection, (iii) customisation procedures, (iv)
integration aspects, (v) role of consultants, and (vi) ERP system evaluation at
QUT; each of which has been raised in the literature as an important area of
interest, and all of which are among the most commonly reported challenges
(e.g.'
","RabaaiEtAl2009ERPSystemHigher",460,"","x","",""
"System Integration","integration","
`Best-of-breed offers organisations more choice and flexibility with
functionality, but can complicate integration and implementation (Miranda,
1999).'
","RabaaiEtAl2009ERPSystemHigher",461,"","x","",""
"System Integration","integration","
`Moreover, the integration of organisation-wide data is essential to ensure the
successful implementation of an ERP system (Somers and Nelson, 2001).'
","RabaaiEtAl2009ERPSystemHigher",463,"","x","",""
"System Integration","integration","
`However, as suggested earlier, a best-of-breed approach has limitations, an
obvious potential complication being integration of different vendors' modules
and legacy modules.'
","RabaaiEtAl2009ERPSystemHigher",463,"","x","",""
"System Integration","integration","
`So, systems integration is working well at QUT, but I'm not totally satisfied
as a number of our systems are still using batched or cycling run integration
rather than using real-time integration.'' (The associate IT director at QUT,
Personal Communication, 3rd of March, 2009).'
","RabaaiEtAl2009ERPSystemHigher",463,"","x","",""
"System Integration","integration","
`However, the integration can be done better; what we really would like to see
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is a real-time or immediate integration between the various systems.'' (The
business manager of Archibus/FM, Personal Communication, 6th of November,
2008).'
","RabaaiEtAl2009ERPSystemHigher",463,"","x","",""
"System Integration","integration","
`Even though I think that the integration process between these systems can be
done better, but I believe that our integration process is running smoothly.''
(The business manager of BEIMS, Personal Communication, 4th of Novermber,
2008).'
","RabaaiEtAl2009ERPSystemHigher",464,"","x","",""
"System Integration","integration","
`Also, the business manager of the Syllabus Plus, a system that prepares QUT's
class and examination timetables, which was implemented at QUT in 1998, said:
``Syllabus Plus is actually integrated with many systems at QUT, ERP packages
and in-house built applications, which make the integration between these
systems a bit problematic.'
","RabaaiEtAl2009ERPSystemHigher",464,"","x","",""
"System Integration","integration","
`However, the strength of the best-of-breed approach is you get the richest
functionality in each of the area you are looking at, but the problem with that
you then need to do your own integration.'
","RabaaiEtAl2009ERPSystemHigher",464,"","x","",""
"System Integration","integration","
`So this was the first stage of our integration process, where, for example, the
Payroll system is interfaced with the Financials system.'
","RabaaiEtAl2009ERPSystemHigher",464,"","x","",""
"System Integration","integration","
`The second phase of the integration process we followed, is that you want the
integration to be a bit more active, and therefore instead of interfacing the
systems; you actually have some form of a tool, that's called a transformational
tool, that allows to perform the integration in an active way.'
","RabaaiEtAl2009ERPSystemHigher",464,"","x","",""
"System Integration","integration","
`The associate IT director at QUT gave more examples in regards to systems
integration at QUT, including: ``As part of the new student implementation,
we've decided that batched or cycling run integration is not sufficient.'
","RabaaiEtAl2009ERPSystemHigher",464,"","x","",""
"System Integration","integration","
`For example, if a student just got his student card, he expects that all the
systems should recognise him as a student, so he wants to go to the library and
borrow a book, that implies that you have real-time integration as an oppose to
cycling run integration.'
","RabaaiEtAl2009ERPSystemHigher",464,"","x","",""
"System Integration","integration","
`However, QUT is looking at means to better improve system integration and have
dedicated projects/ resources working on this issue.'
","RabaaiEtAl2009ERPSystemHigher",464,"","x","",""
"System Integration","integration","
`The Role of Consultants at QUT Consultants often play an essential role in ERP
system selection, customisation and integration.'
","RabaaiEtAl2009ERPSystemHigher",464,"","x","",""
"System Integration","integration","
`The descriptive case study of Queensland University of Technology (QUT)
provided details of the: (i) ERP adoption decisions and alternatives, (ii) ERP
selection, (iii) customisation procedures, (iv) integration aspects, (v) role of
consultants, and (vi) ERP system evaluation perceptions.'
","RabaaiEtAl2009ERPSystemHigher",466,"","x","",""
"System Integration","integration","

`Disruption to staff and resistance to received `best practices', together with required training, data mapping, customisations and their support, complexity of integration with remaining legacy systems are all commonly reported, and are often ongoing issues post-implementation.'
","RabaaiEtAl2015CulturPerspeon",86,"","x","",""
"System Integration","integration","
`They are the few key areas where things must go right. . . '' An earlier paper by this team (Ram, Corkindale and Wu, 2013) tabulated the relationships found in the literature between CSFs and implementation or performance output success to identify four factors consistently emerging as central, namely project management, training and education, business process re-engineering and system integration.'
","RabaaiEtAl2015CulturPerspeon",87,"","x","",""
"System Integration","integration","
`Similarly, on technical aspects, testing and system integration were perceived as generally effective, though there were substantial minorities in each sector who did not consider that departments had been integrated by the ERP.'
","RabaaiEtAl2015CulturPerspeon",97,"","x","",""
"System Integration","integration","
`Disruption to staff and resistance to received ``best practices'', together with required training, data mapping, customizations and their support, complexity of integration with remaining legacy systems are all commonly reported, and are often ongoing issues post-implementation.'
","RabaaiEtAl2016SuccesFactorEnterp",46,"","x","",""
"System Integration","integration","
`Their empirical study found that whilst training/education and system integration factor were critical for output performance, the former two (organizational) CSFs were essential for implementation success.'
","RabaaiEtAl2016SuccesFactorEnterp",47,"","x","",""
"System Integration","integration","
`In regards to project-related CSFs which are concerned with system and consultant selection, system integration, training, communication plan and team composition as well as general project management around these.'
","RabaaiEtAl2016SuccesFactorEnterp",55,"","x","",""
"System Integration","integration","
`The widespread usage of internet expanded the scope of ERP by providing inter-organizational integration (Eckhartz et al., 2010; Alimazighi & Bouhmadi, 2011; Grant et al., 2013).'
","SaygiliEtAl2017EndUsersPercep",58,"","x","",""
"System Integration","integration","
`Critical success factors identified in Turkish studies Author (s) Critical Success Factors Baskak& Cetisli (2003) Top management support, business plan and vision, ERP teamwork, ERP package selection, change management, user training and education, effective communication, project management, data integration, software testing and troubleshooting, appropriate legacy systems, monitoring and evaluation of performance.'
","SaygiliEtAl2017EndUsersPercep",62,"","x","",""
"System Integration","integration","
`Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38

use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","x","",""
"System Integration","integration","
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"","x","",""
"System Integration","integration","
`Moreover, key aspects like data conversion, integration and analysis provided by ERP applications are pointed out by end-users.'
","SaygiliEtAl2017EndUsersPercep",69,"","x","",""
"System Integration","integration","
`At present, focus is on integration of upstream and downstream partners through supply chain management information system (SCMIS).'
","SethEtAl2015DeveloModelSucces",248,"","x","",""
"System Integration","integration","
`However, King and Burgess [2008] found similarities between ERP and CRM implementations and between their respective CSFs as they both are large-scale integration technologies, and often are packages supplied by large software vendors.'
","ShaulEtAl2013CriticSuccesFactor",24,"","x","",""
"System Integration","integration","
`Shaul and Tauber [2011] showed that SMEs, unlike LEs, face much greater constraints in terms of resources that can be committed to all stages of information gathering in order to reduce uncertainty, although the complexity and amount of IT functionality and integration requirements are often similar.'
","ShaulEtAl2013CriticSuccesFactor",25,"","x","",""
"System Security","security","
`Also, non-functional aspects, such as performance, security, stability or reliability must at least reach the level from before (G, K).'
","BarthEtAl2019CriticSuccesFactor",663,"","x","",""
"System Security","security","
`Another important factor which is influenced by code modification is revision security.'
","BarthEtAl2019CriticSuccesFactor",666,"","x","",""
"System Security","security","
`Drawing from the literature, we found security, project management, and communication are the top three widely cited CSFs during implementation.'
","HuangEtAl2021CriticSuccesFactor",4683,"","x","",""
"System Security","security","
`The most widely cited CSFs were found to be: security, project management, communication, compliance, network and the reaction of organization.'
","HuangEtAl2021CriticSuccesFactor",4685,"","x","",""

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"System Security","security","
`The most widely cited CSF is security [14, 15, 1921, 23, 28].'
","HuangEtAl2021CriticSuccesFactor",4685,"","x","",""
"System Security","security","
`Companies that move to cloud ERP have little knowledge about how cloud
providers employ security platforms, processes and procedures, which may raise
security risk or information leakage.'
","HuangEtAl2021CriticSuccesFactor",4685,"","x","",""
"System Security","security","
`The concerns, from the security point of view, when implementing Cloud ERP
include: security breaches leading to confidential data being compromised,
encryption, accountability, and maintenance issues [14].'
","HuangEtAl2021CriticSuccesFactor",4685,"","x","",""
"System Security","security","
`Obviously, security breaches bring significant consequences to organizations;
such as, leakage of user account details empowering attackers to access the
confidential business information.'
","HuangEtAl2021CriticSuccesFactor",4685,"","x","",""
"System Security","security","
`As such, strategies, policies, security tools and mechanisms to ensure security
play an important role in the successful adoption and implementation of Cloud
ERP [15].'
","HuangEtAl2021CriticSuccesFactor",4685,"","x","",""
"System Security","security","
`Extrinsic factors include: compliance, network, and security as these CSFs are
primarily controlled by the cloud vendor.'
","HuangEtAl2021CriticSuccesFactor",4686,"","x","",""
"System Security","security","
`For example, Gupta and Misra [14] analyzed statistics and found network,
compliance, security is positively related to the success of Cloud ERP
implementation.'
","HuangEtAl2021CriticSuccesFactor",4687,"","x","",""
"System Security","security","
`The indirect influences of security, compliance and network on the success
implementation are also identified from the study of Gupta, Misra [15].'
","HuangEtAl2021CriticSuccesFactor",4688,"","x","",""
"System Security","security","
`Discussion From the systematic literature review conducted into Cloud ERP
implementation, we found that the top five most widely cited CSFs for the
successful implementation of Cloud ERP are: security, project management,
communication, compliance, and network.'
","HuangEtAl2021CriticSuccesFactor",4689,"","x","",""
"System Security","security","
`For example, a high level of security and confidentiality is considered as one
of the advantages of on-premise ERP, thus organizations usually do not consider
security in their CSFs [35].'
","HuangEtAl2021CriticSuccesFactor",4689,"","x","",""
"System Security","security","
`Accordingly, security is considered as the most important CSF for the
successful implementation from an organizations' perspective.'
","HuangEtAl2021CriticSuccesFactor",4689,"","x","",""
"System Security","security","
`This theme is in line with Hentschel, Leyh [16] who argued that security is the
most frequently mentioned CSF by client organizations during the implementation
and usage of cloud solutions.'
","HuangEtAl2021CriticSuccesFactor",4689,"","x","",""
"System Security","security","
`However, security serves as an extrinsic factor and can be controlled by
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vendors.'
","HuangEtAl2021CriticSuccesFactor",4689,"","x","",""
"System Security","security","
`According to Goel, Kiran [36], cloud providers have several resources to improve security solutions.'
","HuangEtAl2021CriticSuccesFactor",4689,"","x","",""
"System Security","security","
`For example, although security is considered the most important CSF, accordingly to Mac-Anigboro and Usoro [41] and Kiadehi and Mohammadi [42], large organizations would place more emphasis on the security of data and information compared to SMEs.'
","HuangEtAl2021CriticSuccesFactor",4690,"","x","",""
"System Security","security","
`However, a study conducted by Gupta, Misra [39] shows both large and small/medium sized organizations do not want to share important data with others, which means security and privacy of information is the top-most concern among both organizations.'
","HuangEtAl2021CriticSuccesFactor",4690,"","x","",""
"System Security","security","
`Therefore, further research should be conducted to establish whether security and privacy issues are a concern by all types of organizations or only large-scale organizations.'
","HuangEtAl2021CriticSuccesFactor",4690,"","x","",""
"System Security","security","
`The data flowing through the system are extremely valuable, and therefore, studies by Ngai et al. (2004), Warren and Hutchinson (2000), Premkumar (2000) and Bouchbout and Alimazighi (2008) included data security as one of the important technical factor for successful implementation of web-based SCM systems.'
","SethEtAl2015DeveloModelSucces",251,"","x","",""
"System Security","security","
`The technical factors that are critical to organizations in their adoption decision of Internet-based inter-organizational information systems (IBIS) was also studied by Soliman and Janz (2004) and Bouchbout and Alimazighi (2008) and suggested establishing costs, network reliability, data security, scalability and complexity as main factors that significantly affect the adoption decision of IBIS.'
","SethEtAl2015DeveloModelSucces",252,"","x","",""
"Team Knowledge, Skills & Competencies","attrition rate of project team","
`Findings - Results suggest that 9 critical failure items namely Inadequate resources, Poor User involvement, Users' resistance to change, High Attrition rate of project team members, Lack of top management commitment, Poor project management, Inadequate project team composition, Ineffective organizational change management and Unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.'
","GargEtAl2013EmpiriStudyon",496,"","x","",""
"Team Knowledge, Skills & Competencies","attrition rate of project team","
`Pareto chart per factors for ERP failure Pareto analysis suggest that nine critical failure items namely inadequate resources, poor user involvement, users' resistance to change, higher attrition rate of project team members, Lack of top management commitment, Poor project management, inadequate project team composition, ineffective organizational change management, unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.'
","GargEtAl2013EmpiriStudyon",507,"","x","",""
"Team Knowledge, Skills & Competencies","balanced team","
`Frequency analysis of CSFs in literature CSF category Top management commitment

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and support Change management BPR and software configuration Training and job
redesign Project team: the best and brightest Implementation strategy and
timeframe Consultant selection and relationship Visioning and planning Balanced
team Project champion Communication plan IT infrastructure Managing cultural
change Post-implementation evaluation Selection of ERP Team morale and
motivation Vanilla ERP Project management Troubleshooting/crises management
Legacy system consideration Data conversion and integrity System testing Client
consultation Project cost planning and management Build a business case
Empowered decision makers Number of instances cited in literature 25 25 23 23 21
17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often
focused on only a specific aspect of the implementation process or a specific
CSF.'
","FinneyEtAl2007ERPImplemCompil",340,"","x","",""
"Team Knowledge, Skills & Competencies","balanced team","
`P20: A balanced team for ERP implementation particularly comprised of both
business/ functional and IT personnel are positively related to ERP
implementation success.'
","KhattakEtAl2013InvestCriticSucces",49,"","x","",""
"Team Knowledge, Skills & Competencies","balanced team","
`The research concludes that: (1) Quality (adequacy) and quantity of training
and education of personnel/users, role and effectiveness of management in
reducing the users' resistance, use of steering committee for control purpose,
top management support or involvement, clearly specified goals/objectives/scope
regarding ERP system, ease of system's use and users' acceptance, vendor's
support, project management, effective communication among the organizational
members and a balanced team for ERP implementation are practically considered by
the successful enterprises in China while planning and going for the
implementation of the ERP system and are thus critical for the success of ERP
systems implementation projects, ignoring of which may cause implementation
failure in the Chinese organizations; (2) Some of the factors deemed imperative
for ERP systems implementation success in the literature like; selection of a
right full time project manager with extensive experience, presence/existence of
a champion, integration of business planning with IT/ERP planning, use and role
of consultant, change management strategy and programs, competency in use of IT
and IT infrastructure, business...'
","KhattakEtAl2013InvestCriticSucces",68,"","x","",""
"Team Knowledge, Skills & Competencies","changes in personnel","
`Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000)
Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000)
Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in
personnel Lack of discipline Organisational resistance Lack of organisational
commitment Poor data accuracy Limited user involvement Mismatch between
organisation requirements and functionalities offered Lack of readiness for
integration Lack of focus on user education and training Excessive customisation
Inadequate organisational analysis Costs Project duration Technical challenges
Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.'
","AliEtAl2017ERPSystemImplem",681,"","x","",""
"Team Knowledge, Skills & Competencies","competency","
`The research concludes that: (1) Quality (adequacy) and quantity of training
and education of personnel/users, role and effectiveness of management in
reducing the users' resistance, use of steering committee for control purpose,
top management support or involvement, clearly specified goals/objectives/scope
regarding ERP system, ease of system's use and users' acceptance, vendor's
support, project management, effective communication among the organizational
members and a balanced team for ERP implementation are practically considered by
the successful enterprises in China while planning and going for the
implementation of the ERP system and are thus critical for the success of ERP
systems implementation projects, ignoring of which may cause implementation
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failure in the Chinese organizations; (2) Some of the factors deemed imperative for ERP systems implementation success in the literature like; selection of a right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role of consultant, change management strategy and programs, competency in use of IT and IT infrastructure, business...'
","KhattakEtAl2013InvestCriticSucces",68,"","x","",""
"Team Knowledge, Skills & Competencies","composition","
`Important CSFs identified are: ERP team work and composition, top management support, business plan and vision, effective communication, project management, project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and evaluation of performance.'
","AliEtAl2017ERPSystemImplem",675,"","x","",""
"Team Knowledge, Skills & Competencies","composition","
`The most common causes of ERP implementation failures are a combination of poor planning and high software customisation (Scheer and Habbermann, 2000), lack of top management commitment; ineffective communication; insufficient training; lack of user support, poor project management, relying on legacy systems, inter-departmental conflicts, poor composition of project teams, failure in redesigning business processes and, lack of clarity about required changes.'
","AliEtAl2017ERPSystemImplem",682,"","x","",""
"Team Knowledge, Skills & Competencies","composition","
`Findings – Results suggest that 9 critical failure items namely Inadequate resources, Poor User involvement, Users' resistance to change, High Attrition rate of project team members, Lack of top management commitment, Poor project management, Inadequate project team composition, Ineffective organizational change management and Unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.'
","GargEtAl2013EmpiriStudyon",496,"","x","",""
"Team Knowledge, Skills & Competencies","composition","
`Pareto chart per factors for ERP failure Pareto analysis suggest that nine critical failure items namely inadequate resources, poor user involvement, users' resistance to change, higher attrition rate of project team members, Lack of top management commitment, Poor project management, inadequate project team composition, ineffective organizational change management, unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.'
","GargEtAl2013EmpiriStudyon",507,"","x","",""
"Team Knowledge, Skills & Competencies","composition","
`(4) The Project Management factor in this study is defined by team composition, project team competence, scope management, expectation management, communication within project team and budget control items which may affect the success of ERP implementation in Indian retail sector.'
","GargEtAl2015FactorAffectERP",1332,"","x","",""
"Team Knowledge, Skills & Competencies","composition","
`According to the literature, the most studied factors were: Top Management Support, Effective Communication, Training, and Education, Business plan and vision, Project Management, BPR management, Change Management, Project team Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation, Technological Infrastructure, Legacy systems consideration.'
","MahrazEtAl2020CompilAnalysCritic",112,"","x","",""
"Team Knowledge, Skills & Competencies","composition","
`The findings of our study reveal that `appropriate business and IT legacy systems', `business plan/vision/goals/justification', `business process reengineering', `change management culture and programme', `communication', `ERP teamwork and composition', `monitoring and evaluation of performance', `project

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champion', `project management', `software/system development, testing and
troubleshooting', `top management support', `data management', `ERP strategy and
implementation methodology', `ERP vendor', `organizational characteristics',
`fit between ERP and business/process', `national culture' and `country-related
functional requirement' were the commonly extracted factors across these 10
countries/regions.'
","NgaiEtAl2008ExaminCriticSucces",548,"","x","",""
"Team Knowledge, Skills & Competencies","composition","
`Eleven critical factors were identified, such as ERP teamwork and composition,
change management program and culture, top management support, business plan and
vision, business process reengineering (BPR) and minimum customisation,
effective communications, project management, software development, testing and
troubleshooting, monitoring and evaluating performance, project champion, and
appropriate business and IT legacy systems.'
","Rabaai2009IdentiCriticSucces",6,"","x","",""
"Team Knowledge, Skills & Competencies","composition","
`Based on the work by Markus and Tanis (2000), Nah and Delgado organised these
factors into seven main categories: (1) Business plan and vision; (2) Change
management; (3) Communication; (4) ERP team composition, skills, and
compensation; (5) Project management; (6) Top management support and
championship; and (7) System analysis, selection, and technical implementation.'
","Rabaai2009IdentiCriticSucces",6,"","x","",""
"Team Knowledge, Skills & Competencies","composition","
`Organisational factors traditionally found to affect implementation success,
including management support, project communication, change management and team
composition do not differentiate the public from the private sector, at least in
the case of Jordan.'
","RabaaiEtAl2015CulturPerspeon",97,"","x","",""
"Team Knowledge, Skills & Competencies","composition","
`Lack of benefit realisation is not simply attributable to technical or
managerial aspects however, since most items specifically addressing required
training, change and team composition largely showed that these aspects were
adequately understood and implemented.'
","RabaaiEtAl2015CulturPerspeon",97,"","x","",""
"Team Knowledge, Skills & Competencies","composition","
`Item Description 1 top management support 25 application project costs 2
effective communication 26 interdepartmental cooperation 3 interdepartmental
communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor
relations 5 business plan-vision 29 ongoing vendor support 6 change management
30 use of vendor's development tools 7 education on new business process 31
organizational characteristics 8 user training& education 32 employee / team
morale-motivation 9 user acceptance 33 leadership of the project team 10
managing cultural change 34 project team competence- composition 11 business
process reengineering 35 ERP team work 12 customization 36 steering committee 13
minimal customization 37 empowered decision makers 14 software configuration 38
use of consultants 15 data accuracy 39 obtain business analysts 16 data
analysis- conversion 40 project champion 17 software development testing &
troubleshooting 41 appropriate business-legacy systems 18 implementation
strategies 42 data integration 19 ERP package selection 43 scope & vision based
performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of
performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","x","",""
"Team Knowledge, Skills & Competencies","composition","
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation
strategies (23) Management of expectations (24) Project management (32) Employee
/ team morale & motivation (33) Leadership of the project team (34) Project team
competence and composition 2 (14) Software configuration (21) IT infrastructure
(28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor
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development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"","x","",""
"Team Knowledge, Skills & Competencies","good project management team","
`The authors find that top management support, good project management teams, and good communications are the top three most important critical successful factors during implementation.'
","AliEtAl2017ERPSystemImplem",666,"","x","",""
"Team Knowledge, Skills & Competencies","project team","
`CSFs for successful ERP implementation are identified as top management support, presence of a champion, good communication with stakeholders, effective project planning, business process re-engineering (BPR), and using a business analyst on the project team (Bancroft et al., 1998; Bingi et al., 1999).'
","AliEtAl2017ERPSystemImplem",674,"","x","",""
"Team Knowledge, Skills & Competencies","project team","
`They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.'
","AliEtAl2017ERPSystemImplem",674,"","x","",""
"Team Knowledge, Skills & Competencies","project team","
`The most common causes of ERP implementation failures are a combination of poor planning and high software customisation (Scheer and Habbermann, 2000), lack of top management commitment; ineffective communication; insufficient training; lack of user support, poor project management, relying on legacy systems, inter-departmental conflicts, poor composition of project teams, failure in redesigning business processes and, lack of clarity about required changes.'
","AliEtAl2017ERPSystemImplem",682,"","x","",""
"Team Knowledge, Skills & Competencies","project team","
`Project management: The study of Suganthalakshmi and Mothuvelayuthan (2012), concluded that the formation of the project team has robust influence on the ERP execution process and two significant issues are the combination of third-party professionals within the team and the preservation within the firm with the pertinent ERP knowledge.'
","AnjumEtAl2015FactorManipuERP",630,"","x","",""
"Team Knowledge, Skills & Competencies","project team","
`Lack of management support, poor organizational culture, communication problems, financial management problems, lack of clarity on scope, project management problems, poor project team, ERP software misfit, poor solution implementer performance, poor quality of testing, outdated it infrastructure, lack of training, highly customized ERP, poor process design, lack of user involvement, resistance to change, unrealistic expectations are the main failure factors that need to be analyzed in detail.'
","CoşkunEtAl2022ERPFailurSystem",3,"","x","",""
"Team Knowledge, Skills & Competencies","project team","
`It should not be confused that many factors such as ``budget'',

``communication'', and ``project team'' are not examined in the ``Project Management Problems'' category since they are examined in separate categories because many articles analyzed in this study show that project management is handled as project coordination.'
",”CoşkunEtAl2022ERPFailurSystem”,13,””,”x”,””,””
"Team Knowledge, Skills & Competencies”,"project team”,"
`Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.'
",”FinneyEtAl2007ERPImplemCompil”,340,””,”x”,””,””
"Team Knowledge, Skills & Competencies”,"project team”,"
`Findings – Results suggest that 9 critical failure items namely Inadequate resources, Poor User involvement, Users' resistance to change, High Attrition rate of project team members, Lack of top management commitment, Poor project management, Inadequate project team composition, Ineffective organizational change management and Unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.'
",”GargEtAl2013EmpiriStudyon”,496,””,”x”,””,””
"Team Knowledge, Skills & Competencies”,"project team”,"
`These factors include, but not limited to, poor consultant effectiveness, ERP software misfit, unrealistic expectations from top management concerning the ERP systems, over-reliance on heavy customization, poor quality of Business Process Reengineering (BPR), high turnover rate of project team members, poor IT Infrastructure, functionality problems with the system, unclear concept of the nature and use of the ERP system from the users perspective, too tight project schedule, lack of formal communication, part-time dedication, etc.'
",”GargEtAl2013EmpiriStudyon”,498,””,”x”,””,””
"Team Knowledge, Skills & Competencies”,"project team”,"
`Pareto chart per factors for ERP failure Pareto analysis suggest that nine critical failure items namely inadequate resources, poor user involvement, users' resistance to change, higher attrition rate of project team members, Lack of top management commitment, Poor project management, inadequate project team composition, ineffective organizational change management, unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.'
",”GargEtAl2013EmpiriStudyon”,507,””,”x”,””,””
"Team Knowledge, Skills & Competencies”,"project team”,"
`(4) The Project Management factor in this study is defined by team composition, project team competence, scope management, expectation management, communication within project team and budget control items which may affect the success of ERP implementation in Indian retail sector.'
",”GargEtAl2015FactorAffectERP”,1332,””,”x”,””,””
"Team Knowledge, Skills & Competencies”,"project team”,"
`Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) ● Communication within the company ● Organization resistance ● Project budget ● Project management ● Implementation strategy ● Strategic goals and objectives ● Business process reengineering ● organizational culture ● knowledge base of the

company ● Project planning and control ● Facilitating conditions ● Organization size ● The vision of the organization ● Readiness of organizations ● Clarity of potential cost ● User involvement ● Selection of vendor/consult ant ● Project team ● Top management support ● Training of user ● Trust on vendor ● Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender ● Highest degree attained ● Selection of ERP package ● IT infrastructure ● Data integrity and system testing.'
","HuangEtAl2021CriticSuccesFactor",4686,"","x","","",""
"Team Knowledge, Skills & Competencies","project team","
`According to the literature, the most studied factors were: Top Management Support, Effective Communication, Training, and Education, Business plan and vision, Project Management, BPR management, Change Management, Project team Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation, Technological Infrastructure, Legacy systems consideration.'
","MahrazEtAl2020CompilAnalysCritic",112,"","x","","",""
"Team Knowledge, Skills & Competencies","project team","
`In the private sector the project team was rarely perceived to consist of the best employees, whereas attitudes on this were more evenly distributed in the public sector.'
","RabaaiEtAl2015CulturPerspeon",96,"","x","","",""
"Team Knowledge, Skills & Competencies","project team","
`Project teams may not have wished to include end users for their own reasons, and end users themselves may have been unwilling to change.'
","RabaaiEtAl2015CulturPerspeon",98,"","x","","",""
"Team Knowledge, Skills & Competencies","project team","
`It should be noted that involving people with both business and technical knowledge into the project team is critical to achieve success (M Al-Mashari, AlMudimigh, & Zairi, 2003; Bajwa, Garcia, & Mooney, 2004; King & Burgess, 2006).'
","RavasanEtAl2014FCM-BaDynamiModeli",45,"","x","","",""
"Team Knowledge, Skills & Competencies","project team","
`Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","x","","",""
"Team Knowledge, Skills & Competencies","project team","
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15)

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Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7)
Education on new business processes (8) User training and education (9) User
acceptance (10) Managing cultural change this result maybe, end-users resist
changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"","x","",""
"Team Knowledge, Skills & Competencies","project team","
`In addition, the project team should be empowered to define a clear program and
required resources, set realistic milestones, and ensure interdepartmental
cooperation.'
","ShaulEtAl2013CriticSuccesFactor",19,"","x","",""
"Team Knowledge, Skills & Competencies","project team","
`Such consequences can be avoided by open communication with top management,
vendors, and consultants through the establishment of senior and professional
steering committees, a balanced project team, and a ``responsible'' definition
of success measures.'
","ShaulEtAl2013CriticSuccesFactor",19,"","x","",""
"Team Knowledge, Skills & Competencies","project team","
`● IT infrastructure ● System Training and knowledge transfer ● Over-dependence
on detailed and heavy customization ● High turnover rate of project team members
● Business process re-engineering ● User's resistance to transform ● ERP system
misfit Considering these critical factors, specifically affecting the
agricultural business sectors in Malaysia, there are a few possible suggestions
proposed.'
","ShukorEtAl2020EnterpResourPlanni",2055,"","x","",""
"Team Knowledge, Skills & Competencies","team competence","
`They rate CSFs by a degree of importance during ERP implementation as follows:
(1) top management support; (2) project team competence; (3) inter-departmental
cooperation; (4) clear goals and objectives; (5) project management; (6) inter-
departmental communication; (7) management of expectation; (8) project champion;
(9) vendors' support; (10) careful package selection; (11) data analysis and
conversion; (12) dedicated resources; (13) use of steering committee; (14) user
training on software; (15) education on new business processes; (16) BPR; (17)
minimal customisation; (18) architecture choices; (19) change management; (20)
partnership with vendors; (21) use of vendors' tool; and (22) use of
consultant.'
","AliEtAl2017ERPSystemImplem",674,"","x","",""
"Team Knowledge, Skills & Competencies","team competence","
`(4) The Project Management factor in this study is defined by team composition,
project team competence, scope management, expectation management, communication
within project team and budget control items which may affect the success of ERP
implementation in Indian retail sector.'
","GargEtAl2015FactorAffectERP",1332,"","x","",""
"Team Knowledge, Skills & Competencies","team competence","
`Item Description 1 top management support 25 application project costs 2
effective communication 26 interdepartmental cooperation 3 interdepartmental
communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor
relations 5 business plan-vision 29 ongoing vendor support 6 change management
30 use of vendor's development tools 7 education on new business process 31
organizational characteristics 8 user training& education 32 employee / team
morale-motivation 9 user acceptance 33 leadership of the project team 10
managing cultural change 34 project team competence- composition 11 business
process reengineering 35 ERP team work 12 customization 36 steering committee 13
minimal customization 37 empowered decision makers 14 software configuration 38
use of consultants 15 data accuracy 39 obtain business analysts 16 data
analysis- conversion 40 project champion 17 software development testing &
troubleshooting 41 appropriate business-legacy systems 18 implementation
strategies 42 data integration 19 ERP package selection 43 scope & vision based
performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of
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performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","x","","",""
"Team Knowledge, Skills & Competencies","team competence","
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"","x","","",""
"Team Knowledge, Skills & Competencies","team work","
`Important CSFs identified are: ERP team work and composition, top management support, business plan and vision, effective communication, project management, project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and evaluation of performance.'
","AliEtAl2017ERPSystemImplem",675,"","x","","",""
"Team Knowledge, Skills & Competencies","team work","
`Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","x","","",""
"Team Knowledge, Skills & Competencies","teamwork","
`According to the literature, the most studied factors were: Top Management Support, Effective Communication, Training, and Education, Business plan and vision, Project Management, BPR management, Change Management, Project team Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation, Technological Infrastructure, Legacy systems consideration.'
","MahrazEtAl2020CompilAnalysCritic",112,"","x","","",""
"Team Knowledge, Skills & Competencies","teamwork","
`The findings of our study reveal that `appropriate business and IT legacy systems', `business plan/vision/goals/justification', `business process reengineering', `change management culture and programme', `communication', `ERP teamwork and composition', `monitoring and evaluation of performance', `project champion', `project management', `software/system development, testing and troubleshooting', `top management support', `data management', `ERP strategy and implementation methodology', `ERP vendor', `organizational characteristics', `fit between ERP and business/process', `national culture' and `country-related

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functional requirement' were the commonly extracted factors across these 10
countries/regions.'
","NgaiEtAl2008ExaminCriticSucces",548,"","x","",""
"Team Knowledge, Skills & Competencies","teamwork","
`Eleven critical factors were identified, such as ERP teamwork and composition,
change management program and culture, top management support, business plan and
vision, business process reengineering (BPR) and minimum customisation,
effective communications, project management, software development, testing and
troubleshooting, monitoring and evaluating performance, project champion, and
appropriate business and IT legacy systems.'
","Rabaai2009IdentiCriticSucces",6,"","x","",""
"Team Knowledge, Skills & Competencies","teamwork","
`Critical success factors identified in Turkish studies Author (s) Critical
Success Factors Baskak& Cetisli (2003) Top management support, business plan and
vision, ERP teamwork, ERP package selection, change management, user training
and education, effective communication, project management, data integration,
software testing and troubleshooting, appropriate legacy systems, monitoring and
evaluation of performance.'
","SaygiliEtAl2017EndUsersPercep",62,"","x","",""
"Team Knowledge, Skills & Competencies","turnover rate of project team","
`These factors include, but not limited to, poor consultant effectiveness, ERP
software misfit, unrealistic expectations from top management concerning the ERP
systems, over-reliance on heavy customization, poor quality of Business Process
Reengineering (BPR), high turnover rate of project team members, poor IT
Infrastructure, functionality problems with the system, unclear concept of the
nature and use of the ERP system from the users perspective, too tight project
schedule, lack of formal communication, part-time dedication, etc.'
","GargEtAl2013EmpiriStudyon",498,"","x","",""
"Team Knowledge, Skills & Competencies","turnover rate of project team","
`● IT infrastructure ● System Training and knowledge transfer ● Over-dependence
on detailed and heavy customization ● High turnover rate of project team members
● Business process re-engineering ● User's resistance to transform ● ERP system
misfit Considering these critical factors, specifically affecting the
agricultural business sectors in Malaysia, there are a few possible suggestions
proposed.'
","ShukorEtAl2020EnterpResourPlanni",2055,"","x","",""
"Technical Challenges","technical challenges","
`Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000)
Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000)
Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in
personnel Lack of discipline Organisational resistance Lack of organisational
commitment Poor data accuracy Limited user involvement Mismatch between
organisation requirements and functionalities offered Lack of readiness for
integration Lack of focus on user education and training Excessive customisation
Inadequate organisational analysis Costs Project duration Technical challenges
Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.'
","AliEtAl2017ERPSystemImplem",681,"","x","",""
"Technical Challenges","technical challenges","
`The executives are required to have a complete understanding of the technical
challenges involved in adopting a new enterprisewide system, and proposed three
elements to consider a) network upgrade, b) hardware upgrade and c) providing a
global support.'
","MahrazEtAl2020CompilAnalysCritic",114,"","x","",""
"Technical Challenges","technical issues","
`They observe that vendor failure to adapt to local culture, BPR, managing local
human resources, lack of information sharing, failure to understand cultural
characteristics, lack of adaptability towards a changing business and economic
environment, lack of cost control functions (i.e. adapting to changing costs),
```

and failure to understand technical issues are the main causes of ERP
implementation failure.'
","AliEtAl2017ERPSystemImplem",681,"","x","","",""
"Technical Challenges","technical issues","
`In another country-specific study, Amid et al. (2012) examine critical failure
factors in Iranian companies and identify and classify failure attributes as
vendors and consultants, human resources, managerial, project management,
processes, organisational, and technical issues (Table V).'
","AliEtAl2017ERPSystemImplem",681,"","x","","",""
"Technical Challenges","technical issues","
`One of the main problems in ERP projects is focusing on technical and financial
aspects of a project and neglecting to take into account the non-technical
issues like people [70], while many ERP studies indicate that failure is largely
due to human resources issues, rather than technical factors.'
","AmidEtAl2012IdentiClassiERP",232,"","x","","",""
"Technical Challenges","technical issues","
`The last failure component relates to technical issues.'
","AmidEtAl2012IdentiClassiERP",233,"","x","","",""
"Technical Challenges","technical issues","
`It has been noted that one of the main problems in ERP projects, is focusing on
technical and financial aspects of a project and neglecting to take into account
the nontechnical issues like people [70], while many ERP studies indicate that
failure is largely due to organizational and social, rather than technical
factors.'
","AmidEtAl2012IdentiClassiERP",233,"","x","","",""
"Technical Challenges","technical issues","
`Technical issues like system architecture, language, data modeling and ERP
integration with other systems like Supply Chain Management (SCM) systems are
other branches that have made a contribution.'
","BasogluEtAl2007OrganiAdoptiEnterp",79,"","x","","",""
"Technical Challenges","technical issues","
`Despite the benefits that can be achieved from a successful ERP implementation,
project managers focus on the technical and financial aspects of a project and
neglect to take into account the non-technical issues like people (Genoulaz &
Millet, 2006).'
","BasogluEtAl2007OrganiAdoptiEnterp",79,"","x","","",""
"Technical Challenges","technical issues","
`About that issue, Xue et al. (2005) claimed that cultural, environmental and
technical issues play an important role on leader brands' failure in Chinese
companies.'
","BasogluEtAl2007OrganiAdoptiEnterp",83,"","x","","",""
"Technical Challenges","technical issues","
`Project Team: The project team members must have acceptable knowledge in the
business processes and technical issues of the software.'
","Chan2013AustraQuantiSurvey",108,"","x","","",""
"Technical Challenges","technical issues","
`The organization where the implementation went unsuccessful, the vendors played
very limited and ineffective role as their response rate in rectifying the
technical issues was also quite low.'
","KhattakEtAl2013InvestCriticSucces",62,"","x","","",""
"Technical Challenges","technical issues","
`Therefore, the consultant should have multiple skills covering functional,
technical issues and in-depth knowledge of the software[17]- [19] Additionally,
project manager appointed should be experienced, mix of business and IT
knowledge, strong leadership skills and have adequate authority to manage all
aspects of the project.'
","OsmanEtAl2019ERPCriticSucces",37,"","x","","",""
"Technical Challenges","technical issues","

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`ERP failure factors and categories Failure Categories Failure Factors C4:
Project Management F1: Conflicts between organization and consultants/ vendor
C5: Technical F2: High rate of system customization C5: Technical F3: Data
management issues C2: Human Resources F4: Inadequate education and training C2:
Human Resources F5: Inadequate user involvement C2: Human Resources F6:
Ineffective communications system C3: Organizational F7: Internal conflicts
between departments C2: Human Resources F8: Inadequate change management C3:
Organizational F9: Lack of performance measurement system C3: Organizational
F10: Misfit between organization culture and ERP system C3: Organizational F11:
Misfit between organization structure and ERP system C3: Organizational F12:
Misfits between the IT and business strategies C1: Environmental F13:
Environmental pressures C3: Organizational F14: Poor business process
reengineering C1: Environmental F15: Poor consultant C4: Project Management F16:
Poor project management C4: Project Management F17: Poor risk management C3:
Organizational F18: Poor top management support C5: Technical F19: IT Technical
issues C2: Human Resources F20: Language barriers C4:...'
","RavasanEtAl2014FCM-BaDynamiModeli",42,"","x","",""
"Technical Challenges","technical issues","
`One of the main problems in ERP projects is focusing on technical and financial
aspects of a project and neglecting to take into account the non-technical
issues like people (Amid, et al., 2012; Botta-Genoulaz & Millet, 2006), while
many ERP studies indicate that failure is largely due to human resources issues,
rather than technical factors.'
","RavasanEtAl2014FCM-BaDynamiModeli",45,"","x","",""
"Technical Challenges","technical issues","
`Then, we have scenario 5 or technical category (high rate of system
customization, data management issues, IT technical issues, poor quality of
testing) in the last order of effect size on failure modes.'
","RavasanEtAl2014FCM-BaDynamiModeli",45,"","x","",""
"Technical Challenges","technical issues","
`The reason often cited are the technical issues involved in implementing these
systems.'
","SethEtAl2015DeveloModelSucces",249,"","x","",""
"Test Automation","test automation","
`Even though test automation tools for ERP systems are expensive and are often
not able to cover individually developed parts of the system, test automation is
a way to reach a high standardization of the testing process.'
","BarthEtAl2019CriticSuccesFactor",665,"","x","",""
"Testing","testing","
`Important CSFs identified are: ERP team work and composition, top management
support, business plan and vision, effective communication, project management,
project champion, appropriate business and legacy systems, change management
programmes, culture, BPR, minimum customisation, software development, testing,
trouble shooting, monitoring, and evaluation of performance.'
","AliEtAl2017ERPSystemImplem",675,"","x","",""
"Testing","testing","
`Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000)
identify several other attributes associated with implementation failures,
including approaching ERP implementation from an excessively functional
perspective, inappropriately cutting the scope of the project, eliminating user
training, inadequate testing, not improving business processes initially,
underestimating data quality problems, fragile human capital, and data migration
problems.'
","AliEtAl2017ERPSystemImplem",680,"","x","",""
"Testing","testing","
`Lesser, but still important CSFs are, having a good business plan, vision,
having a project champion, appropriate business and legacy systems, change
management programmes, culture, BPR, minimum customisation, software
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development, testing, trouble shooting, monitoring, and the evaluation of performance (Markus, Axline, Petrie and Tanis, 2000; Bancroft et al., 1998; Bingi et al., 1999; Nah et al., 2001; Umble et al., 2003; Ehie and Madsen, 2005; Sarkar and Lee, 2003; Umble et al., 2003; Kim et al., 2005; Motwani et al., 2005; Nah and Delgado, 2006; Maguire et al., 2010).'
","AliEtAl2017ERPSystemImplem",682,"","x","",""
"Testing","testing","
`Two researchers conducted a research study on the success issues of ERP which identified ten successive issues through investigate ten selective articles which are: effective decision making, Business Plan and vision, project management, effective communication, testing and troubleshooting, appropriate business and legacy system, ERP teamwork and composition, top management support and software development (Nah and Lau, 2001).'
","AnjumEtAl2015FactorManipuERP",628,"","x","",""
"Testing","testing","
`The Big Bang implementation strategy needs synchronized implementation of manifold modules of ERP systems, whereas, phased implementation includes developing, testing, designing and installing dissimilar modules of the similar ERP package.'
","AnjumEtAl2015FactorManipuERP",629,"","x","",""
"Testing","testing","
`The respective ERP software upgrade phase consists of 11 sub-phases, namely design of an upgrade project methodology, research of upgrade options, develop a business case, full assessment of modifications in the current version and technical environment, full assessments of the new functionality and technical requirements in each (potential) upgrade option, impact analysis between the new upgrade version and the existing version, install the new version onto the development system, construct the new system, thorough testing of the upgrade system, trial upgrades, and conversion or go live.'
","BarthEtAl2019CriticSuccesFactor",661,"","x","",""
"Testing","testing","
`(5) System testing: system testing is one of the most important tasks to ensure an unobstructed operation of the ERP system after the upgrade procedure (L).'
","BarthEtAl2019CriticSuccesFactor",665,"","x","",""
"Testing","testing","
`Even though test automation tools for ERP systems are expensive and are often not able to cover individually developed parts of the system, test automation is a way to reach a high standardization of the testing process.'
","BarthEtAl2019CriticSuccesFactor",665,"","x","",""
"Testing","testing","
`System testing should not only focus on functional testing, but non-functional factors, such as performance and reliability, have to be part of the process.'
","BarthEtAl2019CriticSuccesFactor",665,"","x","",""
"Testing","testing","
`H proposes to integrate key users not only in the planning phase but also in the testing phase as they are able to deliver valuable input for the definition of test scenarios and test cases (B).'
","BarthEtAl2019CriticSuccesFactor",666,"","x","",""
"Testing","testing","
`This leads to the next success factor, system testing, which should not only be executed by IT staff but rather by key users and process owners, who bring along process knowledge and therefore, can guarantee correct functionality.'
","BarthEtAl2019CriticSuccesFactor",669,"","x","",""
"Testing","testing","
`Many factors, such as project management, team composition, communication, system testing and external support, are crucial for ERP implementation projects as well as for upgrade projects.'
","BarthEtAl2019CriticSuccesFactor",670,"","x","",""

"Testing","testing","
`Lack of management support, poor organizational culture, communication problems, financial management problems, lack of clarity on scope, project management problems, poor project team, ERP software misfit, poor solution implementer performance, poor quality of testing, outdated it infrastructure, lack of training, highly customized ERP, poor process design, lack of user involvement, resistance to change, unrealistic expectations are the main failure factors that need to be analyzed in detail.'
","CoşkunEtAl2022ERPFailurSystem",3,"","x","",""
"Testing","testing","
`During the final stages of the implementation process, the project team should consider the inclusion of testing exercises (Kumar et al., 2002; Nah et al., 2001; Al-Mashari et al., 2003) as well as simulation exercises before the system ``goes live'' (Yusuf et al., 2004).'
","FinneyEtAl2007ERPImplemCompil",339,"","x","",""
"Testing","testing","
`Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.'
","FinneyEtAl2007ERPImplemCompil",340,"","x","",""
"Testing","testing","
`Testing and troubleshooting of the ERP implementation process is important due to ERP's critical role and complexity.'
","GargEtAl2014FactorInflueERP",441,"","x","",""
"Testing","testing","
`In contrast, except for a few papers e.g., Peng and Nunes [8] Hasan, Miah [9], limited research has been reported to examine the post-implementation issues of Cloud ERP including critical processes such as testing and checking reliability of systems, or evaluating the benefits of system implementations.'
","HuangEtAl2021CriticSuccesFactor",4683,"","x","",""
"Testing","testing","
`Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) ● Communication within the company ● Organization resistance ● Project budget ● Project management ● Implementation strategy ● Strategic goals and objectives ● Business process reengineering ● organizational culture ● knowledge base of the company ● Project planning and control ● Facilitating conditions ● Organization size ● The vision of the organization ● Readiness of organizations ● Clarity of potential cost ● User involvement ● Selection of vendor/consult ant ● Project team ● Top management support ● Training of user ● Trust on vendor ● Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender ● Highest degree attained ● Selection of ERP package ● IT infrastructure ● Data integrity and system testing.'
","HuangEtAl2021CriticSuccesFactor",4686,"","x","",""
"Testing","testing","
`The findings of our study reveal that `appropriate business and IT legacy systems', `business plan/vision/goals/justification', `business process reengineering', `change management culture and programme', `communication', `ERP teamwork and composition', `monitoring and evaluation of performance', `project

champion', `project management', `software/system development, testing and troubleshooting', `top management support', `data management', `ERP strategy and implementation methodology', `ERP vendor', `organizational characteristics', `fit between ERP and business/process', `national culture' and `country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.'
","NgaiEtAl2008ExaminCriticSucces",548,"","x","",""
"Testing","testing","
`Eleven critical factors were identified, such as ERP teamwork and composition, change management program and culture, top management support, business plan and vision, business process reengineering (BPR) and minimum customisation, effective communications, project management, software development, testing and troubleshooting, monitoring and evaluating performance, project champion, and appropriate business and IT legacy systems.'
","Rabaai2009IdentiCriticSucces",6,"","x","",""
"Testing","testing","
`The factors identified were management and leadership, visioning and planning, ERP package selection, communication process management, training and education, project management, legacy systems management, system integration, system testing, cultural and structural changes, and performance evaluation and management.'
","Rabaai2009IdentiCriticSucces",6,"","x","",""
"Testing","testing","
`3 Note: Other critical success factors were found in the reviewed articles, such as: system testing, building a business case, and empowered decision makers.'
","Rabaai2009IdentiCriticSucces",7,"","x","",""
"Testing","testing","
`Similarly, on technical aspects, testing and system integration were perceived as generally effective, though there were substantial minorities in each sector who did not consider that departments had been integrated by the ERP.'
","RabaaiEtAl2015CulturPerspeon",97,"","x","",""
"Testing","testing","
`Critical success factors identified in Turkish studies Author (s) Critical Success Factors Baskak& Cetisli (2003) Top management support, business plan and vision, ERP teamwork, ERP package selection, change management, user training and education, effective communication, project management, data integration, software testing and troubleshooting, appropriate legacy systems, monitoring and evaluation of performance.'
","SaygiliEtAl2017EndUsersPercep",62,"","x","",""
"Testing","testing","
`Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","x","",""

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"Time","milestone","
`Therefore, it involves not only the planning stages, but also the allocating of
responsibilities to various players, the definition of milestones and critical
paths, training and human resource planning, and finally the determination of
measures of success (Nah et al., 2001).'
","FinneyEtAl2007ERPImplemCompil",336,"","x","",""
"Time","milestone","
`In addition, the project team should be empowered to define a clear program and
required resources, set realistic milestones, and ensure interdepartmental
cooperation.'
","ShaulEtAl2013CriticSuccesFactor",19,"","x","",""
"Time","project duration","
`Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000)
Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000)
Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in
personnel Lack of discipline Organisational resistance Lack of organisational
commitment Poor data accuracy Limited user involvement Mismatch between
organisation requirements and functionalities offered Lack of readiness for
integration Lack of focus on user education and training Excessive customisation
Inadequate organisational analysis Costs Project duration Technical challenges
Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.'
","AliEtAl2017ERPSystemImplem",681,"","x","",""
"Time","schedule","
`The authors report risk factors such as loss of qualified IT experts after
implementation, inaccurate master production schedules, user resistance, loss of
ERP-related know-how, lack of vendor support, failure to produce an appropriate
material requirement plan, and inefficient integration between modules are
primary risk factors that can affect the viability of ERP projects.'
","AliEtAl2017ERPSystemImplem",678,"","x","",""
"Time","schedule","
`These factors include, but not limited to, poor consultant effectiveness, ERP
software misfit, unrealistic expectations from top management concerning the ERP
systems, over-reliance on heavy customization, poor quality of Business Process
Reengineering (BPR), high turnover rate of project team members, poor IT
Infrastructure, functionality problems with the system, unclear concept of the
nature and use of the ERP system from the users perspective, too tight project
schedule, lack of formal communication, part-time dedication, etc.'
","GargEtAl2013EmpiriStudyon",498,"","x","",""
"Time","schedule","
`Developing software systems is an expensive, and often a difficult process as
software development projects are affected by a series of problems, such as poor
project management, cost and schedule overruns, poor quality software and under-
motivated developers.'
","GargEtAl2013EmpiriStudyon",500,"","x","",""
"Time","schedule","
`As Bradley (2008) argued that a project could be said successful only if it is
got to be completed within the scheduled time, allocated budget and bringing
positive impact on the entire organization therefore, on the basis of the same
criteria cases 1,2,3,4.5,6,8,9,10 & 12 were classed as successful and cases 7 &
11 were termed as unsuccessful.'
","KhattakEtAl2013InvestCriticSucces",53,"","x","",""
"Time","schedule","
`For ERP implementation, a clear and welldefined project plan, including the
goals, objectives, strategy, scope, and schedule of the project, are significant
issues in project management.'
","NgaiEtAl2008ExaminCriticSucces",557,"","x","",""
"Time","schedule","
`Such difficulties can be more than pain or inconvenience: reports consistently
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note that the majority of ERP implementations fail, with cost and schedule overruns, non-realisation of benefits, failure to recoup costs, and satisfaction below 50% on various dimensions (Krigsman, 2013).'
","RabaaiEtAl2015CulturPerspeon",86,"","x","",""
"Time","schedule","
`Customisation increases project time, ruins schedules, introduce new bugs into the system, and make the upgrade to new release harder (Shehab et al. 2004).'
","RabaaiEtAl2015CulturPerspeon",98,"","x","",""
"Time","scheduling","
`Findings – Results suggest that 9 critical failure items namely Inadequate resources, Poor User involvement, Users' resistance to change, High Attrition rate of project team members, Lack of top management commitment, Poor project management, Inadequate project team composition, Ineffective organizational change management and Unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.'
","GargEtAl2013EmpiriStudyon",496,"","x","",""
"Time","scheduling","
`Pareto chart per factors for ERP failure Pareto analysis suggest that nine critical failure items namely inadequate resources, poor user involvement, users' resistance to change, higher attrition rate of project team members, Lack of top management commitment, Poor project management, inadequate project team composition, ineffective organizational change management, unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.'
","GargEtAl2013EmpiriStudyon",507,"","x","",""
"Time","time","
`Summarising, Velcu (2010), using an analytical approach to investigate ERP system implementations, reports that when ERP system implementation strategies are aligned with business strategy, it is more likely that ERP implementation will be completed on budget and on time.'
","AliEtAl2017ERPSystemImplem",678,"","x","",""
"Time","time","
`C states: ``Projects have to meet time, budget and scope targets to be called successful.'' H, on the other hand, thinks time is not the main priority in ERP upgrade projects, as long as there is a usable system in place and productivity is not endangered.'
","BarthEtAl2019CriticSuccesFactor",663,"","x","",""
"Time","time","
`Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.'
","FinneyEtAl2007ERPImplemCompil",340,"","x","",""
"Time","time","
`These factors include, but not limited to, poor consultant effectiveness, ERP software misfit, unrealistic expectations from top management concerning the ERP systems, over-reliance on heavy customization, poor quality of Business Process Reengineering (BPR), high turnover rate of project team members, poor IT

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Infrastructure, functionality problems with the system, unclear concept of the
nature and use of the ERP system from the users perspective, too tight project
schedule, lack of formal communication, part-time dedication, etc.'
","GargEtAl2013EmpiriStudyon",498,"","x","",""
"Time","time","
`Several essential CSFs have been turned into valid and measurable constructs
covering both technical and organisational factors (Bhatti, 2005), Many studies
around this time detailed other specific CSFs applicable in implementation, but
lacked attention to stakeholder perspective and change management aspects
(Finney and Corbett, 2007).'
","RabaaiEtAl2015CulturPerspeon",87,"","x","",""
"Time","time","
`Both sectors also showed a similar profile on implementation time with only 11%
of the participants' projects completing on time, around 40% up to 6 months late
and 44% taking up to a year.'
","RabaaiEtAl2015CulturPerspeon",92,"","x","",""
"Time","time","
`Customisation increases project time, ruins schedules, introduce new bugs into
the system, and make the upgrade to new release harder (Shehab et al. 2004).'
","RabaaiEtAl2015CulturPerspeon",98,"","x","",""
"Time","time","
`Public organisations have more rigid hierarchies and structures, as well as
more bureaucracy generally, and with consensus decision-making also delaying the
process considerably, the deep culture of public sector organisations affects
timely implementation.'
","RabaaiEtAl2015CulturPerspeon",98,"","x","",""
"Time","time","
`Generally, it is believed that the project is partially failed because it is
not completed within time and/or budget (process failure), the ERP systems do
not live up to user expectations (expectation failure), and there is no match
between ERP systems and the planned objectives (correspondence failure).'
","RavasanEtAl2014FCM-BaDynamiModeli",40,"","x","",""
"Time","time","
`...mentation evaluation 22 implementation time 46 national culture 23
management of expectations 47 country related functional requirements 24 project
management 48 centralization'
","SaygiliEtAl2017EndUsersPercep",64,"","x","",""
"Time","time","
`Fourth, deploy supporting tools to control the data quality process by
monitoring all dimensions, that is, amount, accuracy, timeliness, completeness,
consistency, accessibility, and multiple sources of the same data.'
","ShaulEtAl2013CriticSuccesFactor",19,"","x","",""
"Tools","tool","
`They rate CSFs by a degree of importance during ERP implementation as follows:
(1) top management support; (2) project team competence; (3) inter-departmental
cooperation; (4) clear goals and objectives; (5) project management; (6) inter-
departmental communication; (7) management of expectation; (8) project champion;
(9) vendors' support; (10) careful package selection; (11) data analysis and
conversion; (12) dedicated resources; (13) use of steering committee; (14) user
training on software; (15) education on new business processes; (16) BPR; (17)
minimal customisation; (18) architecture choices; (19) change management; (20)
partnership with vendors; (21) use of vendors' tool; and (22) use of
consultant.'
","AliEtAl2017ERPSystemImplem",674,"","x","",""
"Tools","tool","
`A strategic partnership with the software vendor enables using implementation
tools such as process modeling, templates for specific business practices or
packages of software, services and support, as well as bestpractices (Somers and
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Nelson, 2004).'
","BarthEtAl2019CriticSuccesFactor",659,"","x","",""
"Tools","tool","
`Even though test automation tools for ERP systems are expensive and are often not able to cover individually developed parts of the system, test automation is a way to reach a high standardization of the testing process.'
","BarthEtAl2019CriticSuccesFactor",665,"","x","",""
"Tools","tool","
`This stage might involve business process change techniques such as business process modeling (Al-Mudimigh et al., 2001; Holland and Light, 1999) or other vendor development tools (Somers and Nelson, 2001, 2004).'
","FinneyEtAl2007ERPImplemCompil",338,"","x","",""
"Tools","tool","
`As such, strategies, policies, security tools and mechanisms to ensure security play an important role in the successful adoption and implementation of Cloud ERP [15].'
","HuangEtAl2021CriticSuccesFactor",4685,"","x","",""
"Tools","tool","
`In addition, an organization can reduce the cost of implementation, gain other benefits from partnerships with the vendor, and use the vendor's customization tools [69].'
","NgaiEtAl2008ExaminCriticSucces",555,"","x","",""
"Tools","tool","
`Organizations should provide a customized training and education programme that provides employees with tools and practical experience needed to integrate new processes, roles, and responsibilities; along with training in the differences between the new technology and the old technology to ensure a successful transition [12].'
","NgaiEtAl2008ExaminCriticSucces",558,"","x","",""
"Tools","tool","
`A business process is ``comprised of the people who conduct it, the tools they use to assist them, the procedures they follow and the flows of material and information between the various people, groups and subactivities''.'
","OsmanEtAl2019ERPCriticSucces",38,"","x","",""
"Tools","tool","
`Reduce trouble shooting and project risk risk management which involves developing proper troubleshooting tools, adequate skills and techniques and in relation to the CSF use of consultants, working closely with vendors and consultants when something is wrong in the system [4].'
","OsmanEtAl2019ERPCriticSucces",38,"","x","",""
"Tools","tool","
`We've bought a product called Constaller Hub; it's a tool that you can run nightly, hourly or every five minutes, to achieve that kind of integration, we have been using this product for more than five years'' (The associate IT director at QUT, Personal Communication, 3rd of March, 2009).'
","RabaaiEtAl2009ERPSystemHigher",464,"","x","",""
"Tools","tool","
`Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data

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analysis- conversion 40 project champion 17 software development testing &
troubleshooting 41 appropriate business-legacy systems 18 implementation
strategies 42 data integration 19 ERP package selection 43 scope & vision based
performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of
performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","x","",""
"Tools","tool","
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation
strategies (23) Management of expectations (24) Project management (32) Employee
/ team morale & motivation (33) Leadership of the project team (34) Project team
competence and composition 2 (14) Software configuration (21) IT infrastructure
(28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor
development tools (38) Use of consultants 3 (40) Project champion (46) National
culture (47) Country related functional requirements (48) Centralization 4 (1)
Top management support (2) Effective communication (3) Interdepartmental
communication (4) Clear goals and objectives (5) Business plan & vision 5 (15)
Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7)
Education on new business processes (8) User training and education (9) User
acceptance (10) Managing cultural change this result maybe, end-users resist
changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"","x","",""
"Tools","tool","
`Sub-factors designated pertaining to vendors are ongoing vendor support, ERP
vendor relations and support of vendors' development tools.'
","SaygiliEtAl2017EndUsersPercep",68,"","x","",""
"Tools","tool","
`Fourth, deploy supporting tools to control the data quality process by
monitoring all dimensions, that is, amount, accuracy, timeliness, completeness,
consistency, accessibility, and multiple sources of the same data.'
","ShaulEtAl2013CriticSuccesFactor",19,"","x","",""
"Top Management Support","top management","
`The authors find that top management support, good project management teams,
and good communications are the top three most important critical successful
factors during implementation.'
","AliEtAl2017ERPSystemImplem",666,"","","","x"
"Top Management Support","top management","
`Surprisingly, the role of top management support is found to be less important
than that provided by users (Maditinos et al., 2011).'
","AliEtAl2017ERPSystemImplem",673,"","","","x"
"Top Management Support","top management","
`CSFs for successful ERP implementation are identified as top management
support, presence of a champion, good communication with stakeholders, effective
project planning, business process re-engineering (BPR), and using a business
analyst on the project team (Bancroft et al., 1998; Bingi et al., 1999).'
","AliEtAl2017ERPSystemImplem",674,"","","","x"
"Top Management Support","top management","
`They rate CSFs by a degree of importance during ERP implementation as follows:
(1) top management support; (2) project team competence; (3) inter-departmental
cooperation; (4) clear goals and objectives; (5) project management; (6) inter-
departmental communication; (7) management of expectation; (8) project champion;
(9) vendors' support; (10) careful package selection; (11) data analysis and
conversion; (12) dedicated resources; (13) use of steering committee; (14) user
training on software; (15) education on new business processes; (16) BPR; (17)
minimal customisation; (18) architecture choices; (19) change management; (20)
partnership with vendors; (21) use of vendors' tool; and (22) use of
consultant.'
","AliEtAl2017ERPSystemImplem",674,"","","","x"
"Top Management Support","top management","
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`Important CSFs identified are: ERP team work and composition, top management support, business plan and vision, effective communication, project management, project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and evaluation of performance.'
","AliEtAl2017ERPSystemImplem",675,"","","","x"
"Top Management Support","top management","
`CSFs identified for successful implementation are: a clear understanding of strategic goals, top management commitment and support, organisational change management strategy, good implementation team, data accuracy, extensive education and training, focussed performance measures, and multi-site issues.'
","AliEtAl2017ERPSystemImplem",675,"","","","x"
"Top Management Support","top management","
`They identify causes of ERP implementation failure as excessive customisation, dilemma of internal integration, poor understanding of business implications and requirements, lack of change management strategy, poor data quality, misalignment of IT with business, hidden costs, limited training, and lack of top management support.'
","AliEtAl2017ERPSystemImplem",681,"","","","x"
"Top Management Support","top management","
`The most common causes of ERP implementation failures are a combination of poor planning and high software customisation (Scheer and Habbermann, 2000), lack of top management commitment; ineffective communication; insufficient training; lack of user support, poor project management, relying on legacy systems, inter-departmental conflicts, poor composition of project teams, failure in redesigning business processes and, lack of clarity about required changes.'
","AliEtAl2017ERPSystemImplem",682,"","","","x"
"Top Management Support","top management","
`The study founds a significant association of technological, strategic, project management, people, top management support and communication factor with ERP implementation.'
","AnjumEtAl2015FactorManipuERP",628,"","","","x"
"Top Management Support","top management","
`Strategic: Top management support, business plan and vision have been frequently recognized as the most significant and critical success factors in ERP system execution projects (Somers and Nelson, 2001).'
","AnjumEtAl2015FactorManipuERP",629,"","","","x"
"Top Management Support","top management","
`Top management support is the level of obligation by senior staff in the organization of the project in terms of their own association and the motivation to distribute important managerial resources (Slevin and Pinto, 1987).'
","AnjumEtAl2015FactorManipuERP",629,"","","","x"
"Top Management Support","top management","
`Work practices, poor data quality, BPR activities, customization of the ERP system, internal staff adequacy, training, top management support, quality of consultants are the main problems (Genoulaz & Millet, 2006).'
","BasogluEtAl2007OrganiAdoptiEnterp",89,"","","","x"
"Top Management Support","top management","
`The results of this study show that ``Managers and employees readiness to change'', ``Top management Support'', ``Business Process Reengineering'', ``Software and user interface development'' and ``Change management'' are five top critical success factors.'
","Chan2013AustraQuantiSurvey",109,"","","","x"
"Top Management Support","top management","
`In this study, the dimension of ``internal environment'' includes four factors (top management support, business process reengineering, organizational culture, change management).'
","ChatzoglouEtAl2016AnteceOutcomERP",1255,"","","","x"

"Top Management Support","top management","
`Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.'
","FinneyEtAl2007ERPImplemCompil",340,"","","","x"
"Top Management Support","top management","
`Findings - Results suggest that 9 critical failure items namely Inadequate resources, Poor User involvement, Users' resistance to change, High Attrition rate of project team members, Lack of top management commitment, Poor project management, Inadequate project team composition, Ineffective organizational change management and Unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.'
","GargEtAl2013EmpiriStudyon",496,"","","","x"
"Top Management Support","top management","
`These factors include, but not limited to, poor consultant effectiveness, ERP software misfit, unrealistic expectations from top management concerning the ERP systems, over-reliance on heavy customization, poor quality of Business Process Reengineering (BPR), high turnover rate of project team members, poor IT Infrastructure, functionality problems with the system, unclear concept of the nature and use of the ERP system from the users perspective, too tight project schedule, lack of formal communication, part-time dedication, etc.'
","GargEtAl2013EmpiriStudyon",498,"","","","x"
"Top Management Support","top management","
`Pareto chart per factors for ERP failure Pareto analysis suggest that nine critical failure items namely inadequate resources, poor user involvement, users' resistance to change, higher attrition rate of project team members, Lack of top management commitment, Poor project management, inadequate project team composition, ineffective organizational change management, unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.'
","GargEtAl2013EmpiriStudyon",507,"","","","x"
"Top Management Support","top management","
`(1) The ``Organizational'' factor in this study is defined by business plan and vision, top management support, business process reengineering, ERP product selection, selection of implementation partner/consultants and enterprise wide communication plan items which may affect the success of ERP implementation in Indian retail sector.'
","GargEtAl2015FactorAffectERP",1327,"","","","x"
"Top Management Support","top management","
`Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) ● Communication within the company ● Organization resistance ● Project budget ● Project management ● Implementation strategy ● Strategic goals and objectives ● Business process reengineering ● organizational culture ● knowledge base of the company ● Project planning and control ● Facilitating conditions ● Organization size ● The vision of the organization ● Readiness of organizations ● Clarity of potential cost ● User involvement ● Selection of vendor/consult ant ● Project team ● Top management support ● Training of user ● Trust on vendor ● Performance

expectancy ● Effort expectancy ● Social influence ● Age ● Gender ● Highest degree attained ● Selection of ERP package ● IT infrastructure ● Data integrity and system testing.'
","HuangEtAl2021CriticSuccesFactor",4686,"","","","x"
"Top Management Support","top management","
`The research concludes that: (1) Quality (adequacy) and quantity of training and education of personnel/users, role and effectiveness of management in reducing the users' resistance, use of steering committee for control purpose, top management support or involvement, clearly specified goals/objectives/scope regarding ERP system, ease of system's use and users' acceptance, vendor's support, project management, effective communication among the organizational members and a balanced team for ERP implementation are practically considered by the successful enterprises in China while planning and going for the implementation of the ERP system and are thus critical for the success of ERP systems implementation projects, ignoring of which may cause implementation failure in the Chinese organizations; (2) Some of the factors deemed imperative for ERP systems implementation success in the literature like; selection of a right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role of consultant, change management strategy and programs, competency in use of IT and IT infrastructure, business...'
","KhattakEtAl2013InvestCriticSucces",68,"","","","x"
"Top Management Support","top management","
`According to the literature, the most studied factors were: Top Management Support, Effective Communication, Training, and Education, Business plan and vision, Project Management, BPR management, Change Management, Project team Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation, Technological Infrastructure, Legacy systems consideration.'
","MahrazEtAl2020CompilAnalysCritic",112,"","","","x"
"Top Management Support","top management","
`The findings of our study reveal that `appropriate business and IT legacy systems', `business plan/vision/goals/justification', `business process reengineering', `change management culture and programme', `communication', `ERP teamwork and composition', `monitoring and evaluation of performance', `project champion', `project management', `software/system development, testing and troubleshooting', `top management support', `data management', `ERP strategy and implementation methodology', `ERP vendor', `organizational characteristics', `fit between ERP and business/process', `national culture' and `country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.'
","NgaiEtAl2008ExaminCriticSucces",548,"","","","x"
"Top Management Support","top management","
`Eleven critical factors were identified, such as ERP teamwork and composition, change management program and culture, top management support, business plan and vision, business process reengineering (BPR) and minimum customisation, effective communications, project management, software development, testing and troubleshooting, monitoring and evaluating performance, project champion, and appropriate business and IT legacy systems.'
","Rabaai2009IdentiCriticSucces",6,"","","","x"
"Top Management Support","top management","
`Based on the work by Markus and Tanis (2000), Nah and Delgado organised these factors into seven main categories: (1) Business plan and vision; (2) Change management; (3) Communication; (4) ERP team composition, skills, and compensation; (5) Project management; (6) Top management support and championship; and (7) System analysis, selection, and technical implementation.'
","Rabaai2009IdentiCriticSucces",6,"","","","x"
"Top Management Support","top management","
`The critical success factors consistently identified in the literature include

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top management support, the presence of a champion, good communication with all
stakeholders, effective project management, reengineering of business processes,
an understanding of corporate cultural change, and the use of business analysts
on the project team.'
","RabaaiEtAl2015CulturPerspeon",88,"","","","x"
"Top Management Support","top management","
`In Jordan, and indeed most Arabic countries, this may be explained by the
convention that top management consider themselves to have more important
obligations, responsibilities, and meetings.'
","RabaaiEtAl2015CulturPerspeon",98,"","","","x"
"Top Management Support","top management","
`Consequently, top management often develop report mechanisms to keep them
informed of a project's progress without any actual and deep involvement in the
project.'
","RabaaiEtAl2015CulturPerspeon",98,"","","","x"
"Top Management Support","top management","
`In Jordan, critical decisions and approvals are only taken by top management,
thus, project managers do not have access or control over financial resources
without approval from top management.'
","RabaaiEtAl2015CulturPerspeon",98,"","","","x"
"Top Management Support","top management","
`ERP failure factors and categories Failure Categories Failure Factors C4:
Project Management F1: Conflicts between organization and consultants/ vendor
C5: Technical F2: High rate of system customization C5: Technical F3: Data
management issues C2: Human Resources F4: Inadequate education and training C2:
Human Resources F5: Inadequate user involvement C2: Human Resources F6:
Ineffective communications system C3: Organizational F7: Internal conflicts
between departments C2: Human Resources F8: Inadequate change management C3:
Organizational F9: Lack of performance measurement system C3: Organizational
F10: Misfit between organization culture and ERP system C3: Organizational F11:
Misfit between organization structure and ERP system C3: Organizational F12:
Misfits between the IT and business strategies C1: Environmental F13:
Environmental pressures C3: Organizational F14: Poor business process
reengineering C1: Environmental F15: Poor consultant C4: Project Management F16:
Poor project management C4: Project Management F17: Poor risk management C3:
Organizational F18: Poor top management support C5: Technical F19: IT Technical
issues C2: Human Resources F20: Language barriers C4:...'
","RavasanEtAl2014FCM-BaDynamiModeli",42,"","","","x"
"Top Management Support","top management","
`Critical success factors identified in Turkish studies Author (s) Critical
Success Factors Baskak& Cetisli (2003) Top management support, business plan and
vision, ERP teamwork, ERP package selection, change management, user training
and education, effective communication, project management, data integration,
software testing and troubleshooting, appropriate legacy systems, monitoring and
evaluation of performance.'
","SaygiliEtAl2017EndUsersPercep",62,"","","","x"
"Top Management Support","top management","
`Item Description 1 top management support 25 application project costs 2
effective communication 26 interdepartmental cooperation 3 interdepartmental
communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor
relations 5 business plan-vision 29 ongoing vendor support 6 change management
30 use of vendor's development tools 7 education on new business process 31
organizational characteristics 8 user training& education 32 employee / team
morale-motivation 9 user acceptance 33 leadership of the project team 10
managing cultural change 34 project team competence- composition 11 business
process reengineering 35 ERP team work 12 customization 36 steering committee 13
minimal customization 37 empowered decision makers 14 software configuration 38
use of consultants 15 data accuracy 39 obtain business analysts 16 data
```

analysis- conversion 40 project champion 17 software development testing &
troubleshooting 41 appropriate business-legacy systems 18 implementation
strategies 42 data integration 19 ERP package selection 43 scope & vision based
performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of
performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","","","x"
"Top Management Support","top management","
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation
strategies (23) Management of expectations (24) Project management (32) Employee
/ team morale & motivation (33) Leadership of the project team (34) Project team
competence and composition 2 (14) Software configuration (21) IT infrastructure
(28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor
development tools (38) Use of consultants 3 (40) Project champion (46) National
culture (47) Country related functional requirements (48) Centralization 4 (1)
Top management support (2) Effective communication (3) Interdepartmental
communication (4) Clear goals and objectives (5) Business plan & vision 5 (15)
Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7)
Education on new business processes (8) User training and education (9) User
acceptance (10) Managing cultural change this result maybe, end-users resist
changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"","","","x"
"Top Management Support","top management","
`The proposed model confirms that following factors play a significant role
during implementation of SCMIS-top management support, user involvement, pre-
implementation analysis, user training, change management, data accuracy and
communication.'
","SethEtAl2015DeveloModelSucces",248,"","","","x"
"Top Management Support","top management","
`Organizations where top management is committed for IOS and relationship are
bound to be more successful as they will allocate more financial and human
resources.'
","SethEtAl2015DeveloModelSucces",250,"","","","x"
"Top Management Support","top management","
`According to the regression analysis on the successful implementation of SCMIS,
as shown in Table 8, factors that have significant impact at 5 per cent or
higher level include top management support, user support and involvement,
training and education, change management, pre-implementation analysis,
communication and data Table 7.'
","SethEtAl2015DeveloModelSucces",256,"","","","x"
"Top Management Support","top management","
`Note: Numbers are the beta weight and **p < 0.05. confirms that these CSVs has
a significant impact, and in order to have a successful implementation of SCMIS,
top management support, user support and involvement, preimplementation
analysis, training, change management, data accuracy and communication are
critical.'
","SethEtAl2015DeveloModelSucces",257,"","","","x"
"Top Management Support","top management","
`The findings of this study support the proposed hypothesis that top management
support has a positive impact on SCMIS implementation success (H1c), so an
increase in support of top management will lead to more successful
implementation.'
","SethEtAl2015DeveloModelSucces",258,"","","","x"
"Top Management Support","top management","
`Such consequences can be avoided by open communication with top management,
vendors, and consultants through the establishment of senior and professional
steering committees, a balanced project team, and a ``responsible'' definition
of success measures.'
","ShaulEtAl2013CriticSuccesFactor",19,"","","","x"

"Uncertainty Avoidance (-)","uncertainty avoidance","
`Examining ERP acceptance challenges from a Saudi Arabian cultural perspective,
Alhirz and Sajeev (2015) find power distance and individualism have no
significant impact on acceptance, however, uncertainty avoidance have a
significant influence.'
","AliEtAl2017ERPSystemImplem",673,"","","","x"
"User Involvement","client","
`Al-Mashari et al. (2003) and Al Mudimigh et al. (2001) mention the need for
communication and consultation with various key stakeholders, but in particular
with the client.'
","FinneyEtAl2007ERPImplemCompil",338,"x","","x",""
"User Involvement","client","
`Frequency analysis of CSFs in literature CSF category Top management commitment
and support Change management BPR and software configuration Training and job
redesign Project team: the best and brightest Implementation strategy and
timeframe Consultant selection and relationship Visioning and planning Balanced
team Project champion Communication plan IT infrastructure Managing cultural
change Post-implementation evaluation Selection of ERP Team morale and
motivation Vanilla ERP Project management Troubleshooting/crises management
Legacy system consideration Data conversion and integrity System testing Client
consultation Project cost planning and management Build a business case
Empowered decision makers Number of instances cited in literature 25 25 23 23 21
17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often
focused on only a specific aspect of the implementation process or a specific
CSF.'
","FinneyEtAl2007ERPImplemCompil",340,"x","","x",""
"User Involvement","customer","
`On the other hand, according to Wagner and Newell (2004), best practices of ERP
systems may be designed with a software company working in a partnering
relationship with a key industry customer to develop a package to meet the
unique requirements of a particular industry.'
","BasogluEtAl2007OrganiAdoptiEnterp",74,"x","","x",""
"User Involvement","customer","
`Similarly, Skok and Legge (2002, p. 82) have argued that there is a need to
``increase the multiplicity of relevant stakeholders'' to include groups such as
customers, suppliers, wholesalers, etc.'
","FinneyEtAl2007ERPImplemCompil",343,"x","","x",""
"User Involvement","user involvement","
`In addition, user involvement and satisfaction has a positive influence on ERP
systems, leading to system acceptance.'
","AliEtAl2017ERPSystemImplem",673,"","","x",""
"User Involvement","user involvement","
`Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000)
Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000)
Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in
personnel Lack of discipline Organisational resistance Lack of organisational
commitment Poor data accuracy Limited user involvement Mismatch between
organisation requirements and functionalities offered Lack of readiness for
integration Lack of focus on user education and training Excessive customisation
Inadequate organisational analysis Costs Project duration Technical challenges
Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.'
","AliEtAl2017ERPSystemImplem",681,"x","","x",""
"User Involvement","user involvement","
`In this study, the dimension of ``end-users'' includes three factors (user
involvement, training and education, employee skills).'
","ChatzoglouEtAl2016AnteceOutcomERP",1256,"x","","x",""
"User Involvement","user involvement","
`User involvement is one of the most cited critical success factors in ERP

implementation projects [14] [33].'
","ChatzoglouEtAl2016AnteceOutcomERP",1256,"x","","x",""
"User Involvement","user involvement","
`Lack of management support, poor organizational culture, communication
problems, financial management problems, lack of clarity on scope, project
management problems, poor project team, ERP software misfit, poor solution
implementer performance, poor quality of testing, outdated it infrastructure,
lack of training, highly customized ERP, poor process design, lack of user
involvement, resistance to change, unrealistic expectations are the main failure
factors that need to be analyzed in detail.'
","CoşkunEtAl2022ERPFailurSystem",3,"x","","x",""
"User Involvement","user involvement","
`For example, ``Lack of User Involvement'' causes ``Customer & Employee
Dissatisfaction''.'
","CoşkunEtAl2022ERPFailurSystem",13,"x","","x",""
"User Involvement","user involvement","
`Findings – Results suggest that 9 critical failure items namely Inadequate
resources, Poor User involvement, Users' resistance to change, High Attrition
rate of project team members, Lack of top management commitment, Poor project
management, Inadequate project team composition, Ineffective organizational
change management and Unrealistic project scheduling have a high impact on ERP
implementation and therefore deserve serious attention in the process of ERP
implementation.'
","GargEtAl2013EmpiriStudyon",496,"x","","x",""
"User Involvement","user involvement","
`Pareto chart per factors for ERP failure Pareto analysis suggest that nine
critical failure items namely inadequate resources, poor user involvement,
users' resistance to change, higher attrition rate of project team members, Lack
of top management commitment, Poor project management, inadequate project team
composition, ineffective organizational change management, unrealistic project
scheduling have a high impact on ERP implementation and therefore deserve
serious attention in the process of ERP implementation.'
","GargEtAl2013EmpiriStudyon",507,"x","","x",""
"User Involvement","user involvement","
`On the similar fashion Rasmy and Esteves also described that user involvement
in defining ERP systems needs and user involvement in the implementation of ERP
systems are important aspects, The user involvement in ERP systems will be
helpful to get user requirements, better quality of the system and increase
system usage (Rasmy et al., 2005; Esteves et al., 2003) (People).'
","GargEtAl2013EmpiriStudyon",508,"x","","x",""
"User Involvement","user involvement","
`It is reported that factor 1 could be labeled as ``Top management commitment,''
factor 2 could be labeled as ``User involvement,'' factor 3 could be labeled as
``Business process reengineering,'' factor 4 could be labeled as ``Project
management'' and while the last factor could be labeled as ``ERP teamwork and
composition.'' The 24 items are further employed in order to perform reliability
test, bivariate correlation and multiple regression analysis.'
","GargEtAl2014CriticSuccesFactor",411,"x","","x",""
"User Involvement","user involvement","
`User involvement is essential because it improves perceived control through
participating in the whole project plan.'
","GargEtAl2014FactorInflueERP",433,"x","","x",""
"User Involvement","user involvement","
`User involvement is one of the most cited critical success factors in ERP
implementation projects (Zhang et al., 2005).'
","GargEtAl2014FactorInflueERP",433,"x","","x",""
"User Involvement","user involvement","
`User involvement increase user satisfaction and acceptance by developing

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realistic expectations about system capabilities (Esteves and Casanovas, 2003):
H3.'
","GargEtAl2014FactorInflueERP",433,"x","","x",""
"User Involvement","user involvement","
`Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) ●
Communication within the company ● Organization resistance ● Project budget ●
Project management ● Implementation strategy ● Strategic goals and objectives ●
Business process reengineering ● organizational culture ● knowledge base of the
company ● Project planning and control ● Facilitating conditions ● Organization
size ● The vision of the organization ● Readiness of organizations ● Clarity of
potential cost ● User involvement ● Selection of vendor/consult ant ● Project
team ● Top management support ● Training of user ● Trust on vendor ● Performance
expectancy ● Effort expectancy ● Social influence ● Age ● Gender ● Highest
degree attained ● Selection of ERP package ● IT infrastructure ● Data integrity
and system testing.'
","HuangEtAl2021CriticSuccesFactor",4686,"x","","x",""
"User Involvement","user involvement","
`For example, according to Gupta and Misra [14], user involvement refers to
employees of organizations who should be involved during the implementation
stage to be familiar with Cloud ERP systems.'
","HuangEtAl2021CriticSuccesFactor",4687,"x","","x",""
"User Involvement","user involvement","
`Problems in companies under study include poor communication, lack of support
from department heads, poor training services from vendor, and low user
involvement.'
","NgaiEtAl2008ExaminCriticSucces",559,"x","","x",""
"User Involvement","user involvement","
`Other problems reported are lack of BPR [87], poor communications, lack of
support from management, limited level of user involvement, poor training from
vendors [90], and weakness in existing IT infrastructure [41].'
","NgaiEtAl2008ExaminCriticSucces",559,"x","","x",""
"User Involvement","user involvement","
`[13] Change program should cover end user involvement and training in the
implementation stage and they must be regularly supported from top management or
implementation team.'
","OsmanEtAl2019ERPCriticSucces",38,"x","","x",""
"User Involvement","user involvement","
`User involvement It is definitely essential for the success of ERP adoption.'
","OsmanEtAl2019ERPCriticSucces",38,"x","","x",""
"User Involvement","user involvement","
`The user involvement can hence, be referred to a psychological state of the
individual as the importance and personal relevance of the system to the user
[28].'
","OsmanEtAl2019ERPCriticSucces",38,"x","","x",""
"User Involvement","user involvement","
`Therefore, the user involvement and participation are considered critical
success factors as they will result in a better fit of user requirements and
enhancing a better system quality, use and acceptance 2.2.8.'
","OsmanEtAl2019ERPCriticSucces",38,"x","","x",""
"User Involvement","user involvement","
`Low ease of use could be due to the complexity and unfamiliarity of the
interfaces, ineffective end-user education and training, inadequate user
involvement and participation in the implementation, or simply user rejection of
the technology.'
","RabaaiEtAl2015CulturPerspeon",97,"x","","x",""
"User Involvement","user involvement","
`ERP failure factors and categories Failure Categories Failure Factors C4:
Project Management F1: Conflicts between organization and consultants/ vendor
```

C5: Technical F2: High rate of system customization C5: Technical F3: Data management issues C2: Human Resources F4: Inadequate education and training C2: Human Resources F5: Inadequate user involvement C2: Human Resources F6: Ineffective communications system C3: Organizational F7: Internal conflicts between departments C2: Human Resources F8: Inadequate change management C3: Organizational F9: Lack of performance measurement system C3: Organizational F10: Misfit between organization culture and ERP system C3: Organizational F11: Misfit between organization structure and ERP system C3: Organizational F12: Misfits between the IT and business strategies C1: Environmental F13: Environmental pressures C3: Organizational F14: Poor business process reengineering C1: Environmental F15: Poor consultant C4: Project Management F16: Poor project management C4: Project Management F17: Poor risk management C3: Organizational F18: Poor top management support C5: Technical F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...'
","RavasanEtAl2014FCM-BaDynamiModeli",42,"x","","x",""
"User Involvement","user involvement","
`The proposed model confirms that following factors play a significant role during implementation of SCMIS-top management support, user involvement, pre-implementation analysis, user training, change management, data accuracy and communication.'
","SethEtAl2015DeveloModelSucces",248,"x","","x",""
"User Involvement","user involvement","
`Human Dimension These factors are among the most important (critical) as the system being implemented is for the employees; therefore, the user involvement and participation should start much before the implementation takes place as has been emphasized by various studies (Bingi et al., 1999; Holland et al., 1999).'
","SethEtAl2015DeveloModelSucces",251,"x","","x",""
"User Involvement","user involvement","
`Next, the study supported the proposed hypothesis that user involvement and support has a positive impact on SCMIS implementation success (H1e), so an increase in user involvement will lead to more successful implementation.'
","SethEtAl2015DeveloModelSucces",258,"x","","x",""
"Vendor Support","partnership with vendor","
`They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.'
","AliEtAl2017ERPSystemImplem",674,"","","","x"
"Vendor Support","software vendor","
`A strategic partnership with the software vendor enables using implementation tools such as process modeling, templates for specific business practices or packages of software, services and support, as well as bestpractices (Somers and Nelson, 2004).'
","BarthEtAl2019CriticSuccesFactor",659,"","","","x"
"Vendor Support","software vendor","
`The project team can eventually be equipped with comprehensive and useful information on the current business processes and how information is accessed and flows across divisions or systems since most ERP software vendors make assumptions about management philosophy and business practices.'
","ShaulEtAl2013CriticSuccesFactor",18,"","","","x"
"Vendor Support","software vendor","
`Thus, buying an enterprise application means much more than purchasing software

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and involves buying into the software vendor's view of best practices for many
of the company's processes.'
","ShaulEtAl2013CriticSuccesFactor",18,"","","","x"
"Vendor Support","software vendor","
`However, King and Burgess [2008] found similarities between ERP and CRM
implementations and between their respective CSFs as they both are large-scale
integration technologies, and often are packages supplied by large software
vendors.'
","ShaulEtAl2013CriticSuccesFactor",24,"","","","x"
"Vendor Support","use of vendor","
`They rate CSFs by a degree of importance during ERP implementation as follows:
(1) top management support; (2) project team competence; (3) inter-departmental
cooperation; (4) clear goals and objectives; (5) project management; (6) inter-
departmental communication; (7) management of expectation; (8) project champion;
(9) vendors' support; (10) careful package selection; (11) data analysis and
conversion; (12) dedicated resources; (13) use of steering committee; (14) user
training on software; (15) education on new business processes; (16) BPR; (17)
minimal customisation; (18) architecture choices; (19) change management; (20)
partnership with vendors; (21) use of vendors' tool; and (22) use of
consultant.'
","AliEtAl2017ERPSystemImplem",674,"","","","x"
"Vendor Support","use of vendor","
`Item Description 1 top management support 25 application project costs 2
effective communication 26 interdepartmental cooperation 3 interdepartmental
communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor
relations 5 business plan-vision 29 ongoing vendor support 6 change management
30 use of vendor's development tools 7 education on new business process 31
organizational characteristics 8 user training& education 32 employee / team
morale-motivation 9 user acceptance 33 leadership of the project team 10
managing cultural change 34 project team competence- composition 11 business
process reengineering 35 ERP team work 12 customization 36 steering committee 13
minimal customization 37 empowered decision makers 14 software configuration 38
use of consultants 15 data accuracy 39 obtain business analysts 16 data
analysis- conversion 40 project champion 17 software development testing &
troubleshooting 41 appropriate business-legacy systems 18 implementation
strategies 42 data integration 19 ERP package selection 43 scope & vision based
performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of
performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","","","x"
"Vendor Support","vendor support","
`The authors report risk factors such as loss of qualified IT experts after
implementation, inaccurate master production schedules, user resistance, loss of
ERP-related know-how, lack of vendor support, failure to produce an appropriate
material requirement plan, and inefficient integration between modules are
primary risk factors that can affect the viability of ERP projects.'
","AliEtAl2017ERPSystemImplem",678,"","","","x"
"Vendor Support","vendor support","
`According to a large-scale European multi-country survey the most important
factor is the best fit with current business processes, respectively,
organization (Hong and Kim, 2002; Ngai et al., 2008), followed by flexibility,
cost, user-friendliness, scalability and vendor support (van Everdingen et al.,
2000).'
","BarthEtAl2019CriticSuccesFactor",659,"","","","x"
"Vendor Support","vendor support","
`Item Description 1 top management support 25 application project costs 2
effective communication 26 interdepartmental cooperation 3 interdepartmental
communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor
relations 5 business plan-vision 29 ongoing vendor support 6 change management
```

30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","","","x"
"Vendor Support","vendor support",""
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"","","","x"
"Vendor Support","vendor support",""
`Sub-factors designated pertaining to vendors are ongoing vendor support, ERP vendor relations and support of vendors' development tools.'
","SaygiliEtAl2017EndUsersPercep",68,"","","","x"
"Vendor Support","vendor support",""
`Provide ongoing vendor support including technical assistance, emergency maintenance, updates, and special user training.'
","SaygiliEtAl2017EndUsersPercep",74,"","","","x"
"Vendor Support","vendor support",""
`The major upgrade phase typically requires a considerable amount of resources, both financial and human, and a need to keep pace with ERP vendor upgrades to guarantee vendor support for the system by providing upgrades to ``fix'' outstanding ``bugs,'' current best practices, or design weaknesses [Agerfalk et al. 2009].'
","ShaulEtAl2013CriticSuccesFactor",22,"","","","x"
"Vision, Goals & Objectives","alignment",""
`They identify causes of ERP implementation failure as excessive customisation, dilemma of internal integration, poor understanding of business implications and requirements, lack of change management strategy, poor data quality, misalignment of IT with business, hidden costs, limited training, and lack of top management support.'
","AliEtAl2017ERPSystemImplem",681,"","","","x"
"Vision, Goals & Objectives","business plan",""
`Important CSFs identified are: ERP team work and composition, top management support, business plan and vision, effective communication, project management, project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and evaluation of performance.'
","AliEtAl2017ERPSystemImplem",675,"","","","x"
"Vision, Goals & Objectives","business plan",""

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`Lesser, but still important CSFs are, having a good business plan, vision,
having a project champion, appropriate business and legacy systems, change
management programmes, culture, BPR, minimum customisation, software
development, testing, trouble shooting, monitoring, and the evaluation of
performance (Markus, Axline, Petrie and Tanis, 2000; Bancroft et al., 1998;
Bingi et al., 1999; Nah et al., 2001; Umble et al., 2003; Ehie and Madsen, 2005;
Sarkar and Lee, 2003; Umble et al., 2003; Kim et al., 2005; Motwani et al.,
2005; Nah and Delgado, 2006; Maguire et al., 2010).'
","AliEtAl2017ERPSystemImplem",682,"","","","x"
"Vision, Goals & Objectives","business plan","
`Strategic: Top management support, business plan and vision have been
frequently recognized as the most significant and critical success factors in
ERP system execution projects (Somers and Nelson, 2001).'
","AnjumEtAl2015FactorManipuERP",629,"","","","x"
"Vision, Goals & Objectives","business plan","
`P7: The level of integration of business planning with IT or ERP planning is
positively related to project implementation success.'
","KhattakEtAl2013InvestCriticSucces",48,"","","","x"
"Vision, Goals & Objectives","business plan","
`The research concludes that: (1) Quality (adequacy) and quantity of training
and education of personnel/users, role and effectiveness of management in
reducing the users' resistance, use of steering committee for control purpose,
top management support or involvement, clearly specified goals/objectives/scope
regarding ERP system, ease of system's use and users' acceptance, vendor's
support, project management, effective communication among the organizational
members and a balanced team for ERP implementation are practically considered by
the successful enterprises in China while planning and going for the
implementation of the ERP system and are thus critical for the success of ERP
systems implementation projects, ignoring of which may cause implementation
failure in the Chinese organizations; (2) Some of the factors deemed imperative
for ERP systems implementation success in the literature like; selection of a
right full time project manager with extensive experience, presence/existence of
a champion, integration of business planning with IT/ERP planning, use and role
of consultant, change management strategy and programs, competency in use of IT
and IT infrastructure, business...'
","KhattakEtAl2013InvestCriticSucces",68,"","","","x"
"Vision, Goals & Objectives","business plan","
`According to the literature, the most studied factors were: Top Management
Support, Effective Communication, Training, and Education, Business plan and
vision, Project Management, BPR management, Change Management, Project team
Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation,
Technological Infrastructure, Legacy systems consideration.'
","MahrazEtAl2020CompilAnalysCritic",112,"","","","x"
"Vision, Goals & Objectives","business plan","
`The findings of our study reveal that `appropriate business and IT legacy
systems', `business plan/vision/goals/justification', `business process
reengineering', `change management culture and programme', `communication', `ERP
teamwork and composition', `monitoring and evaluation of performance', `project
champion', `project management', `software/system development, testing and
troubleshooting', `top management support', `data management', `ERP strategy and
implementation methodology', `ERP vendor', `organizational characteristics',
`fit between ERP and business/process', `national culture' and `country-related
functional requirement' were the commonly extracted factors across these 10
countries/regions.'
","NgaiEtAl2008ExaminCriticSucces",548,"","","","x"
"Vision, Goals & Objectives","business plan","
`Eleven critical factors were identified, such as ERP teamwork and composition,
change management program and culture, top management support, business plan and
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vision, business process reengineering (BPR) and minimum customisation, effective communications, project management, software development, testing and troubleshooting, monitoring and evaluating performance, project champion, and appropriate business and IT legacy systems.'
","Rabaai2009IdentiCriticSucces",6,"","","","x"
"Vision, Goals & Objectives","business plan","
`Based on the work by Markus and Tanis (2000), Nah and Delgado organised these factors into seven main categories: (1) Business plan and vision; (2) Change management; (3) Communication; (4) ERP team composition, skills, and compensation; (5) Project management; (6) Top management support and championship; and (7) System analysis, selection, and technical implementation.'
","Rabaai2009IdentiCriticSucces",6,"","","","x"
"Vision, Goals & Objectives","business plan","
`Critical success factors identified in Turkish studies Author (s) Critical Success Factors Baskak& Cetisli (2003) Top management support, business plan and vision, ERP teamwork, ERP package selection, change management, user training and education, effective communication, project management, data integration, software testing and troubleshooting, appropriate legacy systems, monitoring and evaluation of performance.'
","SaygiliEtAl2017EndUsersPercep",62,"","","","x"
"Vision, Goals & Objectives","business plan","
`Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","","","x"
"Vision, Goals & Objectives","business plan","
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"","","","x"
"Vision, Goals & Objectives","business strategy","
`Summarising, Velcu (2010), using an analytical approach to investigate ERP system implementations, reports that when ERP system implementation strategies are aligned with business strategy, it is more likely that ERP implementation will be completed on budget and on time.'

","AliEtAl2017ERPSystemImplem",678,"","","","x"
"Vision, Goals & Objectives","goals","
`They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.'
","AliEtAl2017ERPSystemImplem",674,"","","","x"
"Vision, Goals & Objectives","goals","
`CSFs identified for successful implementation are: a clear understanding of strategic goals, top management commitment and support, organisational change management strategy, good implementation team, data accuracy, extensive education and training, focussed performance measures, and multi-site issues.'
","AliEtAl2017ERPSystemImplem",675,"","","","x"
"Vision, Goals & Objectives","goals","
`Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) ● Communication within the company ● Organization resistance ● Project budget ● Project management ● Implementation strategy ● Strategic goals and objectives ● Business process reengineering ● organizational culture ● knowledge base of the company ● Project planning and control ● Facilitating conditions ● Organization size ● The vision of the organization ● Readiness of organizations ● Clarity of potential cost ● User involvement ● Selection of vendor/consult ant ● Project team ● Top management support ● Training of user ● Trust on vendor ● Performance expectancy ● Effort expectancy ● Social influence ● Age ● Gender ● Highest degree attained ● Selection of ERP package ● IT infrastructure ● Data integrity and system testing.'
","HuangEtAl2021CriticSuccesFactor",4686,"","","","x"
"Vision, Goals & Objectives","goals","
`The research concludes that: (1) Quality (adequacy) and quantity of training and education of personnel/users, role and effectiveness of management in reducing the users' resistance, use of steering committee for control purpose, top management support or involvement, clearly specified goals/objectives/scope regarding ERP system, ease of system's use and users' acceptance, vendor's support, project management, effective communication among the organizational members and a balanced team for ERP implementation are practically considered by the successful enterprises in China while planning and going for the implementation of the ERP system and are thus critical for the success of ERP systems implementation projects, ignoring of which may cause implementation failure in the Chinese organizations; (2) Some of the factors deemed imperative for ERP systems implementation success in the literature like; selection of a right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role of consultant, change management strategy and programs, competency in use of IT and IT infrastructure, business...'
","KhattakEtAl2013InvestCriticSucces",68,"","","","x"
"Vision, Goals & Objectives","goals","
`The findings of our study reveal that `appropriate business and IT legacy systems', `business plan/vision/goals/justification', `business process reengineering', `change management culture and programme', `communication', `ERP teamwork and composition', `monitoring and evaluation of performance', `project champion', `project management', `software/system development, testing and troubleshooting', `top management support', `data management', `ERP strategy and implementation methodology', `ERP vendor', `organizational characteristics',

`fit between ERP and business/process', `national culture' and `country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.'
","NgaiEtAl2008ExaminCriticSucces",548,"","","","x"
"Vision, Goals & Objectives","goals","
`Although the project communication planning was considered ineffective in both sectors, majorities in both sectors saw ERP implementations as fitting the organisation's vision and largely agreed the project goals and benefits were clear.'
","RabaaiEtAl2015CulturPerspeon",97,"","","","x"
"Vision, Goals & Objectives","goals","
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"","","","x"
"Vision, Goals & Objectives","goals","
`Educate and communicate management goals and long-term perspectives in implementations requiring new business process reengineering.'
","SaygiliEtAl2017EndUsersPercep",74,"","","","x"
"Vision, Goals & Objectives","goals","
`Chang [2004] indicates that: (a) 90% of ERP implementations are delivered late or are over budget, (b) enterprise initiatives show a 67% fail rate in achieving corporate goals and are considered negative or unsuccessful, (c) more than 40% of all large-scale projects fail.'
","ShaulEtAl2013CriticSuccesFactor",2,"","","","x"
"Vision, Goals & Objectives","misalignment of IT with business","
`They identify causes of ERP implementation failure as excessive customisation, dilemma of internal integration, poor understanding of business implications and requirements, lack of change management strategy, poor data quality, misalignment of IT with business, hidden costs, limited training, and lack of top management support.'
","AliEtAl2017ERPSystemImplem",681,"","","","x"
"Vision, Goals & Objectives","objectives","
`They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.'
","AliEtAl2017ERPSystemImplem",674,"","","","x"
"Vision, Goals & Objectives","objectives","
`Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) ● Communication within the company ● Organization resistance ● Project budget ● Project management ● Implementation strategy ● Strategic goals and objectives ●

```
Business process reengineering ● organizational culture ● knowledge base of the
company ● Project planning and control ● Facilitating conditions ● Organization
size ● The vision of the organization ● Readiness of organizations ● Clarity of
potential cost ● User involvement ● Selection of vendor/consult ant ● Project
team ● Top management support ● Training of user ● Trust on vendor ● Performance
expectancy ● Effort expectancy ● Social influence ● Age ● Gender ● Highest
degree attained ● Selection of ERP package ● IT infrastructure ● Data integrity
and system testing.'
","HuangEtAl2021CriticSuccesFactor",4686,"","","","x"
"Vision, Goals & Objectives","objectives","
`The research concludes that: (1) Quality (adequacy) and quantity of training
and education of personnel/users, role and effectiveness of management in
reducing the users' resistance, use of steering committee for control purpose,
top management support or involvement, clearly specified goals/objectives/scope
regarding ERP system, ease of system's use and users' acceptance, vendor's
support, project management, effective communication among the organizational
members and a balanced team for ERP implementation are practically considered by
the successful enterprises in China while planning and going for the
implementation of the ERP system and are thus critical for the success of ERP
systems implementation projects, ignoring of which may cause implementation
failure in the Chinese organizations; (2) Some of the factors deemed imperative
for ERP systems implementation success in the literature like; selection of a
right full time project manager with extensive experience, presence/existence of
a champion, integration of business planning with IT/ERP planning, use and role
of consultant, change management strategy and programs, competency in use of IT
and IT infrastructure, business...'
","KhattakEtAl2013InvestCriticSucces",68,"","","","x"
"Vision, Goals & Objectives","objectives","
`The whole organisation should be aware of the project scope, its objectives and
activities as an effective communication plan will have a direct impact on the
success of the change management program (Mendel, 1999).'
","Rabaai2009IdentiCriticSucces",10,"","","","x"
"Vision, Goals & Objectives","objectives","
`d) Correspondence failure, when there is no match between IT systems and the
planned objectives.'
","RavasanEtAl2014FCM-BaDynamiModeli",39,"","","","x"
"Vision, Goals & Objectives","objectives","
`Generally, it is believed that the project is partially failed because it is
not completed within time and/or budget (process failure), the ERP systems do
not live up to user expectations (expectation failure), and there is no match
between ERP systems and the planned objectives (correspondence failure).'
","RavasanEtAl2014FCM-BaDynamiModeli",40,"","","","x"
"Vision, Goals & Objectives","objectives","
`Item Description 1 top management support 25 application project costs 2
effective communication 26 interdepartmental cooperation 3 interdepartmental
communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor
relations 5 business plan-vision 29 ongoing vendor support 6 change management
30 use of vendor's development tools 7 education on new business process 31
organizational characteristics 8 user training& education 32 employee / team
morale-motivation 9 user acceptance 33 leadership of the project team 10
managing cultural change 34 project team competence- composition 11 business
process reengineering 35 ERP team work 12 customization 36 steering committee 13
minimal customization 37 empowered decision makers 14 software configuration 38
use of consultants 15 data accuracy 39 obtain business analysts 16 data
analysis- conversion 40 project champion 17 software development testing &
troubleshooting 41 appropriate business-legacy systems 18 implementation
strategies 42 data integration 19 ERP package selection 43 scope & vision based
performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of
```

performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","","","x"
"Vision, Goals & Objectives","objectives","
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"","","","x"
"Vision, Goals & Objectives","vision","
`Important CSFs identified are: ERP team work and composition, top management support, business plan and vision, effective communication, project management, project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and evaluation of performance.'
","AliEtAl2017ERPSystemImplem",675,"","","","x"
"Vision, Goals & Objectives","vision","
`Lesser, but still important CSFs are, having a good business plan, vision, having a project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and the evaluation of performance (Markus, Axline, Petrie and Tanis, 2000; Bancroft et al., 1998; Bingi et al., 1999; Nah et al., 2001; Umble et al., 2003; Ehie and Madsen, 2005; Sarkar and Lee, 2003; Umble et al., 2003; Kim et al., 2005; Motwani et al., 2005; Nah and Delgado, 2006; Maguire et al., 2010).'
","AliEtAl2017ERPSystemImplem",682,"","","","x"
"Vision, Goals & Objectives","vision","
`Strategic: Top management support, business plan and vision have been frequently recognized as the most significant and critical success factors in ERP system execution projects (Somers and Nelson, 2001).'
","AnjumEtAl2015FactorManipuERP",629,"","","","x"
"Vision, Goals & Objectives","vision","
`Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.'
","FinneyEtAl2007ERPImplemCompil",340,"","","","x"
"Vision, Goals & Objectives","vision","
`Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) ● Communication within the company ● Organization resistance ● Project budget ● Project management ● Implementation strategy ● Strategic goals and objectives ●

```
Business process reengineering ● organizational culture ● knowledge base of the
company ● Project planning and control ● Facilitating conditions ● Organization
size ● The vision of the organization ● Readiness of organizations ● Clarity of
potential cost ● User involvement ● Selection of vendor/consult ant ● Project
team ● Top management support ● Training of user ● Trust on vendor ● Performance
expectancy ● Effort expectancy ● Social influence ● Age ● Gender ● Highest
degree attained ● Selection of ERP package ● IT infrastructure ● Data integrity
and system testing.'
","HuangEtAl2021CriticSuccesFactor",4686,"","","","x"
"Vision, Goals & Objectives","vision","
`According to the literature, the most studied factors were: Top Management
Support, Effective Communication, Training, and Education, Business plan and
vision, Project Management, BPR management, Change Management, Project team
Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation,
Technological Infrastructure, Legacy systems consideration.'
","MahrazEtAl2020CompilAnalysCritic",112,"","","","x"
"Vision, Goals & Objectives","vision","
`Organizations need to establish a long-term vision, while continually improving
the ERP implementation process.'
","MahrazEtAl2020CompilAnalysCritic",113,"","","","x"
"Vision, Goals & Objectives","vision","
`The findings of our study reveal that `appropriate business and IT legacy
systems', `business plan/vision/goals/justification', `business process
reengineering', `change management culture and programme', `communication', `ERP
teamwork and composition', `monitoring and evaluation of performance', `project
champion', `project management', `software/system development, testing and
troubleshooting', `top management support', `data management', `ERP strategy and
implementation methodology', `ERP vendor', `organizational characteristics',
`fit between ERP and business/process', `national culture' and `country-related
functional requirement' were the commonly extracted factors across these 10
countries/regions.'
","NgaiEtAl2008ExaminCriticSucces",548,"","","","x"
"Vision, Goals & Objectives","vision","
`Eleven critical factors were identified, such as ERP teamwork and composition,
change management program and culture, top management support, business plan and
vision, business process reengineering (BPR) and minimum customisation,
effective communications, project management, software development, testing and
troubleshooting, monitoring and evaluating performance, project champion, and
appropriate business and IT legacy systems.'
","Rabaai2009IdentiCriticSucces",6,"","","","x"
"Vision, Goals & Objectives","vision","
`The factors identified were management and leadership, visioning and planning,
ERP package selection, communication process management, training and education,
project management, legacy systems management, system integration, system
testing, cultural and structural changes, and performance evaluation and
management.'
","Rabaai2009IdentiCriticSucces",6,"","","","x"
"Vision, Goals & Objectives","vision","
`Based on the work by Markus and Tanis (2000), Nah and Delgado organised these
factors into seven main categories: (1) Business plan and vision; (2) Change
management; (3) Communication; (4) ERP team composition, skills, and
compensation; (5) Project management; (6) Top management support and
championship; and (7) System analysis, selection, and technical implementation.'
","Rabaai2009IdentiCriticSucces",6,"","","","x"
"Vision, Goals & Objectives","vision","
`Although the project communication planning was considered ineffective in both
sectors, majorities in both sectors saw ERP implementations as fitting the
organisation's vision and largely agreed the project goals and benefits were
```

clear.'
","RabaaiEtAl2015CulturPerspeon",97,"","","","x"
"Vision, Goals & Objectives","vision","
`Critical success factors identified in Turkish studies Author (s) Critical Success Factors Baskak& Cetisli (2003) Top management support, business plan and vision, ERP teamwork, ERP package selection, change management, user training and education, effective communication, project management, data integration, software testing and troubleshooting, appropriate legacy systems, monitoring and evaluation of performance.'
","SaygiliEtAl2017EndUsersPercep",62,"","","","x"
"Vision, Goals & Objectives","vision","
`Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring- evaluation of performance 21 IT infrastructure 45 post imple...'
","SaygiliEtAl2017EndUsersPercep",64,"","","","x"
"Vision, Goals & Objectives","vision","
`Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.'
","SaygiliEtAl2017EndUsersPercep",67,"","","","x"
"Vision, Goals & Objectives","vision","
`Setting vision and direction for the business, harnessing employees' energy and creativity and implementing modern concepts A detailed examination and definition of business needs, company capabilities, constraints and modules of the core system to support critical business practices and partners.'
","ShaulEtAl2013CriticSuccesFactor",24,"","","","x"

Appendix J

BibTool Configuration

The BibTool configuration.

Listing J.1: BibTool Configuration File `bibtool-config.rsc`

```
# Custom config (resource file) for BibTool.
#
# Usage (bash):
#   $ bibtool -r bibtool-config some.bib
#   $ bibtool -r bibtool-config some.bib -o new.bib
#   $ bibtool -r bibtool-config some.bib -o some.bib
#   $ bibtool -X "^key$" -r bibtool-config some.bib
#   $ bibtool -X "entryKeyRegex" -r bibtool-config some.bib
#   $ bibtool -X "entryKeyContainsThisValue" -r bibtool-config some.bib
#   $ bibtool -X "^entrykeyIsExactlyThisValue$" -r bibtool-config some.bib
#
# Worflow (VS Code + LaTeX Workshop by James-Yu + Smart-Title-Case by awtnb):
#   1) Open .bib file.
#   2) Type @... to create bib entry using snippet (or paste an entry).
#   3) Title Case and {ProtectWords}.
#   4) Save .bib file (entry key will be 'key').
#   5) In a terminal run:
#        $ bibtool -r bibtool-config some.bib -o some.bib
#   6) Enjoy:
#        auto generated key,
#        formatting, sorting, and standardisation, and
#        compare the diff using version control.
#   7) Rename the article pdf to use key.pdf.

# Start by including BibTool's default resource file.
resource default

# Include BibLaTeX resource file.
resource biblatex

# Keep only the BibLaTeX entry types and attributes listed, delete the rest.
resource keep_biblatex

# Replace "" with {}.
resource braces

# Configuration (resource commands) that vary from previously included
# resources.

#
# General
#
sort                     = on
sort.cased               = on
print.align              = 19
print.align.key          = 19 # Default: 18, alternate: 0.
print.use.tab            = off
suppress.initial.newline = on
pass.comments            = on
# Duplicate (double) entries.
```

```
# These don't work when key generation is turned on in the same run
# since keys are first disambiguated with key*1.
# Hint: key*1 shows duplicates directly in use, given a sufficiently complex
#       key.format.
check.double             = on
check.double.delete      = on
print.deleted.prefix     = "###"
print.deleted.entries    = on

#
# Field types and field rewrites.
#
symbol.type = cased # lower, upper, cased

keep.field {{
    ids
    options
    author
    title
    date
    urldate
    address
    sortname
    shortauthor
    shorttitle
    journal
    journaltitleaddon
    publisher
    SearchLogKey
    SearchLogOrder
    Relevance
    Field
    Quality
    ReadStatus
    URLSS
    DOISS
    NoteNoPrint
    CriticalSuccessFactors
}}

new.field.type { ids = IDs }
new.field.type { year = Date }
new.field.type { location = Address }
new.field.type { options = Options }
new.field.type { journal = Journal }
new.field.type { journaltitle = Journal }
new.field.type { journaltitleaddon = JournalTitleAddon }
new.field.type { SearchLogKey = SearchLogKey }
new.field.type { SearchLogOrder = SearchLogOrder }
new.field.type { Relevance = Relevance }
new.field.type { Field = Field }
new.field.type { Quality = Quality }
new.field.type { ReadStatus = ReadStatus }
```

```
new.field.type { urlss = URLSS }
new.field.type { doiss = DOISS }
new.field.type { NoteNoPrint = NoteNoPrint }
new.field.type { CriticalSuccessFactors = CriticalSuccessFactors }

# Field ordering within entries.
# * = all entry types.
# Fields not listed are placed after those listed, in the same order as found
# in the entry.
sort.order {* =
      ids
    # options
    # sortkey
    # sortname
    # shortauthor
    # author
    # editor
    # date
    # year
    # shorttitle
    # title
    # booktitle
    # shortjournal
    # journal
    # journaltitleaddon
    # publisher
    # location
    # address
    # edition
    # volume
    # number
    # pages
    # part
    # url
    # urlss
    # doiss
    # urldate
    # TitleAddOn
    # SearchLogKey
    # SearchLogOrder
    # Relevance
    # Field
    # Quality
    # ReadStatus
    # NoteNoPrint
    # CriticalSuccessFactors
}

#
# Keys
#
key.generation           = on
key.make.alias           = off
```

```
preserve.keys            = off
preserve.key.case        = on
default.key              = "key"
key.number.separator     = "*"
key.base                 = digit
fmt.name.name            = ""
fmt.inter.name           = ""
fmt.et.al                = "EtAl"
fmt.name.title           = "-"
ignored.word for
ignored.word to
ignored.word and
ignored.word of
ignored.word in
ignored.word as

# Generate a key from field values in the following order of preference:
# FirstAuthorYearThreeWordsOfTitle
# FirstEditorYearThreeWordsOfTitle
# ThreeWordsOfTitleYear
# Note: Year is taken from date field, then year field, then literal text 'Nd'.
# Note: Author/Editor/Title are sometimes automatically substituted by BibTool.
# Note: shortauthor, shorttitle etc provide additional override capability.
key.format =
{
    {
        { %1n(shortauthor)
        # %1n(author)
        # %1n(shorteditor)
        # %1n(editor)
        # %1n(translator)
        }
        { %d(date)
        # %d(year)
        # Nd
        }
        { %3.6W(shorttitle)
        # %3.6W(title)
        #
        }
    }
    #
    {
        { %3.6W(shorttitle)
        # %3.6W(title)
        }
        { %d(date)
        # %d(year)
        # Nd
        }
    }
}
```

Appendix K

Run Script

The runscript bash script and its output listing.

Listing K.1: Run Script `runscript.sh`

```
#!/bin/bash

# This purpose of this bash script (runscript.sh) is to document and enable
# running the necessary update and bibtool commands, from a single script.
#
# Setup (bash):
#   $ chmod +x runscript.sh
#
# Usage (bash):
#   Update command:
#     $ ./runscript.sh update > RunScriptReport.txt
#   Bibtool command:
#     $ ./runscript.sh bibtool Bibliography.bib
#     $ ./runscript.sh bibtool Mahmood2020ConnectedPapersGraph.bib
#   Content analysis command:
#     $ ./runscript.sh contentanalysis

# Run Update Function
# This function runs all of the update scripts.
runUpdate(){
    # Start of run.
    echo "# Start of Update Run"
    echo "# Date: " `date`

    # Run search log script.
    echo ""
    echo "Run:"
    echo "./bibhelper.py -s SearchLog.bib"
    ./bibhelper.py -s SearchLog.bib

    # Run bibliography script.
    echo ""
    echo "Run:"
    echo "./bibhelper.py Bibliography.bib"
    ./bibhelper.py Bibliography.bib

    # Run bibliography script.
    echo ""
    echo "Run:"
    echo "./bibhelper.py Mahmood2020ConnectedPapersGraph.bib"
    ./bibhelper.py Mahmood2020ConnectedPapersGraph.bib

    # End of run.
    echo ""
    echo "# End of Run"
}

# Run Bibtool Function
# This function runs bibtool to generate entry keys and format .bib files.
runBibtool(){
```

```
    local fileName="$1"
    bibtool -r bibtool-config.rsc "$fileName" -o "$fileName"
}

# Run Content Analysis Function
# This function performs the content analysis.
runContentAnalysis(){

    # Set variables.
    local BIB="Mahmood2020ConnectedPapersGraph.bib"
    local LIB_PATH="../../beng-dissertation-gavin-kromhout-library/"
    LIB_PATH+="Mahmood2020ConnectedPapersGraph/"
    local WORK="ContentAnalysis.csv"
    local TRANSLATION_RULES="TranslationRules.csv"
    local REPORT="ContentAnalysisReport.txt"

    # Run python script.
    ./contentanalysis.py $BIB $LIB_PATH $WORK $TRANSLATION_RULES > $REPORT
}

# Run the Requested Command
# The command to run is specified by positional argument $1.
case "$1" in

    # Update command.
    update)
        # Run the update function.
        runUpdate
        ;;

    # Bibtool command.
    bibtool)
        # Run the bibtool function, passing the file name specified by arg $2.
        runBibtool "$2"
        ;;

    # Content analysis command.
    contentanalysis)
        # Run the content analysis function.
        runContentAnalysis
        ;;

    # Default.
    *)
        # Print the usage statement, and exit.
        helpMsg="Usage: $0 {"
        helpMsg+="update > RunScriptReport.txt"
        helpMsg+="|bibtool file.bib"
        helpMsg+="|contentanalysis"
        helpMsg+="}"
        echo $helpMsg
        exit 1
```

```
esac
```

Listing K.2: Output File RunScriptReport.txt

```
# Start of Update Run
# Date:  Sun 03 Nov 2024 23:03:19 AEST

Run:
./bibhelper.py -s SearchLog.bib
Starting...
File found: SearchLog.bib, encoding = 'UTF-8'
Writing report to file: SearchLogReport.txt
Writing table rows to file: SearchLogTableRows.tex

Run:
./bibhelper.py Bibliography.bib
Starting...
File found: Bibliography.bib, encoding = 'UTF-8'
Writing report to file: BibliographyReport.txt
Writing table rows to file: BibliographyInclJPTableRows.tex
Writing table rows to file: BibliographyInclTableRows.tex
Writing table rows to file: BibliographyExclTableRows.tex

Run:
./bibhelper.py Mahmood2020ConnectedPapersGraph.bib
Starting...
File found: Mahmood2020ConnectedPapersGraph.bib, encoding = 'UTF-8'
Writing report to file: Mahmood2020ConnectedPapersGraphReport.txt
Writing table rows to file: Mahmood2020ConnectedPapersGraphInclJPTableRows.tex
Writing table rows to file: Mahmood2020ConnectedPapersGraphInclTableRows.tex
Writing table rows to file: Mahmood2020ConnectedPapersGraphExclTableRows.tex

# End of Run
```

Appendix L

Information Product CSF Review

The Information Product Critical Success Factor (CSF) Review, Table L.1, is made available as a detailed review for researchers and practitioners. This review forms part 3 of the Conceptual Framework outlined in section 4.1. The table shows the data reviewed from the selected data papers by literature review and content analysis. This review makes no claim of being complete, and makes no claim of suitability for any other use than its stated purpose to provide an informative review.

In Table L.1, the Critical Success Factors identified as relevant to information product delivery are listed, and allocated to the Functions where it is considered that they may be measured and managed. The table is sorted alphabetically by Critical Success Factor, and then Term. The Term is matched within the Sentence to yield relevant sentences.

Direction of effect for factors is by default positive, that is having or doing should be expected to have a positive effect on success, while a (-) symbol indicates that having or doing should be expected to have a negative effect on success. The factors listed have been reported by extant literature to be failure factors. That is, there exists a minimum level of performance to avoid mission failure, and an optimum level of performance that achieves maximum value, as discussed in Critical Success Factors as a Management Paradigm in section 2.1. Furthermore, the table is made available in appendix I as both LaTeX .tex, and .csv format files that may be viewed through a spreadsheet program as an alternative to viewing as a PDF, see listing I.13.

Table L.1: Information Product CSF Review

Critical Success Factor	Term	Sentence	Function
Business Analysis Skills & Competencies	business analyst	'CSFs for successful ERP implementation are identified as top management support, presence of a champion, good communication with stakeholders, effective project planning, business process re-engineering (BPR), and using a business analyst on the project team (Bancroft et al., 1998; Bingi et al., 1999).' (Ali & Miller 2017, p. 674)	Production
Business Analysis Skills & Competencies	business analyst	'Successful ERP implementation requires the coordination of many activities and a close cooperation between managers, employees, IT specialists, business analysts and consultants [39].' (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1255)	Production
Business Analysis Skills & Competencies	business analyst	'The critical success factors consistently identified in the literature include top management support, the presence of a champion, good communication with all stakeholders, effective project management, reengineering of business processes, an understanding of corporate cultural change, and the use of business analysts on the project team.' (Rabaa'i & AlJamal 2015, p. 88)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Analysis Skills & Competencies	business analyst	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	BPR	'CSFs for successful ERP implementation are identified as top management support, presence of a champion, good communication with stakeholders, effective project planning, business process re-engineering (BPR), and using a business analyst on the project team (Bancroft et al., 1998; Bingi et al., 1999).' (Ali & Miller 2017, p. 674)	Collection, Use
Business Process Reengineering	BPR	'They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.' (Ali & Miller 2017, p. 674)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	BPR	'Important CSFs identified are: ERP team work and composition, top management support, business plan and vision, effective communication, project management, project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and evaluation of performance.' (Ali & Miller 2017, p. 675)	Collection, Use
Business Process Reengineering	BPR	'They observe that vendor failure to adapt to local culture, BPR, managing local human resources, lack of information sharing, failure to understand cultural characteristics, lack of adaptability towards a changing business and economic environment, lack of cost control functions (i.e. adapting to changing costs), and failure to understand technical issues are the main causes of ERP implementation failure.' (Ali & Miller 2017, p. 681)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	BPR	'Lesser, but still important CSFs are, having a good business plan, vision, having a project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and the evaluation of performance (Markus, Axline, Petrie and Tanis, 2000; Bancroft et al., 1998; Bingi et al., 1999; Nah et al., 2001; Umble et al., 2003; Ehie and Madsen, 2005; Sarkar and Lee, 2003; Umble et al., 2003; Kim et al., 2005; Motwani et al., 2005; Nah and Delgado, 2006; Maguire et al., 2010).' (Ali & Miller 2017, p. 682)	Collection, Use
Business Process Reengineering	BPR	'In this work, authors mentioned that lack of education, BPR, project management, top management support and unrealistic expectations of users could lead companies to fail.' (Amid, Moalagh & Ravasan 2012, p. 229)	Collection, Use
Business Process Reengineering	BPR	'BPR can be defined as the primary rethinking and essential redesign of business procedures to attain remarkable enhancement in significant, existing procedures of performances, like quality, speed approaches, cost and service (Hammer and Champy, 1993; Koch, 2001; Huang et al., 2004).' (Anjum & Khan 2015, p. 629)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	BPR	'Necessary Business Process Reengineering (BPR) activities in the organization, customizations on the ERP software and training of users about the new system should be managed and coordinated by the project management of the ERP project to remove the incompatibilities between technology, organization and people.' (Basoglu, Daim & Kerimoglu 2007, p. 75)	Collection, Use
Business Process Reengineering	BPR	'Within that subject, Van der Aalst and Weijters (2005) introduced processing mining as a preliminary step of ERP implementation, while Chiplunkar, Deshmukh, and Chattopadhyay (2003) suggested the capture of complete business environment in a BPR project with the help of information technology.' (Basoglu, Daim & Kerimoglu 2007, p. 78)	Collection, Use
Business Process Reengineering	BPR	'This problem can only be solved by adapting the organization to the package through extensive BPR (Kremers & Van Dissel, 2000; Somers & Nelson, 2003).' (Basoglu, Daim & Kerimoglu 2007, p. 81)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	BPR	'BPR was described as "the fundamental rethinking and radical design of business processes to achieve dramatic improvement in critical, contemporary measures of performance such as cost, quality, service and speed" by Hammer and Champy (1993).' (Basoglu, Daim & Kerimoglu 2007, p. 81)	Collection, Use
Business Process Reengineering	BPR	'As well as improving the efficiency of an individual company success, BPR can be envisaged as a hierarchy of business reconfiguration, from local exploitation through internal integration and business process redesign to business network redesign and ultimately business scope redefinition (Venkatraman, 1991).' (Basoglu, Daim & Kerimoglu 2007, p. 81)	Collection, Use
Business Process Reengineering	BPR	'However, achieving BPR is as hard as implementing an ERP system, but it is a must to obtain optimization of ERP systems.' (Basoglu, Daim & Kerimoglu 2007, p. 81)	Collection, Use
Business Process Reengineering	BPR	'As well as BPR, customization is also a crucial, lengthy, and costly aspect in the compatibility of ERP system and the organizational processes (Yusuf et al., 2004).' (Basoglu, Daim & Kerimoglu 2007, p. 81)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	BPR	'BPR activities and training are also critical factors in ERP implementation that have effects on organizational adoption (Somers & Nelson, 2003).' (Basoglu, Daim & Kerimoglu 2007, p. 82)	Collection, Use
Business Process Reengineering	BPR	'BPR is a must for ERP projects.' (Basoglu, Daim & Kerimoglu 2007, p. 82)	Collection, Use
Business Process Reengineering	BPR	'They suggested that innovative characteristics of an organization like BPR, technical compatibility and perceived complexity; organizational characteristics like top management support, organizational objective consensus and training; and finally environmental characteristics like competitive pressure have a direct effect on ERP implementation success and end user satisfaction (see Fig. 6).' (Basoglu, Daim & Kerimoglu 2007, p. 83)	Collection, Use
Business Process Reengineering	BPR	'For that purpose, adequate customization and necessary BPR, in which business processes are designed within the framework of the target ERP system, has to be performed (Lee & Myers, 2004; Soffer, Golany, & Dori, 2005) (see Fig. 15).' (Basoglu, Daim & Kerimoglu 2007, p. 88)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	BPR	'If the project is managed by performing BPR and customization activities adequately, moving from P1 to P2 is not hard.' (Basoglu, Daim & Kerimoglu 2007, p. 88)	Collection, Use
Business Process Reengineering	BPR	'Work practices, poor data quality, BPR activities, customization of the ERP system, internal staff adequacy, training, top management support, quality of consultants are the main problems (Genoulaz & Millet, 2006).' (Basoglu, Daim & Kerimoglu 2007, p. 89)	Collection, Use
Business Process Reengineering	BPR	'Additionally, critical success factors of ERP projects like customization, BPR, top management support, training and communication were grouped under these three actors and also project management for testing their effect on organizational adoption, too.' (Basoglu, Daim & Kerimoglu 2007, p. 89)	Collection, Use
Business Process Reengineering	BPR	'As well as customization of the ERP system, BPR is very crucial on the adoption of the ERP projects (Kremers & Van Dissel, 2000; Somers & Nelson, 2003).' (Basoglu, Daim & Kerimoglu 2007, p. 91)	Collection, Use
Business Process Reengineering	BPR	'Business process reengineering (BPR) has been, often, proposed as a critical success factor for ERP implementation [29].' (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1255)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	BPR	'Typically, BPR is carried out in order to restructure non-value-adding operations, reduce the complexity of business processes and eliminate inefficient processes [43].' (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1255)	Collection, Use
Business Process Reengineering	BPR	'Studies in the last 5 years show that organizations that do not adapt to best practices and care about BPR are more likely to face failure.' (Coşkun et al. 2022, p. 14)	Collection, Use
Business Process Reengineering	BPR	'The need to conduct BPR and software configuration was the third most commonly cited CSF.' (Finney & Corbett 2007, p. 337)	Collection, Use
Business Process Reengineering	BPR	'Table III reveals that the five most widely cited categories, top management commitment and support, change management, BPR and software configuration, training and job redesign, and project team: the best and brightest, are significantly more often researched than the others.' (Finney & Corbett 2007, p. 339)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	BPR	'Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.' (Finney & Corbett 2007, p. 340)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	BPR	'These factors include, but not limited to, poor consultant effectiveness, ERP software misfit, unrealistic expectations from top management concerning the ERP systems, over-reliance on heavy customization, poor quality of Business Process Reengineering (BPR), high turnover rate of project team members, poor IT Infrastructure, functionality problems with the system, unclear concept of the nature and use of the ERP system from the users perspective, too tight project schedule, lack of formal communication, part-time dedication, etc.' (Garg, P & Garg, A 2013, p. 498)	Collection, Use
Business Process Reengineering	BPR	'Consultants who are not able to demonstrate a mastery of professional communication skills, good language capability, industrial knowledge, and business analytical skills, are not able to provide expertise concerning project planning, ERP systems and BPR during ERP implementation and hence cannot act as change agents and fill the knowledge gaps (Ngai et al., 2008; Stebel, 1992; Ganesh and Mehta, 2010; Nah and Lau, 2001) (for example, communicating with project team members and users for acquiring business requirements, conducting BPR and delivering professional training).' (Garg, P & Garg, A 2013, p. 499)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	BPR	'If the team is not the cross-functional team consisting of people who are familiar with both business functions, technology and products (Buckhout et al., 1999; Bingi et al., 1999; Rosario, 2000), the team will not be able to collaborate and contribute to BPR.' (Garg, P & Garg, A 2013, p. 499)	Collection, Use
Business Process Reengineering	BPR	'The poor quality of BPR led to incorrect system configuration problems and hence failed implementation.' (Garg, P & Garg, A 2013, p. 499)	Collection, Use
Business Process Reengineering	BPR	'Poor consultant effectiveness and poor PM effectiveness can lead to a low quality of BPR and the business processes may match poorly with the ERP systems, resulting in implementation failure.' (Garg, P & Agarwal 2014, p. 405)	Collection, Use
Business Process Reengineering	BPR	'3.3 BPR BPR is defined by Hammer and Champy (1993) as "the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance such as cost, quality, service and speed." BPR analyzes the process of an organization's business in order to identify the best way of doing things.' (Garg, P & Agarwal 2014, p. 408)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	BPR	'BPR came earlier than the popularization of ERP.' (Garg, P & Agarwal 2014, p. 408)	Collection, Use
Business Process Reengineering	BPR	'It is ERP that rescues the idea of BPR and forces the company to redefine and redesign work flows to fit the new software: H3.' (Garg, P & Agarwal 2014, p. 408)	Collection, Use
Business Process Reengineering	BPR	'BPR is positively related with ERP implementation success.' (Garg, P & Agarwal 2014, p. 408)	Collection, Use
Business Process Reengineering	BPR	'In addition, BPR, UI was positively related to success of ERP implementation at 0.01 significance level (r = 0.763).' (Garg, P & Agarwal 2014, p. 411)	Collection, Use
Business Process Reengineering	BPR	'The results of this research support the suggested hypothesis (H3) that there is positive relationship between BPR and success of ERP implementation at Fortis hospital (t-value = 2.821, p-value = 0.043).' (Garg, P & Agarwal 2014, p. 414)	Collection, Use
Business Process Reengineering	BPR	'So it can be concluded that BPR is important vehicle for success of ERP implementation as it help in re- aligning strategy, operations and systems to deliver significantly increased financial results and customer satisfaction.' (Garg, P & Agarwal 2014, p. 414)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	BPR	'Managers have to decide if they do BPR before, during or after ERP implementation.' (Garg, P & Agarwal 2014, p. 416)	Collection, Use
Business Process Reengineering	BPR	'(3) Hospitals normally adopt BPR to pursue multiple improvement goals including quality, cost, flexibility, speed and accuracy.' (Garg, P & Agarwal 2014, p. 418)	Collection, Use
Business Process Reengineering	BPR	'BPR supports the re-thinking of business processes and is necessary to software applications such as ERP systems.' (Garg, P & Agarwal 2014, p. 418)	Collection, Use
Business Process Reengineering	BPR	'Hospitals should adopt BPR to adapt to ERP system, and should not modify the package to adapt to business process to incorporate the best practices worldwide.' (Garg, P & Agarwal 2014, p. 418)	Collection, Use
Business Process Reengineering	BPR	'BPR can be defined as the fundamental rethinking and radical redesign of business process to achieve dramatic improvement in critical, contemporary measures of performance, such as cost, quality, service and speed approaches (Koch, 2001; Huang et al., 2004).' (Garg, P & Garg, A 2014, p. 431)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	BPR	'The executives of the Chinese organizations have a tendency to rely on their intuition, experience, skills and insights from personal relationships to evaluate and assess situations and make decisions accordingly (Martisons & Westwood, 1997) and that is why it may be a reason of considering BPR as a least critical success factor.' (Khattak et al. 2013, p. 66)	Collection, Use
Business Process Reengineering	BPR	'On the other hand the Pakistani companies' executives might readily believe that they should change their existing ways of doing business because of the ERP systems is already in place and therefore, might have understood that the ERP project requires BPR and that is why they treat it as a CSF.' (Khattak et al. 2013, p. 66)	Collection, Use
Business Process Reengineering	BPR	'According to the literature, the most studied factors were: Top Management Support, Effective Communication, Training, and Education, Business plan and vision, Project Management, BPR management, Change Management, Project team Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation, Technological Infrastructure, Legacy systems consideration.' (Mahraz, Benabbou & Berrado 2020, p. 112)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	BPR	'These three factors could be considered one from the top 3, the other elements as IT infrastructure, BPR management, and Project management are less critical from the participants.' (Mahraz, Benabbou & Berrado 2020, p. 119)	Collection, Use
Business Process Reengineering	BPR	'BPR management: Business process re- engineering is one of the crucial steps in ERP implementation.' (Mahraz, Benabbou & Berrado 2020, p. 122)	Collection, Use
Business Process Reengineering	BPR	'3.3. Business process reengineering A certain level of BPR should be involved for the implementation of ERP, as the packaged software may be incompatible with the needs and business processes of the organization [10,51,69].' (Ngai, Law & Wat 2008, p. 551)	Collection, Use
Business Process Reengineering	BPR	'Other problems reported are lack of BPR [87], poor communications, lack of support from management, limited level of user involvement, poor training from vendors [90], and weakness in existing IT infrastructure [41].' (Ngai, Law & Wat 2008, p. 559)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	BPR	'This recognition leads us to emphasize that it is of paramount importance for academic researchers and those involved in ERP implementation to thoroughly understand the business practice and knowledge of the ERP adopting firms, which are necessary for excellent performance in CSFs such as BPR, and ERP fit.' (Ngai, Law & Wat 2008, p. 561)	Collection, Use
Business Process Reengineering	BPR	'the most important outcome of BPR has been viewing business activities as more than a collection of individual or even functional tasks; it has engendered the process-oriented view of business.' (Osman & Sahraoui 2019, p. 38)	Collection, Use
Business Process Reengineering	BPR	'To be clear, the company's business strategy indicates what it wants to do, BPR indicates how to do it and the ERP system answers the question with what.' (Osman & Sahraoui 2019, p. 38)	Collection, Use
Business Process Reengineering	BPR	'In literature, BPR and minimal customization is the third most commonly cited CSF.' (Osman & Sahraoui 2019, p. 38)	Collection, Use
Business Process Reengineering	BPR	'Once the ERP system is in use, BPR should be continued with new ideas and updates to get full benefits of the system.' (Osman & Sahraoui 2019, p. 38)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	BPR	'This is because the business process reengineering (BPR) and the customisation of the software to fit the business needs can become serious and costly problems allied with the implementation, as there might be a difference between the functionality offered by the software and that required by the organisation.' (Rabaa'i 2009, p. 3)	Collection, Use
Business Process Reengineering	BPR	'Eleven critical factors were identified, such as ERP teamwork and composition, change management program and culture, top management support, business plan and vision, business process reengineering (BPR) and minimum customisation, effective communications, project management, software development, testing and troubleshooting, monitoring and evaluating performance, project champion, and appropriate business and IT legacy systems.' (Rabaa'i 2009, p. 6)	Collection, Use
Business Process Reengineering	BPR	'Across various developing countries, Huang and Palvia (2001) identified many factors of national and organisational culture affecting ERP implementation including economic status and growth, infrastructure, government regulation, low IT maturity, small firm size, and lack of process management and BPR experience.' (Rabaa'i & AlJamal 2015, p. 88)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	BPR	'Communication for some projects must go beyond a (monthly) update as transparency is required for academic stakeholders who may not appreciate what a project involves in terms of BPR.' (Rabaa'i & Gammack 2016, p. 56)	Collection, Use
Business Process Reengineering	BPR	'This illustrates the relationship between BPR and customisation to unique processes in the higher education sector, which is possibly the most critical of the CSFs for the sector, assuming the others are professionally managed.' (Rabaa'i & Gammack 2016, p. 57)	Collection, Use
Business Process Reengineering	BPR	'One of the first articles that has been published about analyzing ERP failures returned to Umble and Umble (2002) in which they mentioned that lack of education, BPR, project management, top management support and unrealistic expectations of users could lead companies to fail.' (Ravasan & Mansouri 2014, p. 35)	Collection, Use
Business Process Reengineering	business process re-engineering	'The same applies to the factor business process re-engineering and customization, which is a key factor in ERP implementation projects.' (Barth & Koch 2019, p. 668)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	business process re-engineering	'To use potentials of an ERP system is a major part of business process re- engineering, which is in itself a critical success factor within ERP implementation projects.' (Barth & Koch 2019, p. 668)	Collection, Use
Business Process Reengineering	business process re-engineering	'This belief may adversely affect the attitude towards information sharing, and business process re-engineering.' (Ngai, Law & Wat 2008, p. 559)	Collection, Use
Business Process Reengineering	business process re-engineering	'4.4 Business Process Re-engineering and System's Customisation Shehab et al., (2004) stated that there are two different strategic approaches to implementing an ERP system.' (Rabaa'i 2009, p. 8)	Collection, Use
Business Process Reengineering	business process re-engineering	'They are the few key areas where things must go right. . . " An earlier paper by this team (Ram, Corkindale and Wu, 2013) tabulated the relationships found in the literature between CSFs and implementation or performance output success to identify four factors consistently emerging as central, namely project management, training and education, business process re-engineering and system integration.' (Rabaa'i & AlJamal 2015, p. 87)	Collection, Use
Business Process Reengineering	business process re-engineering	'Restructure business processes aligned with the ERP system (business process re- engineering).' (Saygili, Ozturkoglu & Kocakulah 2017, p. 74)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	business process re-engineering	'• IT infrastructure • System Training and knowledge transfer • Over-dependence on detailed and heavy customization • High turnover rate of project team members • Business process re-engineering • User's resistance to transform • ERP system misfit Considering these critical factors, specifically affecting the agricultural business sectors in Malaysia, there are a few possible suggestions proposed.' (Shukor, Sheikhi & Nashir 2020, p. 2055)	Collection, Use
Business Process Reengineering	business process reengineering	'Lack of proper integration and knowledge of business process reengineering are other problems of local solutions.' (Amid, Moalagh & Ravasan 2012, p. 229)	Collection, Use
Business Process Reengineering	business process reengineering	'The results of this study show that "Managers and employees readiness to change", "Top management Support", "Business Process Reengineering", "Software and user interface development" and "Change management" are five top critical success factors.' (Chan 2013, p. 109)	Collection, Use
Business Process Reengineering	business process reengineering	'During ERP implementation, business process reengineering should take place, in order to take full advantage of the new system [14] [34].' (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1254)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	business process reengineering	'In this study, the dimension of "internal environment" includes four factors (top management support, business process reengineering, organizational culture, change management).' (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1255)	Collection, Use
Business Process Reengineering	business process reengineering	'This includes the amount of the systems implemented, involvement of business units, and amount of business process reengineering needed.' (Garg, P & Garg, A 2013, p. 509)	Collection, Use
Business Process Reengineering	business process reengineering	'(1) The "Organizational" factor in this study is defined by business plan and vision, top management support, business process reengineering, ERP product selection, selection of implementation partner/consultants and enterprise wide communication plan items which may affect the success of ERP implementation in Indian retail sector.' (Garg, P & Chauhan 2015, p. 1327)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	business process reengineering	'Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) • Communication within the company • Organization resistance • Project budget • Project management • Implementation strategy • Strategic goals and objectives • Business process reengineering • organizational culture • knowledge base of the company • Project planning and control • Facilitating conditions • Organization size • The vision of the organization • Readiness of organizations • Clarity of potential cost • User involvement • Selection of vendor/consult ant • Project team • Top management support • Training of user • Trust on vendor • Performance expectancy • Effort expectancy • Social influence • Age • Gender • Highest degree attained • Selection of ERP package • IT infrastructure • Data integrity and system testing.' (Huang et al. 2021, p. 4686)	Collection, Use
Business Process Reengineering	business process reengineering	'Implementation strategy Strategic goals and objectives User involvement Business process reengineering Selection of vendor/consultant IT infrastructure.' (Huang et al. 2021, p. 4688)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	business process reengineering	'The findings of our study reveal that 'appropriate business and IT legacy systems', 'business plan/vision/goals/justification', 'business process reengineering', 'change management culture and programme', 'communication', 'ERP teamwork and composition', 'monitoring and evaluation of performance', 'project champion', 'project management', 'software/system development, testing and troubleshooting', 'top management support', 'data management', 'ERP strategy and implementation methodology', 'ERP vendor', 'organizational characteristics', 'fit between ERP and business/process', 'national culture' and 'country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.' (Ngai, Law & Wat 2008, p. 548)	Collection, Use
Business Process Reengineering	business process reengineering	'For instance, Al-Mashari and Al-Mudimigh (2003) argued that the importance of an effective communication plan relies on the fact that it could build the ability of the entire organisation in business process reengineering, and gain all stakeholders' support and commitment.' (Rabaa'i 2009, p. 10)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	business process reengineering	'ERP failure factors and categories Failure Categories Failure Factors C4: Project Management F1: Conflicts between organization and consultants/ vendor C5: Technical F2: High rate of system customization C5: Technical F3: Data management issues C2: Human Resources F4: Inadequate education and training C2: Human Resources F5: Inadequate user involvement C2: Human Resources F6: Ineffective communications system C3: Organizational F7: Internal conflicts between departments C2: Human Resources F8: Inadequate change management C3: Organizational F9: Lack of performance measurement system C3: Organizational F10: Misfit between organization culture and ERP system C3: Organizational F11: Misfit between organization structure and ERP system C3: Organizational F12: Misfits between the IT and business strategies C1: Environmental F13: Environmental pressures C3: Organizational F14: Poor business process reengineering C1: Environmental F15: Poor consultant C4: Project Management F16: Poor project management C4: Project Management F17: Poor risk management C3: Organizational F18: Poor top management support C5: Technical F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...' (Ravasan & Mansouri 2014, p. 42)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	business process reengineering	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Business Process Reengineering	business process reengineering	'The sub- factors represent the fundamental management functions introduced by Draft (1991) planning (implementation strategies, project management), organizing (business process reengineering, management of expectations, project team competence and composition) and leading (leadership of project team, employee / team morale and motivation).' (Saygili, Ozturkoglu & Kocakulah 2017, p. 68)	Collection, Use
Champion	champion	'CSFs for successful ERP implementation are identified as top management support, presence of a champion, good communication with stakeholders, effective project planning, business process re-engineering (BPR), and using a business analyst on the project team (Bancroft et al., 1998; Bingi et al., 1999).' (Ali & Miller 2017, p. 674)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Champion	champion	'They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.' (Ali & Miller 2017, p. 674)	Management
Champion	champion	'Important CSFs identified are: ERP team work and composition, top management support, business plan and vision, effective communication, project management, project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and evaluation of performance.' (Ali & Miller 2017, p. 675)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Champion	champion	'Lesser, but still important CSFs are, having a good business plan, vision, having a project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and the evaluation of performance (Markus, Axline, Petrie and Tanis, 2000; Bancroft et al., 1998; Bingi et al., 1999; Nah et al., 2001; Umble et al., 2003; Ehie and Madsen, 2005; Sarkar and Lee, 2003; Umble et al., 2003; Kim et al., 2005; Motwani et al., 2005; Nah and Delgado, 2006; Maguire et al., 2010).' (Ali & Miller 2017, p. 682)	Management
Champion	champion	'Additional critical success factors are the selection of a project champion, who has the power and reputation to promote the importance of the project (Sumner, 2000), and cultural change management, also because major ERP vendors are located in North America and Western Europe, and thus functionalities and processes embody a western-centered perspective.' (Barth & Koch 2019, p. 658)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Champion	champion	'Further success factors for ERP implementation projects, such as the selection of a project champion, the building of a business case or the appropriate management of legacy systems were rated as not very significant for upgrade projects by the interviewees.' (Barth & Koch 2019, p. 668)	Management
Champion	champion	'Zhang et al. (2005) described five major parts of project management as having a formal implementation plan, a realistic time frame, periodic project status meetings, an effective project leader who is also a champion and project team members who are stakeholders.' (Basoglu, Daim & Kerimoglu 2007, p. 91)	Management
Champion	champion	'This introduces the importance of support mechanisms that include not only technical solutions such as superior hardware and software operational features, but also software support that is championed by supervisors who behave as role models.' (Chan 2013, p. 104)	Management
Champion	champion	'Loh and Koh [35] presented a framework of critical success factors in small and medium sized enterprises (SMEs), concluding that the most important factors are: project champion, project management, business plan and vision, and top management support [35].' (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1254)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Champion	champion	'This CSF is related to the need for the project manager/champion to nurture and maintain a high level of employee morale and motivation during the project (Trimmer et al., 2002; Willcocks and Stykes, 2000; Bingi et al., 1999).' (Finney & Corbett 2007, p. 337)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Champion	champion	'Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.' (Finney & Corbett 2007, p. 340)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Champion	champion	'Among the more important factors are top management support and involvement (Duchessi et al., 1989) the need for a project champion (Ehie and Madsen, 2005), user training (Stefanou and Revanoglou, 2006), technological competence, process delineation, project planning, change management and PM (Krumbholz and Maiden, 2001).' (Garg, P & Agarwal 2014, p. 404)	Management
Champion	champion	'The most important factors are top management support and involvement, the need for project champion user training, technological competence, process delineation, project planning, change management and PM (Umble et al., 2003).' (Garg, P & Agarwal 2014, p. 404)	Management
Champion	champion	'Project champion is one of the most important success factors in the implementation of ERP systems.' (Garg, P & Agarwal 2014, p. 405)	Management
Champion	champion	'Project champions should own the role of change champion for the life of the project and understand the technology as well as the business and organizational context (Remus, 2006).' (Garg, P & Agarwal 2014, p. 405)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Champion	champion	'F4 Presence/Existence of a Champion Somers & Nelson, 2001; Willcocks & Sykes,2000; Browen et al.,2007; Parr & Shanks.,2000; Upadhyay & Dan,2008; Nah et al.,2001; Nah et al.,2003; Ngai et al.,2008; Sumner,1999; Yeoh et al.,2008; Lai,2006; Dawson & Owens, 2008.' (Khattak et al. 2013, p. 47)	Management
Champion	champion	'P4: It states that presence or existence of a champion in implementation of an ERP project leads to successful implementation of ERP project which is partially supported because in only four of the enterprises (i.e. Cases 2, 3, 4 & 12) studied in the current research, a champion was emerged and/or existed in a significant role while in rest of the cases there wasn't any champion and despite that the implementation went successful.' (Khattak et al. 2013, p. 59)	Management
Champion	champion	'The unsuccessful cases also had no presence of any champion at all.' (Khattak et al. 2013, p. 59)	Management
Champion	champion	'Therefore, this infers that the presence of a champion in a significant role may be useful for providing guidance & motivation on the project but it cannot essentially guarantee the ERP project implementation success.' (Khattak et al. 2013, p. 59)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Champion	champion	'We suggested that in Chinese context presence of such a champion would be seen as a challenge to the authority and position of the top management, but in Pakistani context, the champion is often a subordinate.' (Khattak et al. 2013, p. 66)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Champion	champion	'The research concludes that: (1) Quality (adequacy) and quantity of training and education of personnel/users, role and effectiveness of management in reducing the users' resistance, use of steering committee for control purpose, top management support or involvement, clearly specified goals/objectives/scope regarding ERP system, ease of system's use and users' acceptance, vendor's support, project management, effective communication among the organizational members and a balanced team for ERP implementation are practically considered by the successful enterprises in China while planning and going for the implementation of the ERP system and are thus critical for the success of ERP systems implementation projects, ignoring of which may cause implementation failure in the Chinese organizations; (2) Some of the factors deemed imperative for ERP systems implementation success in the literature like; selection of a right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role of consultant, change management strategy and programs, competency in use of IT and IT infrastructure, business...' (Khattak et al. 2013, p. 68)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Champion	champion	'According to the literature, the most studied factors were: Top Management Support, Effective Communication, Training, and Education, Business plan and vision, Project Management, BPR management, Change Management, Project team Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation, Technological Infrastructure, Legacy systems consideration.' (Mahraz, Benabbou & Berrado 2020, p. 112)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Champion	champion	'The findings of our study reveal that 'appropriate business and IT legacy systems', 'business plan/vision/goals/justification', 'business process reengineering', 'change management culture and programme', 'communication', 'ERP teamwork and composition', 'monitoring and evaluation of performance', 'project champion', 'project management', 'software/system development, testing and troubleshooting', 'top management support', 'data management', 'ERP strategy and implementation methodology', 'ERP vendor', 'organizational characteristics', 'fit between ERP and business/process', 'national culture' and 'country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.' (Ngai, Law & Wat 2008, p. 548)	Management
Champion	champion	'They showed that top management support, project champion, ERP teamwork and composition, project management, change management programme and culture were the most critical to the successful implementation of EPR.' (Ngai, Law & Wat 2008, p. 549)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Champion	champion	'Project champion The presence of a project champion has facilitated many successful projects [54].' (Ngai, Law & Wat 2008, p. 555)	Management
Champion	champion	'Project champions are not only important for the implementation of many systems such as IS, but also play a critical role in the implementation of ERP and in handling organizational change.' (Ngai, Law & Wat 2008, p. 555)	Management
Champion	champion	'The project champion should be a high-level executive sponsor who has the power to 'champion' the ERP project throughout the organization [73].' (Ngai, Law & Wat 2008, p. 555)	Management
Champion	champion	'Project team: consultant, leadership and champion The ERP team should consist of the best people in the organization.' (Osman & Sahraoui 2019, p. 37)	Management
Champion	champion	'The factors were top management support, external expertise, balanced project team, data accuracy, clear goals, project management, change management, education and training, presence of a champion, minimal customisation, and using the best people full-time.' (Rabaa'i 2009, p. 6)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Champion	champion	'Eleven critical factors were identified, such as ERP teamwork and composition, change management program and culture, top management support, business plan and vision, business process reengineering (BPR) and minimum customisation, effective communications, project management, software development, testing and troubleshooting, monitoring and evaluating performance, project champion, and appropriate business and IT legacy systems.' (Rabaa'i 2009, p. 6)	Management
Champion	champion	'The top five were top management support, project team competence, project champion, inter-departmental cooperation, and clear goals and expectations.' (Rabaa'i 2009, p. 6)	Management
Champion	champion	'Based on the work by Markus and Tanis (2000), Nah and Delgado organised these factors into seven main categories: (1) Business plan and vision; (2) Change management; (3) Communication; (4) ERP team composition, skills, and compensation; (5) Project management; (6) Top management support and championship; and (7) System analysis, selection, and technical implementation.' (Rabaa'i 2009, p. 6)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Champion	champion	'QUT believes this approach to engaging consultants allows QUT to maintain control, ownership, and championship of the project.' (Rabaa'i, Bandara & Gable 2009, p. 465)	Management
Champion	champion	'The critical success factors consistently identified in the literature include top management support, the presence of a champion, good communication with all stakeholders, effective project management, reengineering of business processes, an understanding of corporate cultural change, and the use of business analysts on the project team.' (Rabaa'i & AlJamal 2015, p. 88)	Management
Champion	champion	'The specific items on business plan, goal and vision; on technical aspects; on team composition and skills; on top management championing and support; on project communication factors and on change management aspects formed the next block of items.' (Rabaa'i & AlJamal 2015, p. 94)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Champion	champion	'The associate director of IT felt it was important for QUT to maintain championship and ownership, and to supplement as necessary with specialist labour or expertise, and noted QUTs approach differed from other universities, some of which have been involved in complex arrangements ending in litigation.' (Rabaa'i & Gammack 2016, p. 56)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Champion	champion	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Champion	champion	'Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Management
Champion	champion	'Third factor is also being supported by two other sub-factors; centralization and project champion.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 68)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Champion	champion	'Similarly, project champion can be defined as one of the formal rituals and celebrations (Schein, 2004) in which a group celebrates key events that reflect important values or important passages by members such as completion of important projects and milestones.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 68)	Management
Champion	champion	'Have a project champion who performs the crucial functions like leadership, facilitation, and marketing the project to the users.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 75)	Management
Champion	champion	'Therefore, it is crucial to appoint a senior project champion (e.g., CEO) to take on the leadership role of the ERP implementation, whose job it is to bring respected and active contributing top management promoters into the system selection decision process rather than relying on the vendor's or consultant's efforts to overcome resistance.' (Shaul & Tauber 2013, p. 19)	Management
Collaboration	collaboration	'Implementation of ERP involves the collaboration of technical and business professionals with end users.' (Anjum & Khan 2015, p. 630)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Collaboration	collaboration	'Additionally, ERP implementation team should consist of representatives from all functional units of the organisation, from technical experts to senior executives, because the effort and collaboration of technical and business experts and the system's end-users are essential to the success of ERP implementation (e.g.' (Rabaa'i 2009, p. 9)	Management, Collection, Production, Use
Collaboration	collaboration	'Additionally, ERP implementation team should consist of representatives from all functional units of the organisation, from technical experts to senior executives, because the effort and collaboration of technical and business experts and the system's end-users are essential to the success of ERP implementation (e.g.' (Rabaa'i & Gammack 2016, p. 54)	Management, Collection, Production, Use
Communication	communication	'The authors find that top management support, good project management teams, and good communications are the top three most important critical successful factors during implementation.' (Ali & Miller 2017, p. 666)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'CSFs for successful ERP implementation are identified as top management support, presence of a champion, good communication with stakeholders, effective project planning, business process re-engineering (BPR), and using a business analyst on the project team (Bancroft et al., 1998; Bingi et al., 1999).' (Ali & Miller 2017, p. 674)	Management, Collection, Production, Use
Communication	communication	'They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.' (Ali & Miller 2017, p. 674)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Important CSFs identified are: ERP team work and composition, top management support, business plan and vision, effective communication, project management, project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and evaluation of performance.' (Ali & Miller 2017, p. 675)	Management, Collection, Production, Use
Communication	communication	'The factors in the order of ERP system importance are: implementation in LEs • lack of top management commitment; • ineffective communication; • insufficient training; • lack of user support; • poor project management; • relying on legacy systems; • inter-departmental conflicts; • composition of project team; • failure in redesigning business processes; and • lack of clarity about required changes.' (Ali & Miller 2017, p. 681)	Management, Collection, Production, Use
Communication	communication	'The top three most important CSFs to be considered at particular stages of the implementation process are top management support, good project teams, and good communications.' (Ali & Miller 2017, p. 682)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'The most common causes of ERP implementation failures are a combination of poor planning and high software customisation (Scheer and Habbermann, 2000), lack of top management commitment; ineffective communication; insufficient training; lack of user support, poor project management, relying on legacy systems, inter-departmental conflicts, poor composition of project teams, failure in redesigning business processes and, lack of clarity about required changes.' (Ali & Miller 2017, p. 682)	Management, Collection, Production, Use
Communication	communication	'The study founds a significant association of technological, strategic, project management, people, top management support and communication factor with ERP implementation.' (Anjum & Khan 2015, p. 628)	Management, Collection, Production, Use
Communication	communication	'Two researchers conducted a research study on the success issues of ERP which identified ten successive issues through investigate ten selective articles which are: effective decision making, Business Plan and vision, project management, effective communication, testing and troubleshooting, appropriate business and legacy system, ERP teamwork and composition, top management support and software development (Nah and Lau, 2001).' (Anjum & Khan 2015, p. 628)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Woo (2007) conducted a study through interviewing professionals concerned with the execution of ERP foremost Chinese ventures, the researchers acknowledged six vital success issues that contain: project team, process management, training and effective communication, commitment form top management, proper project management and proper education and training (Woo, 2007).' (Anjum & Khan 2015, p. 629)	Management, Collection, Production, Use
Communication	communication	'Efficient enterprise communication is significantly to ERP implementation (Falkowski et al., 1998).' (Anjum & Khan 2015, p. 630)	Management, Collection, Production, Use
Communication	communication	'Muscatello and Chen (2008) stated that appropriate communication strategies should be set up to keep senior management knowledgeable on the matter of ERP project impact, risks, progress and challenges.' (Anjum & Khan 2015, p. 630)	Management, Collection, Production, Use
Communication	communication	'The research study of Nah and Delgado (2006) suggests that early, continues and consistent communication, including an overview of the ERPS and visualization on how the business will modify have significant implications for the successful ERPS implementation project.' (Anjum & Khan 2015, p. 631)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Somers and Nelson (2004) stated that one of such benefits of communication among the stakeholders of various functions is that, it assists ERPS adopting firm to reduce users' resistance which is very important in initiating such project (Esteves-Sousa and PastorCollado, 2000).' (Anjum & Khan 2015, p. 631)	Management, Collection, Production, Use
Communication	communication	'Communication should include both internal and external.' (Anjum & Khan 2015, p. 631)	Management, Collection, Production, Use
Communication	communication	'Internal communication includes communication among ERPS project member, whereas external communication includes the entire organization.' (Anjum & Khan 2015, p. 631)	Management, Collection, Production, Use
Communication	communication	'For better communication, communication plan among the member is critical since communication plan warrants that open communication is happening in the entire organization and also with the suppliers and customers (Kumar et al., 2003).' (Anjum & Khan 2015, p. 631)	Management, Collection, Production, Use
Communication	communication	'The study of EstevesSousa and Pastor-Collado (2000) acknowledged that not only internal communication between ERPS project team individuals, but also external communication among the whole corporation are tremendously essential.' (Anjum & Khan 2015, p. 631)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Another requisite factor for successful ERPS is organization-wide communication among employees.' (Anjum & Khan 2015, p. 631)	Management, Collection, Production, Use
Communication	communication	'Such organization-wide communication transverse meant to support the various stages of ERPS implementation.' (Anjum & Khan 2015, p. 631)	Management, Collection, Production, Use
Communication	communication	'Communication is one of difficult and most challenging steps in the ERPS execution project.' (Anjum & Khan 2015, p. 631)	Management, Collection, Production, Use
Communication	communication	'The communication must be carried out through ERPS navigation board meetings plus standard position exposure.' (Anjum & Khan 2015, p. 632)	Management, Collection, Production, Use
Communication	communication	'Holland and Light (1999) recommended that utilizing communication apparatus, for example information sheet, monthly press release otherwise weekly meetings in order to maintain users' well- versed regarding ERPS execution project advancement.' (Anjum & Khan 2015, p. 632)	Management, Collection, Production, Use
Communication	communication	'Furthermore, top management commitment and communication, both have positive and constructive connection with the implementation of ERP systems.' (Anjum & Khan 2015, p. 632)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Studies have empirical evidence that technological, strategic, project management, people, top management support and communication positively affect the success of implementing ERP.' (Anjum & Khan 2015, p. 633)	Management, Collection, Production, Use
Communication	communication	'In order to succeed, a culture with common goals, shared values and a strong corporate identity open to change, is essential (Nah, Lau and Kuang, 2001), as well as communication of the benefits and the need for an ERP system (Finney and Corbett, 2007).' (Barth & Koch 2019, p. 658)	Management, Collection, Production, Use
Communication	communication	'Additionally, good communication of the project's progress to the rest of the organization is an easy way to promote and advertise the project and project team (Holland and Light, 1999).' (Barth & Koch 2019, p. 659)	Management, Collection, Production, Use
Communication	communication	'Nah, Faja and Cata (2001) add communication with external partners and user support as key points based on an empirical study.' (Barth & Koch 2019, p. 659)	Management, Collection, Production, Use
Communication	communication	'(6) Communication: one major objective has to be the introduction of a communication culture, which enables effective coordination between various departments and their interests.' (Barth & Koch 2019, p. 666)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Additionally, there is the need for professional communication within the project.' (Barth & Koch 2019, p. 666)	Management, Collection, Production, Use
Communication	communication	'Even though team members have different opinions on a topic, communication and discussion must take place on a professional level and personal differences must be left behind (I).' (Barth & Koch 2019, p. 666)	Management, Collection, Production, Use
Communication	communication	'Furthermore, communication with end users is important, as they can offer crucial process knowledge and indicate potential problems from their point of view (L).' (Barth & Koch 2019, p. 666)	Management, Collection, Production, Use
Communication	communication	'Another important factor within the communication with end users is the management of expectations.' (Barth & Koch 2019, p. 666)	Management, Collection, Production, Use
Communication	communication	'Furthermore, also reporting is a part of communication, which should be based on a detailed plan (I).' (Barth & Koch 2019, p. 666)	Management, Collection, Production, Use
Communication	communication	'Many factors, such as project management, team composition, communication, system testing and external support, are crucial for ERP implementation projects as well as for upgrade projects.' (Barth & Koch 2019, p. 670)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'In another study, Gyampah and Salam (2004) claimed that training, shared communication and shared beliefs in the benefits of the ERP system has a direct effect on users' perception about ERP system.' (Basoglu, Daim & Kerimoglu 2007, p. 83)	Management, Collection, Production, Use
Communication	communication	'The results of their study proved that training and project communication affect user perceptions through the shared belief in the benefits of ERP system.' (Basoglu, Daim & Kerimoglu 2007, p. 83)	Management, Collection, Production, Use
Communication	communication	'Additionally, critical success factors of ERP projects like customization, BPR, top management support, training and communication were grouped under these three actors and also project management for testing their effect on organizational adoption, too.' (Basoglu, Daim & Kerimoglu 2007, p. 89)	Management, Collection, Production, Use
Communication	communication	'Obviously, having such users is not enough, because they should be provided with support like training, information sharing, and effective communication and help desk activities.' (Basoglu, Daim & Kerimoglu 2007, p. 91)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Unless training, information sharing, effective communication and help desk activities are provided, people cannot have a better understanding of how their jobs are related to other functional areas within the company and also they cannot know to operate the new system.' (Basoglu, Daim & Kerimoglu 2007, p. 91)	Management, Collection, Production, Use
Communication	communication	'It was found out from the literature that Gyampah and Salam (2004) and Kerimoglu and Basoglu (2005) defined project management's communication facilities' as a subordinate determinant of use.' (Basoglu, Daim & Kerimoglu 2007, p. 92)	Management, Collection, Production, Use
Communication	communication	'Lack of management support, poor organizational culture, communication problems, financial management problems, lack of clarity on scope, project management problems, poor project team, ERP software misfit, poor solution implementer performance, poor quality of testing, outdated it infrastructure, lack of training, highly customized ERP, poor process design, lack of user involvement, resistance to change, unrealistic expectations are the main failure factors that need to be analyzed in detail.' (Coşkun et al. 2022, p. 3)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'For example, Tsai [44] defines it as "Reach" for the project team to interact with end users to understand the requirements, while Malaurent [45] defines it as "communication matters".' (Coşkun et al. 2022, p. 10)	Management, Collection, Production, Use
Communication	communication	'For example, according to Sahran [46], "Lack of internal communication" is seen as a subset of "Change Management".' (Coşkun et al. 2022, p. 10)	Management, Collection, Production, Use
Communication	communication	'It should not be confused that many factors such as "budget", "communication", and "project team" are not examined in the "Project Management Problems" category since they are examined in separate categories because many articles analyzed in this study show that project management is handled as project coordination.' (Coşkun et al. 2022, p. 13)	Management, Collection, Production, Use
Communication	communication	'As expected, education, organizational culture, and communication problems come to the fore in large-scale companies, while financial problems come to the fore in small-scale companies.' (Coşkun et al. 2022, p. 16)	Management, Collection, Production, Use
Communication	communication	'ERP projects fail as communication becomes inefficient.' (Coşkun et al. 2022, p. 16)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'For example, resistance to change and financial problems may be encountered more commonly in small-scale organizations, whereas communication is more critical in large-scale companies.' (Coşkun et al. 2022, p. 19)	Management, Collection, Production, Use
Communication	communication	'Communication among various functions/levels (Mandal and Gunasekaran, 2003) and specifically between business and IT personnel (Grant, 2003) is another identified CSF.' (Finney & Corbett 2007, p. 337)	Management, Collection, Production, Use
Communication	communication	'This requires a communication plan (Kumar et al., 2002) to ensure that open communication occurs within the entire organization, including the shop-floor employees (Yusuf et al., 2004), as well as with suppliers and customers (Mabert et al., 2003).' (Finney & Corbett 2007, p. 337)	Management, Collection, Production, Use
Communication	communication	'Al-Mashari et al. (2003) and Al Mudimigh et al. (2001) mention the need for communication and consultation with various key stakeholders, but in particular with the client.' (Finney & Corbett 2007, p. 338)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.' (Finney & Corbett 2007, p. 340)	Management
Communication	communication	'Some of their ideas include: support and training, increased communication, user guidelines, demonstration of benefits.' (Finney & Corbett 2007, p. 342)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'These factors include, but not limited to, poor consultant effectiveness, ERP software misfit, unrealistic expectations from top management concerning the ERP systems, over-reliance on heavy customization, poor quality of Business Process Reengineering (BPR), high turnover rate of project team members, poor IT Infrastructure, functionality problems with the system, unclear concept of the nature and use of the ERP system from the users perspective, too tight project schedule, lack of formal communication, part-time dedication, etc.' (Garg, P & Garg, A 2013, p. 498)	Management, Collection, Production, Use
Communication	communication	'Consultants who are not able to demonstrate a mastery of professional communication skills, good language capability, industrial knowledge, and business analytical skills, are not able to provide expertise concerning project planning, ERP systems and BPR during ERP implementation and hence cannot act as change agents and fill the knowledge gaps (Ngai et al., 2008; Stebel, 1992; Ganesh and Mehta, 2010; Nah and Lau, 2001) (for example, communicating with project team members and users for acquiring business requirements, conducting BPR and delivering professional training).' (Garg, P & Garg, A 2013, p. 499)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'A formal management process is also needed to track and monitor the vendor/consultant's activities and communications.' (Garg, P & Agarwal 2014, p. 416)	Management, Collection, Production, Use
Communication	communication	'Effective enterprise communication is critical to ERP implementation (Falkowski et al., 1998).' (Garg, P & Garg, A 2014, p. 432)	Management, Collection, Production, Use
Communication	communication	'Management of communication, education and expectations are critical throughout the organization (Wee, 2000).' (Garg, P & Garg, A 2014, p. 434)	Management, Collection, Production, Use
Communication	communication	'Communication includes the formal promotion of project teams and the advertisement of project progress to the rest of the organization (Holland et al., 1999).' (Garg, P & Garg, A 2014, p. 434)	Management, Collection, Production, Use
Communication	communication	'Enterprise wide effective communication is one of the most influential items for ERP implementation success.' (Garg, P & Garg, A 2014, p. 439)	Management, Collection, Production, Use
Communication	communication	'So it is recommended for mangers of retail organization to have a strong and effective communication throughout the various stages of the ERP implementation.' (Garg, P & Garg, A 2014, p. 439)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Open and honest communication across the organization is of paramount importance to satisfy the information needs of users, and to prevent the circulation of unfounded rumors.' (Garg, P & Garg, A 2014, p. 439)	Management, Collection, Production, Use
Communication	communication	'The success of ERP implementation depends on effective project communication.' (Garg, P & Garg, A 2014, p. 441)	Management, Collection, Production, Use
Communication	communication	'It is recommended that communication within the project team should be done in timely and effectively manner so that there should not be any communication gap within the project team.' (Garg, P & Garg, A 2014, p. 441)	Production
Communication	communication	'Effective Enterprise communication is critical to ERP implementation (Falkowski et al., 1998).' (Garg, P & Chauhan 2015, p. 1318)	Management, Collection, Production, Use
Communication	communication	'Muscatello and Chen (2008) argued that suitable communication plans should be set ERP up to keep senior management informed on the subject of ERP project impact, implementation challenges, risks and progress.' (Garg, P & Chauhan 2015, p. 1319)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Management of communication, education and expectations are critical throughout the organization (Wee, 2000).' (Garg, P & Chauhan 2015, p. 1320)	Management, Collection, Production, Use
Communication	communication	'(1) The "Organizational" factor in this study is defined by business plan and vision, top management support, business process reengineering, ERP product selection, selection of implementation partner/consultants and enterprise wide communication plan items which may affect the success of ERP implementation in Indian retail sector.' (Garg, P & Chauhan 2015, p. 1327)	Management, Collection, Production, Use
Communication	communication	'(4) The Project Management factor in this study is defined by team composition, project team competence, scope management, expectation management, communication within project team and budget control items which may affect the success of ERP implementation in Indian retail sector.' (Garg, P & Chauhan 2015, p. 1332)	Management, Collection, Production, Use
Communication	communication	'The success of ERP implementation depends on effective project communication.' (Garg, P & Chauhan 2015, p. 1333)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Drawing from the literature, we found security, project management, and communication are the top three widely cited CSFs during implementation.' (Huang et al. 2021, p. 4683)	Management, Collection, Production, Use
Communication	communication	'The most widely cited CSFs were found to be: security, project management, communication, compliance, network and the reaction of organization.' (Huang et al. 2021, p. 4685)	Management, Collection, Production, Use
Communication	communication	'Communication represents the third most widely cited CSF that is vital to successful implementation [15, 19, 22, 23, 25].' (Huang et al. 2021, p. 4685)	Management, Collection, Production, Use
Communication	communication	'Effective communication can enrich employees' knowledge and can help employees learn from each other.' (Huang et al. 2021, p. 4685)	Management, Collection, Production, Use
Communication	communication	'Transparent and precise communication is required to reduce ambiguity in the understanding of employees during the implementation [23].' (Huang et al. 2021, p. 4685)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) • Communication within the company • Organization resistance • Project budget • Project management • Implementation strategy • Strategic goals and objectives • Business process reengineering • organizational culture • knowledge base of the company • Project planning and control • Facilitating conditions • Organization size • The vision of the organization • Readiness of organizations • Clarity of potential cost • User involvement • Selection of vendor/consult ant • Project team • Top management support • Training of user • Trust on vendor • Performance expectancy • Effort expectancy • Social influence • Age • Gender • Highest degree attained • Selection of ERP package • IT infrastructure • Data integrity and system testing.' (Huang et al. 2021, p. 4686)	Management, Collection, Production, Use
Communication	communication	'Discussion From the systematic literature review conducted into Cloud ERP implementation, we found that the top five most widely cited CSFs for the successful implementation of Cloud ERP are: security, project management, communication, compliance, and network.' (Huang et al. 2021, p. 4689)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'CSFs, such as communication, project management, strategic goals and objectives and top management support are important for both forms of ERP (i.e., on-premise, cloud-based).' (Huang et al. 2021, p. 4689)	Management, Collection, Production, Use
Communication	communication	'F18 Effective communication Esteves et al., 2003; Woo, 2007; Almahdi et al., 2008; Nah et al., 2003; Jafari et al., 2006; Bancroft et al., 1998; Amoako & Salam, 2004; Hanafizadeh et al., 2010; Lai,2006; Muscatello & Chen, 2008; Dawson & Owens, 2008.' (Khattak et al. 2013, p. 48)	Management, Collection, Production, Use
Communication	communication	'The results of the survey revealed that level of communication in the enterprises, where the implementation went successful, was medium on average in a sense that the system users and other concerned managers/employees were not involved in the selection/adoption of the ERP system prior going for the ERP implementation, while in others because the system users as well as concerned managers were got involved in the same therefore, the communication level was observed as high over there.' (Khattak et al. 2013, p. 63)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'However, the level of communication was low in case of unsuccessful firms and closed coordination among the management and employees for effective execution of various activities and operations was not used to be encouraged.' (Khattak et al. 2013, p. 63)	Management, Collection, Production, Use
Communication	communication	'This shows that an effective and clear communication among the organizational members is necessary for ERP project implementation success.' (Khattak et al. 2013, p. 63)	Management, Collection, Production, Use
Communication	communication	'We contend that the mechanism of communication should be such that the information should be shared easily, promptly, correctly and on time among the employees as well as among the business units.' (Khattak et al. 2013, p. 65)	Management, Collection, Production, Use
Communication	communication	'The information sharing through effective communication should start at early stage in the ERP implementation project and the reasons for its implementation may be in consistency with the overall organization goals and objectives.' (Khattak et al. 2013, p. 65)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'The research concludes that: (1) Quality (adequacy) and quantity of training and education of personnel/users, role and effectiveness of management in reducing the users' resistance, use of steering committee for control purpose, top management support or involvement, clearly specified goals/objectives/scope regarding ERP system, ease of system's use and users' acceptance, vendor's support, project management, effective communication among the organizational members and a balanced team for ERP implementation are practically considered by the successful enterprises in China while planning and going for the implementation of the ERP system and are thus critical for the success of ERP systems implementation projects, ignoring of which may cause implementation failure in the Chinese organizations; (2) Some of the factors deemed imperative for ERP systems implementation success in the literature like; selection of a right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role of consultant, change management strategy and programs, competency in use of IT and IT infrastructure, business...' (Khattak et al. 2013, p. 68)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'According to the literature, the most studied factors were: Top Management Support, Effective Communication, Training, and Education, Business plan and vision, Project Management, BPR management, Change Management, Project team Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation, Technological Infrastructure, Legacy systems consideration.' (Mahraz, Benabbou & Berrado 2020, p. 112)	Management, Collection, Production, Use
Communication	communication	'The principal function of the top management is the establishment of clear objectives and goals for the ERP project, which allows to move all parties in the same direction; Effective communication: The effective communication in the organization must occur between the various functions and levels of the organization, between the institution's departments, and specifically between the business staff and the IT staff.' (Mahraz, Benabbou & Berrado 2020, p. 112)	Management, Collection, Production, Use
Communication	communication	'In the ERP system, implementation (Campos Fernandes Leandro et al., 2017; Nah et al.,2001; Ngai et al., 2008) considers communication to be a critical success factor.' (Mahraz, Benabbou & Berrado 2020, p. 112)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'It includes communication of expectations at all company levels, formal presentations by the project teams and the announcement of the project results within the company and announcement of the project scope, objectives and activities before the project onset (Doom et al., 2010); Training and Education: Training and Education are considered actually as one of the preconditions of building a successful ERP system.' (Mahraz, Benabbou & Berrado 2020, p. 112)	Management, Collection, Production, Use
Communication	communication	'Culture, Communication, and Change Management The deployment of the ERP system is often seen as a purely technical project, and the organizational and human aspects are sometimes neglected.' (Mahraz, Benabbou & Berrado 2020, p. 119)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'The findings of our study reveal that 'appropriate business and IT legacy systems', 'business plan/vision/goals/justification', 'business process reengineering', 'change management culture and programme', 'communication', 'ERP teamwork and composition', 'monitoring and evaluation of performance', 'project champion', 'project management', 'software/system development, testing and troubleshooting', 'top management support', 'data management', 'ERP strategy and implementation methodology', 'ERP vendor', 'organizational characteristics', 'fit between ERP and business/process', 'national culture' and 'country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.' (Ngai, Law & Wat 2008, p. 548)	Management, Collection, Production, Use
Communication	communication	'Communication Clear and effective communication at all levels of an organization is necessary before and during the implementation of ERP [8,51].' (Ngai, Law & Wat 2008, p. 551)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Communication includes the formal promotion of ERP project teams and advertisements on the project's progress to the rest of the organization [28].' (Ngai, Law & Wat 2008, p. 551)	Management, Collection, Production, Use
Communication	communication	'Amoako-Gyampah and Salam [7] found that effective communication is one of the success factors that influence the acceptance of technology in an ERP implementation environment.' (Ngai, Law & Wat 2008, p. 551)	Management, Collection, Production, Use
Communication	communication	'Problems in companies under study include poor communication, lack of support from department heads, poor training services from vendor, and low user involvement.' (Ngai, Law & Wat 2008, p. 559)	Management, Collection, Production, Use
Communication	communication	'Other problems reported are lack of BPR [87], poor communications, lack of support from management, limited level of user involvement, poor training from vendors [90], and weakness in existing IT infrastructure [41].' (Ngai, Law & Wat 2008, p. 559)	Management, Collection, Production, Use
Communication	communication	'The organizational-related factors refer to a set of factors fundamental and commonly known to most ERP-adopting organizations such as 'business process reengineering', 'inter-departmental communication' and 'top management support'.' (Ngai, Law & Wat 2008, p. 560)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Communication Failing to achieve a fluent and open communication between top management and the system user is a major cause of ERP implementation failure [37].' (Osman & Sahraoui 2019, p. 39)	Management, Collection, Use
Communication	communication	'Indeed, cross functional and interdepartmental coordination is of utmost importance when implementing an ERP system and having excellent company-wide communication is vital [30].' (Osman & Sahraoui 2019, p. 39)	Management, Collection, Production, Use
Communication	communication	'Continuous communication with the whole company will let the system users know what is happening, what results are to be expected and if something goes awry, they are directly informed and involved in solving the problem instead of left behind in confusion [38].' (Osman & Sahraoui 2019, p. 39)	Management, Collection, Production, Use
Communication	communication	'Mahrer (1999) investigated the antecedents and impact of a successful ERP system implementation in a Swiss university, and concludes that strong communication and coherence between the departments in the university was the main success factor.' (Rabaa'i 2009, p. 3)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Eleven critical factors were identified, such as ERP teamwork and composition, change management program and culture, top management support, business plan and vision, business process reengineering (BPR) and minimum customisation, effective communications, project management, software development, testing and troubleshooting, monitoring and evaluating performance, project champion, and appropriate business and IT legacy systems.' (Rabaa'i 2009, p. 6)	Management, Collection, Production, Use
Communication	communication	'The factors identified were management and leadership, visioning and planning, ERP package selection, communication process management, training and education, project management, legacy systems management, system integration, system testing, cultural and structural changes, and performance evaluation and management.' (Rabaa'i 2009, p. 6)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Based on the work by Markus and Tanis (2000), Nah and Delgado organised these factors into seven main categories: (1) Business plan and vision; (2) Change management; (3) Communication; (4) ERP team composition, skills, and compensation; (5) Project management; (6) Top management support and championship; and (7) System analysis, selection, and technical implementation.' (Rabaa'i 2009, p. 6)	Management, Collection, Production, Use
Communication	communication	'4.9 Communication Plan Project communication is considered as an essential CSF for ERP implementations.' (Rabaa'i 2009, p. 10)	Management, Collection, Production, Use
Communication	communication	'While some researchers argued the need for communication among various functions/levels (Mandal and Gunasekaran, 2003), other specifically argued the necessity of communication between business and IT personnel (Grant, 2003).' (Rabaa'i 2009, p. 10)	Management, Collection, Production, Use
Communication	communication	'Sumner (1999) debated that the communication plan should not just exist between senior management and project team members.' (Rabaa'i 2009, p. 10)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'The whole organisation should be aware of the project scope, its objectives and activities as an effective communication plan will have a direct impact on the success of the change management program (Mendel, 1999).' (Rabaa'i 2009, p. 10)	Management, Collection, Production, Use
Communication	communication	'Communication should take place during regular update meetings, the distribution of project newsletters or the placement of wall charts in conspicuous locations (Sumner, 1999).' (Rabaa'i 2009, p. 10)	Management, Collection, Production, Use
Communication	communication	'Further, Mendel (1999) stated that strong communication throughout the various stages of the implementation process is essential in allowing employees to understand what is going on in the project, why change is necessary, and how it will benefit the organisation.' (Rabaa'i 2009, p. 10)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'In addition, an effective communication plan will lead to the development of trust and the exchange of information needed for process changes and the acceptance of the new technology (Amoako- Gyampah, 2004) Organisation's stakeholders must be informed of the project goals and the expected benefits of the ERP project as well as its capabilities and the limitations of the ERP system (Holland et al. 1999; Al- Mashari et al. 2003; Nah and Delgado, 2006).' (Rabaa'i 2009, p. 10)	Management, Collection, Production, Use
Communication	communication	'For instance, Al-Mashari and Al-Mudimigh (2003) argued that the importance of an effective communication plan relies on the fact that it could build the ability of the entire organisation in business process reengineering, and gain all stakeholders' support and commitment.' (Rabaa'i 2009, p. 10)	Management, Collection, Production, Use
Communication	communication	'Al-Mashari and Al-Mudimigh provided a number of different communication methods to keep all stakeholders informed of new developments and answering questions about the project implementation by way of newsletters, focus groups, email and Web-based archives.' (Rabaa'i 2009, p. 10)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Other critical factors include visioning and planning, consultant selection and relationship, effective communication plan, ERP system selection, ERP systems integration, and post-implementation evaluation measures.' (Rabaa'i 2009, p. 11)	Management, Collection, Production, Use
Communication	communication	'Brief Review of the Current Status of Studies on ERP in the HE Sector Mahrer (1999) investigated the antecedents and impact of a successful ERP system implementation in a Swiss university, and concludes that strong communication and coherence between the departments in the university was the main success factor.' (Rabaa'i, Bandara & Gable 2009, p. 458)	Management, Collection, Production, Use
Communication	communication	'The critical success factors consistently identified in the literature include top management support, the presence of a champion, good communication with all stakeholders, effective project management, reengineering of business processes, an understanding of corporate cultural change, and the use of business analysts on the project team.' (Rabaa'i & AlJamal 2015, p. 88)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Organisational factors traditionally found to affect implementation success, including management support, project communication, change management and team composition do not differentiate the public from the private sector, at least in the case of Jordan.' (Rabaa'i & AlJamal 2015, p. 97)	Management, Collection, Production, Use
Communication	communication	'Elsewhere, Mahrer (1999) investigated the antecedents and impact of a successful ERP system implementation in a Swiss university, and concluded that strong communication and coherence between the departments in the university was the main success factor.' (Rabaa'i & Gammack 2016, p. 48)	Management, Collection, Production, Use
Communication	communication	'It is notable that a similar university, RMIT in Melbourne, had a spectacular failure with implementation of its Peoplesoft student administration, This is partly attributable to student admin functionality not being mature "like finance and HR", but a second reason for this failure, diagnosed in a Gartner report, was a lack of communication between team members and a failure to adequately consider business processes before implementation.' (Rabaa'i & Gammack 2016, p. 56)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Training resources and activities are also organised through a dedicated communications team which forms part of the Division for Technology, Information and Learning Support which provides central IT services and support.' (Rabaa'i & Gammack 2016, p. 56)	Management, Collection, Production, Use
Communication	communication	'Communication is understood within the IT services team and its project managers, with explicit communication plans implemented and reported against projects.' (Rabaa'i & Gammack 2016, p. 56)	Management, Collection, Production, Use
Communication	communication	'Sampling these reports shows that most projects consider the effectiveness of their communications with stakeholders both for business requirements gathering and appropriate scheduling of status communications.' (Rabaa'i & Gammack 2016, p. 56)	Management, Collection, Production, Use
Communication	communication	'Communication for some projects must go beyond a (monthly) update as transparency is required for academic stakeholders who may not appreciate what a project involves in terms of BPR.' (Rabaa'i & Gammack 2016, p. 56)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'ERP failure factors and categories Failure Categories Failure Factors C4: Project Management F1: Conflicts between organization and consultants/ vendor C5: Technical F2: High rate of system customization C5: Technical F3: Data management issues C2: Human Resources F4: Inadequate education and training C2: Human Resources F5: Inadequate user involvement C2: Human Resources F6: Ineffective communications system C3: Organizational F7: Internal conflicts between departments C2: Human Resources F8: Inadequate change management C3: Organizational F9: Lack of performance measurement system C3: Organizational F10: Misfit between organization culture and ERP system C3: Organizational F11: Misfit between organization structure and ERP system C3: Organizational F12: Misfits between the IT and business strategies C1: Environmental F13: Environmental pressures C3: Organizational F14: Poor business process reengineering C1: Environmental F15: Poor consultant C4: Project Management F16: Poor project management C4: Project Management F17: Poor risk management C3: Organizational F18: Poor top management support C5: Technical F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...' (Ravasan & Mansouri 2014, p. 42)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Critical success factors identified in Turkish studies Author (s) Critical Success Factors Baskak& Cetisli (2003) Top management support, business plan and vision, ERP teamwork, ERP package selection, change management, user training and education, effective communication, project management, data integration, software testing and troubleshooting, appropriate legacy systems, monitoring and evaluation of performance.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 62)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'The results supported the findings of Sarker & Lee (2003) who stated that strong and committed leadership, open and honest communication, and a balanced and empowered implementation team are necessary conditions/precursors for successful ERP application.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 68)	Management, Collection, Production, Use
Communication	communication	'Other important determinants identified in factor four are, interdepartmental communication and effective communication.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 68)	Management, Collection, Production, Use
Communication	communication	'The proposed model confirms that following factors play a significant role during implementation of SCMIS—top management support, user involvement, pre-implementation analysis, user training, change management, data accuracy and communication.' (Seth, Goyal & Kiran 2015, p. 248)	Management, Collection, Production, Use
Communication	communication	'Other important organizational factor considered by Ngai et al. (2008), Fui-Hoon Nah et al. (2003) and Sarker and Lee (2003) is communication.' (Seth, Goyal & Kiran 2015, p. 250)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Proper communication in regard to the rationale to the implementation and details of the business process management change with the employees (Mandal & Gunasekaran, 2003) is very important.' (Seth, Goyal & Kiran 2015, p. 250)	Management, Collection, Production, Use
Communication	communication	'Therefore, the open communication with the employees, suppliers and customers is an important factor for the successful implementation of SCMIS (Mabert, Soni & Venkataramanan, 2003).' (Seth, Goyal & Kiran 2015, p. 250)	Management, Collection, Production, Use
Communication	communication	'According to the regression analysis on the successful implementation of SCMIS, as shown in Table 8, factors that have significant impact at 5 per cent or higher level include top management support, user support and involvement, training and education, change management, pre-implementation analysis, communication and data Table 7.' (Seth, Goyal & Kiran 2015, p. 256)	Management, Collection, Production, Use
Communication	communication	'Formal and honest communication from the top management leads to reduction in the resistance to change.' (Seth, Goyal & Kiran 2015, p. 258)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Lastly, the findings of this study support the proposed hypothesis that communication has a positive impact on SCMIS implementation success (H1h), so as organizations move towards integration with the outside world, proper communication is imperative between the users, top management, project management team and leader.' (Seth, Goyal & Kiran 2015, p. 258)	Management, Collection, Production, Use
Communication	communication	'Proper communication should ensure that the users understand the need and the benefits associated with the adoption of the inter-organizational system.' (Seth, Goyal & Kiran 2015, p. 258)	Management, Collection, Production, Use
Communication	communication	'Communication should be two way as well as open where employees are free to express themselves and give their feedback.' (Seth, Goyal & Kiran 2015, p. 258)	Management, Collection, Production, Use
Communication	communication	'Communication will reduce the uncertainty with the adoption of the information system and would diminish the concern about the threat of job, power or status.' (Seth, Goyal & Kiran 2015, p. 258)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Communication	communication	'Such consequences can be avoided by open communication with top management, vendors, and consultants through the establishment of senior and professional steering committees, a balanced project team, and a "responsible" definition of success measures.' (Shaul & Tauber 2013, p. 19)	Management, Collection, Production, Use
Consultant Support	consultant support	'Other factors found to affect the effectiveness of ERP system implementation, includes external consultant support, knowledge transfer, and the technical aspects knowledge transfers, all of which are essential during an implementation process.' (Ali & Miller 2017, p. 673)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Consultant Support	use of consultant	'They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.' (Ali & Miller 2017, p. 674)	Management
Consultant Support	use of consultant	'Reduce trouble shooting and project risk risk management which involves developing proper troubleshooting tools, adequate skills and techniques and in relation to the CSF use of consultants, working closely with vendors and consultants when something is wrong in the system [4].' (Osman & Sahraoui 2019, p. 38)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Consultant Support	use of consultant	'Organisational factors constitute 8 of the 'top 10' CSFs (Ahmad and PinedoCuenca, 2013), and based on the interaction impact among these factors, the most critical to success were cultural change, management support, and use of consultants, factors most applicable at the crucial stages of adaptation and acceptance.' (Rabaa'i & AlJamal 2015, p. 87)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Consultant Support	use of consultant	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale- motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Consultant Support	use of consultant	'Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Cooperation	cooperation	'They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.' (Ali & Miller 2017, p. 674)	Management, Collection, Production, Use
Cooperation	cooperation	'Top management, project management and individuals like key players should work in cooperation to adopt the system to their organization.' (Basoglu, Daim & Kerimoglu 2007, p. 87)	Management, Collection, Production, Use
Cooperation	cooperation	'Successful ERP implementation requires the coordination of many activities and a close cooperation between managers, employees, IT specialists, business analysts and consultants [39].' (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1255)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Cooperation	cooperation	'Since ERP is a highly integrated information system, its design, implementation and operation require the complete cooperation of line and staff members from all segments of the business.' (Garg, P & Agarwal 2014, p. 404)	Management, Collection, Production, Use
Cooperation	cooperation	'It needs the cooperation of technical, business experts and external consultants, as well as the involvement of end-users in different project phases (Nah et al.,2001).' (Mahraz, Benabbou & Berrado 2020, p. 113)	Management, Collection, Production, Use
Cooperation	cooperation	'The top five were top management support, project team competence, project champion, inter-departmental cooperation, and clear goals and expectations.' (Rabaa'i 2009, p. 6)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Cooperation	cooperation	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Cooperation	cooperation	'Maintain cooperation, involvement and value of trust between departments.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 74)	Management, Collection, Production, Use
Cooperation	cooperation	'Intervention of the top management is necessary for the resourcing of the project, to take fast and effective decisions, to resolve conflict, to promote company-wide acceptance of the project and to build cooperation among the diverse groups within the organization.' (Seth, Goyal & Kiran 2015, p. 250)	Management, Collection, Production, Use
Cooperation	cooperation	'It is imperative that we have the complete cooperation of employees at all levels; technologies alone will not improve the organizational competitiveness.' (Seth, Goyal & Kiran 2015, p. 250)	Management, Collection, Production, Use
Cooperation	cooperation	'Successful implementation of IOS requires the cooperation and commitment of trading partners (Premkumar & Ramamurthy, 1995); thus, developing cordial relationships and partnerships (Gunasekaran, Lai & Edwin Cheng, 2008; Ketikidis, Koh, Dimitriadis, Gunasekaran & Kehajova, 2008) forms the basis of successful IOS.' (Seth, Goyal & Kiran 2015, p. 251)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Cooperation	cooperation	'In addition, the project team should be empowered to define a clear program and required resources, set realistic milestones, and ensure interdepartmental cooperation.' (Shaul & Tauber 2013, p. 19)	Management, Collection, Production, Use
Cost of Function	budget	'Summarising, Velcu (2010), using an analytical approach to investigate ERP system implementations, reports that when ERP system implementation strategies are aligned with business strategy, it is more likely that ERP implementation will be completed on budget and on time.' (Ali & Miller 2017, p. 678)	Management, Collection, Production, Use
Cost of Function	budget	'These projects are, on average, 178took 2.5 times longer than intended and delivered only 30benefit [9].' (Amid, Moalagh & Ravasan 2012, p. 227)	Management, Collection, Production, Use
Cost of Function	budget	'C states: "Projects have to meet time, budget and scope targets to be called successful." H, on the other hand, thinks time is not the main priority in ERP upgrade projects, as long as there is a usable system in place and productivity is not endangered.' (Barth & Koch 2019, p. 663)	Management, Collection, Production, Use
Cost of Function	budget	'However, functionality targets have to be achieved and budget targets met.' (Barth & Koch 2019, p. 663)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Cost of Function	budget	'Nevertheless, I states: "To qualify a project as successful, also time and budget targets have to be met." As a result of the high complexity of the project and the huge dependency on the ERP system, B and J scale down the expectations and consider an ERP upgrade project as successful when time targets are nearly met and the company is able to continue their business without complications.' (Barth & Koch 2019, p. 663)	Management, Collection, Production, Use
Cost of Function	budget	'As a result of the high complexity of such projects, financial forecasts are often not met and costs exceed the planned budget.' (Barth & Koch 2019, p. 667)	Management, Collection, Production, Use
Cost of Function	budget	'In addition to that, about 90implementations are over budget or late according to a survey constructed in 1999 (Seewald, 2002).' (Basoglu, Daim & Kerimoglu 2007, p. 74)	Management, Collection, Production, Use
Cost of Function	budget	'A recent Standish Group report on ERP implementation projects reveals that these projects are, on average, 178over budget, took 2.5 times longer than intended and delivered only 30promised benefit (Zhang, Lee, Huang, Zhang, & Huang, 2005).' (Basoglu, Daim & Kerimoglu 2007, p. 74)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Cost of Function	budget	'Moreover, With ERP penetration at 67market was the largest segment of a company's applications budget (342004.' (Basoglu, Daim & Kerimoglu 2007, p. 77)	Management, Collection, Production, Use
Cost of Function	budget	'In spite of high expectations of the organizations purchasing ERP software, most of ERP projects become overbudget, late and even fail (Genoulaz & Millet, 2006; Griffith et al., 1999; Hong & Kim, 2002; Kumar et al., 2003; Seewald, 2002).' (Basoglu, Daim & Kerimoglu 2007, p. 79)	Management, Collection, Production, Use
Cost of Function	budget	'Although most of the ERP projects are failures, ERP is still expected to remain the biggest segment of large and mid-size companies' IT applications budgets (Seewald, 2002).' (Basoglu, Daim & Kerimoglu 2007, p. 92)	Management, Collection, Production, Use
Cost of Function	budget	'In 2004, it was evaluated that 90applications were delivered late or exceeded the budget, and 67applications failed to achieve expected benefits realization [21].' (Coşkun et al. 2022, p. 3)	Management, Collection, Production, Use
Cost of Function	budget	'One of the most common types of failure in ERP implementation can be seen as budget overruns.' (Coşkun et al. 2022, p. 3)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Cost of Function	budget	'Often, budget overruns are caused by issues such as expanded scope, additional technology requirements, unanticipated organizational issues.' (Coşkun et al. 2022, p. 3)	Management, Collection, Production, Use
Cost of Function	budget	'It should not be confused that many factors such as "budget", "communication", and "project team" are not examined in the "Project Management Problems" category since they are examined in separate categories because many articles analyzed in this study show that project management is handled as project coordination.' (Coşkun et al. 2022, p. 13)	Management, Collection, Production, Use
Cost of Function	budget	'(4) The Project Management factor in this study is defined by team composition, project team competence, scope management, expectation management, communication within project team and budget control items which may affect the success of ERP implementation in Indian retail sector.' (Garg, P & Chauhan 2015, p. 1332)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Cost of Function	budget	'Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) • Communication within the company • Organization resistance • Project budget • Project management • Implementation strategy • Strategic goals and objectives • Business process reengineering • organizational culture • knowledge base of the company • Project planning and control • Facilitating conditions • Organization size • The vision of the organization • Readiness of organizations • Clarity of potential cost • User involvement • Selection of vendor/consult ant • Project team • Top management support • Training of user • Trust on vendor • Performance expectancy • Effort expectancy • Social influence • Age • Gender • Highest degree attained • Selection of ERP package • IT infrastructure • Data integrity and system testing.' (Huang et al. 2021, p. 4686)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Cost of Function	budget	'This study attempts to present the ERP system's implementation success in terms of organizational impact, on time and under allocated budget by qualitatively examining relationship of each of the identified critical success factors (CSFs) to project's implementation success in enterprises of a developing country, China, by using validated responses from 12 organizations, using a questionnaire survey approach.' (Khattak et al. 2013, p. 39)	Management, Collection, Production, Use
Cost of Function	budget	'As per the Standish group's research more than 90of ERP implementations projects found to run beyond their agreed schedules and exceed their initially allocated budget (Hanafizadeh et al., 2010).' (Khattak et al. 2013, p. 41)	Management, Collection, Production, Use
Cost of Function	budget	'The aim and main focus of this study is to examine the most critical factors in Chinese enterprises by using the 'organizational impact' dimension of information system success model (DeLone and McLean, 1992 & 2002) for success assessment together with 'on time and under allocated budget' for project completion as being the success measures.' (Khattak et al. 2013, p. 41)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Cost of Function	budget	'Success of the project was measured by the questions about on time and within/under budget project's completion and the impact of the ERP systems, whether low or medium or high, on the entire organizational performance.' (Khattak et al. 2013, p. 49)	Management, Collection, Production, Use
Cost of Function	budget	'As Bradley (2008) argued that a project could be said successful only if it is got to be completed within the scheduled time, allocated budget and bringing positive impact on the entire organization therefore, on the basis of the same criteria cases 1,2,3,4.5,6,8,9,10 & 12 were classed as successful and cases 7 & 11 were termed as unsuccessful.' (Khattak et al. 2013, p. 53)	Management, Collection, Production, Use
Cost of Function	budget	'IT staff too may have a significant learning overhead, an inadequate budget for the training required, an extra learning curve (with an ongoing dependence on consultants) significant extra work necessitated while legacy systems remain critical.' (Rabaa'i & Gammack 2016, p. 58)	Production
Cost of Function	budget	'These projects are, on average, 178took 2.5 times longer than intended and delivered only 30benefit (Zhang, Lee, Huang, Zhang, & Huang, 2005).' (Ravasan & Mansouri 2014, p. 33)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Cost of Function	budget	'Generally, it is believed that the project is partially failed because it is not completed within time and/or budget (process failure), the ERP systems do not live up to user expectations (expectation failure), and there is no match between ERP systems and the planned objectives (correspondence failure).' (Ravasan & Mansouri 2014, p. 40)	Production
Cost of Function	cost	'Enterprise resource planning (ERP) systems have proved to be the solution to the information needs of many businesses, but a costly mistake for many others.' (Ali & Miller 2017, p. 666)	Management, Collection, Production, Use
Cost of Function	cost	'Mandal and Gunasekaran (2003), examining post-implementation feedback, propose a feedback system to help organisations constantly monitor the implementation performance, and post-implementation strategies to measure the effectiveness of ERP systems, including the measurement of objectives achieved, cost estimates, and improvements in IT infrastructure.' (Ali & Miller 2017, p. 679)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Cost of Function	cost	'They observe that vendor failure to adapt to local culture, BPR, managing local human resources, lack of information sharing, failure to understand cultural characteristics, lack of adaptability towards a changing business and economic environment, lack of cost control functions (i.e. adapting to changing costs), and failure to understand technical issues are the main causes of ERP implementation failure.' (Ali & Miller 2017, p. 681)	Management, Collection, Production, Use
Cost of Function	cost	'They identify causes of ERP implementation failure as excessive customisation, dilemma of internal integration, poor understanding of business implications and requirements, lack of change management strategy, poor data quality, misalignment of IT with business, hidden costs, limited training, and lack of top management support.' (Ali & Miller 2017, p. 681)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Cost of Function	cost	'Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline Organisational resistance Lack of organisational commitment Poor data accuracy Limited user involvement Mismatch between organisation requirements and functionalities offered Lack of readiness for integration Lack of focus on user education and training Excessive customisation Inadequate organisational analysis Costs Project duration Technical challenges Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.' (Ali & Miller 2017, p. 681)	Management, Collection, Production, Use
Cost of Function	cost	'35remaining 65178Management, Collection, Production, Use	
Cost of Function	cost	'The first category defines success or failure by focusing on some project factors like project cost or time but other ones define success as a result of achieving implementation goals like integrating organizational information, better decision making, improving inter-organizational communications and decreasing operational bottlenecks [47-49].' (Amid, Moalagh & Ravasan 2012, p. 228)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Cost of Function	cost	'Project management recognizes three challenging and interconnected restraints which are time, scope and cost goals (Schwalbe, 2000).' (Anjum & Khan 2015, p. 629)	Management, Collection, Production, Use
Cost of Function	cost	'Because of the large amount of money spent on ERP upgrades, which can add up to 25-33 percent of the initial implementation costs for one upgrade (Ohlson, 2000), a comprehensive understanding of ERP upgrade concepts and their challenges is necessary to prevent project failures (Olson and Zhao, 2006).' (Barth & Koch 2019, p. 657)	Management, Collection, Production, Use
Cost of Function	cost	'According to a large-scale European multi-country survey the most important factor is the best fit with current business processes, respectively, organization (Hong and Kim, 2002; Ngai et al., 2008), followed by flexibility, cost, user-friendliness, scalability and vendor support (van Everdingen et al., 2000).' (Barth & Koch 2019, p. 659)	Management, Collection, Production, Use
Cost of Function	cost	'Finally, at the end of any ERP implementation project, it is necessary to evaluate its success, focusing on measurable project management metrics like completion dates, costs and target achievement, and the production system, including metrics like performance or reliability (Nah, Lau and Kuang, 2001; Ross and Vitale, 2000).' (Barth & Koch 2019, p. 659)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Cost of Function	cost	'Chen et al. (2009) name maintenance and support as essential elements in the management of ERP systems, and show that the establishment of appropriate governance structures is necessary, also because costs for maintenance can come up to annually about 25 percent of implementation costs (Granebring and Revay, 2005).' (Barth & Koch 2019, p. 659)	Production
Cost of Function	cost	'This is also emphasized by Koch and Mitteregger (2016), who have shown that amount of customization during implementation affects support costs in maintenance, similar to Light (2001).' (Barth & Koch 2019, p. 659)	Production
Cost of Function	cost	'Upgrade activities are getting more attention in ERP-using organizations, especially as on average an organization has to execute an ERP upgrade every three years (Olson and Zhao, 2006), and costs reach between 25 and 33 percent of initial implementation costs.' (Barth & Koch 2019, p. 660)	Management, Collection, Production, Use
Cost of Function	cost	'As an ERP system has to be upgraded several times during its life cycle, the upgrading costs will exceed the implementation costs eventually.' (Barth & Koch 2019, p. 660)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Cost of Function	cost	'As guidelines for such a project, the authors provide in addition to a focus on added value rather than cost reduction, most importantly de-individualization.' (Barth & Koch 2019, p. 660)	Management, Collection, Production, Use
Cost of Function	cost	'Each new functionality has to be discussed in detail and benefits have to be weighed against the costs in order to find the best solution for the company." A special focus was often put on the project manager.' (Barth & Koch 2019, p. 664)	Management, Collection, Production, Use
Cost of Function	cost	'(10) Top management support: ERP upgrade projects not only cause huge costs but often also implicate considerable organizational and technical change.' (Barth & Koch 2019, p. 667)	Management, Collection, Production, Use
Cost of Function	cost	'As a result of the high complexity of such projects, financial forecasts are often not met and costs exceed the planned budget.' (Barth & Koch 2019, p. 667)	Management, Collection, Production, Use
Cost of Function	cost	'However, not only because of complexity but also because of high costs, a failed ERP upgrade project can have serious negative consequences.' (Barth & Koch 2019, p. 669)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Cost of Function	cost	'Despite numerous implementation challenges and high implementation costs, ERP systems have become popular, and both small and large companies implement ERP systems in order to remain competitive.' (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1254)	Management, Collection, Production, Use
Cost of Function	cost	'The expected benefits of system quality include cost reduction, enhanced performance and improved efficiency [67].' (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1257)	Management, Collection, Production, Use
Cost of Function	cost	'Information quality can help organizations choose different supply resources, hence, produce with lower costs and, therefore, develop competitive advantages, while increasing their competitiveness and internal efficiency.' (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1260)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Cost of Function	cost	'Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.' (Finney & Corbett 2007, p. 340)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Cost of Function	cost	'Developing software systems is an expensive, and often a difficult process as software development projects are affected by a series of problems, such as poor project management, cost and schedule overruns, poor quality software and under-motivated developers.' (Garg, P & Garg, A 2013, p. 500)	Management, Collection, Production, Use
Cost of Function	cost	'BPR can be defined as the fundamental rethinking and radical redesign of business process to achieve dramatic improvement in critical, contemporary measures of performance, such as cost, quality, service and speed approaches (Hammer and Champy, 1993; Koch, 2001; Huang et al., 2004).' (Garg, P & Chauhan 2015, p. 1318)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Cost of Function	cost	'Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) • Communication within the company • Organization resistance • Project budget • Project management • Implementation strategy • Strategic goals and objectives • Business process reengineering • organizational culture • knowledge base of the company • Project planning and control • Facilitating conditions • Organization size • The vision of the organization • Readiness of organizations • Clarity of potential cost • User involvement • Selection of vendor/consult ant • Project team • Top management support • Training of user • Trust on vendor • Performance expectancy • Effort expectancy • Social influence • Age • Gender • Highest degree attained • Selection of ERP package • IT infrastructure • Data integrity and system testing.' (Huang et al. 2021, p. 4686)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Cost of Function	cost	'The management in such organizations faced up with such a high resistance from the systems users that they were even unable to implement the other modules of the system for which their management already paid for the huge sum of money, which cause the enterprises with financial losses to a great extent and hence the project was declared unsuccessful in the end due to both the cost as well as time overruns.' (Khattak et al. 2013, p. 59)	Management, Collection, Production, Use
Cost of Function	cost	'Implementing ERPs successfully however is problematic, costly and complex, and often shows high failure rates or even abandonment due to lack of fit with the business or social culture.' (Rabaa'i & AlJamal 2015, p. 85)	Management, Collection, Production, Use
Cost of Function	cost	'Ownership of an Enterprise System is a risky and 'high cost proposition' involving numerous indirect as well as direct costs (Umble, Haft and Umble, 2003).' (Rabaa'i & AlJamal 2015, p. 86)	Management, Collection, Production, Use
Cost of Function	cost	'Such difficulties can be more than pain or inconvenience: reports consistently note that the majority of ERP implementations fail, with cost and schedule overruns, non-realisation of benefits, failure to recoup costs, and satisfaction below 50dimensions (Krigsman, 2013).' (Rabaa'i & AlJamal 2015, p. 86)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Cost of Function	cost	'There was also a significant difference in the regularity of cost reviews, with almost 50disagreeing that "the project's costs were reviewed regularly" compared to around only 6(Rabaa'i & AlJamal 2015, p. 95)	Management, Collection, Production, Use
Cost of Function	cost	'Other studies indicates that 35implementations are cancelled, with the remaining 65cost and time overruns averaging 178(Ravasan & Mansouri 2014, p. 34)	Management, Collection, Production, Use
Cost of Function	cost	'Later on, Gargeya and Brady (2005) classified ERP failure implementation in two levels of 1) complete failure: the project is cancelled before full implementation or is omitted from operation and 2) partial failure: increased implementation costs and time over the estimated, inadequate return on investment (ROI) or user satisfaction and so on.' (Ravasan & Mansouri 2014, p. 35)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Cost of Function	cost	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Data Analysis & Conversion	data analysis and conversion	'They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.' (Ali & Miller 2017, p. 674)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Data Analysis & Conversion	data analysis and conversion	'Related Sub- Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Data Analysis & Conversion	data conversion	'Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.' (Finney & Corbett 2007, p. 340)	Production
Data Analysis & Conversion	data conversion	'ERP implementation success is highly dependent on success of data conversion and accuracy.' (Garg, P & Garg, A 2014, p. 440)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Data Analysis & Conversion	data conversion	'in Indian retail sector (2) The "Technological" factor in this study is defined by Implementation strategy, Adequate IT infrastructure, Minimal customization and Data conversion and accuracy items which may affect the success of ERP implementation in Indian retail sector.' (Garg, P & Chauhan 2015, p. 1331)	Production
Data Analysis & Conversion	data conversion	'ERP implementation success is highly dependent on success of data conversion and accuracy.' (Garg, P & Chauhan 2015, p. 1331)	Production
Data Analysis & Conversion	data conversion	'Moreover, end-users involvement is helpful in the ERP configuration analysis and in data conversion as well as in system testing.' (Osman & Sahraoui 2019, p. 38)	Production
Data Analysis & Conversion	data conversion	'Moreover, key aspects like data conversion, integration and analysis provided by ERP applications are pointed out by end-users.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 69)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Data Analysis & Conversion	data integrity	'Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) • Communication within the company • Organization resistance • Project budget • Project management • Implementation strategy • Strategic goals and objectives • Business process reengineering • organizational culture • knowledge base of the company • Project planning and control • Facilitating conditions • Organization size • The vision of the organization • Readiness of organizations • Clarity of potential cost • User involvement • Selection of vendor/consult ant • Project team • Top management support • Training of user • Trust on vendor • Performance expectancy • Effort expectancy • Social influence • Age • Gender • Highest degree attained • Selection of ERP package • IT infrastructure • Data integrity and system testing.' (Huang et al. 2021, p. 4686)	Production
Data Analysis & Conversion	data integrity	'Certainly efficiency is desirable and several CSFs proved relevant in HES - mainly in efficient service delivery, IT support, easier access to reliable information by integrating disparate legacy systems and reengineered business processes, and data integrity.' (Rabaa'i & Gammack 2016, p. 58)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Data Analysis & Conversion	data management	'The findings of our study reveal that 'appropriate business and IT legacy systems', 'business plan/vision/goals/justification', 'business process reengineering', 'change management culture and programme', 'communication', 'ERP teamwork and composition', 'monitoring and evaluation of performance', 'project champion', 'project management', 'software/system development, testing and troubleshooting', 'top management support', 'data management', 'ERP strategy and implementation methodology', 'ERP vendor', 'organizational characteristics', 'fit between ERP and business/process', 'national culture' and 'country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.' (Ngai, Law & Wat 2008, p. 548)	Production
Data Analysis & Conversion	data management	'Data management Data management is one of the new factors not included in Nah et al. [51].' (Ngai, Law & Wat 2008, p. 555)	Production
Data Analysis & Conversion	data management	'Whereas the focus of MRP is on manufacturing processes, ERP systems look at a much broader integration of information or data management functions within the organisation.' (Rabaa'i 2009, p. 2)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Data Analysis & Conversion	data management	'ERP failure factors and categories Failure Categories Failure Factors C4: Project Management F1: Conflicts between organization and consultants/ vendor C5: Technical F2: High rate of system customization C5: Technical F3: Data management issues C2: Human Resources F4: Inadequate education and training C2: Human Resources F5: Inadequate user involvement C2: Human Resources F6: Ineffective communications system C3: Organizational F7: Internal conflicts between departments C2: Human Resources F8: Inadequate change management C3: Organizational F9: Lack of performance measurement system C3: Organizational F10: Misfit between organization culture and ERP system C3: Organizational F11: Misfit between organization structure and ERP system C3: Organizational F12: Misfits between the IT and business strategies C1: Environmental F13: Environmental pressures C3: Organizational F14: Poor business process reengineering C1: Environmental F15: Poor consultant C4: Project Management F16: Poor project management C4: Project Management F17: Poor risk management C3: Organizational F18: Poor top management support C5: Technical F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...' (Ravasan & Mansouri 2014, p. 42)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Data Analysis & Conversion	data management	'Accordingly, Data Management is critical in ERP package selection and implementation (Soh et al., 2000; Ahituv et al., 2002).' (Saygili, Ozturkoglu & Kocakulah 2017, p. 69)	Production
Data Analysis & Conversion	data quality	'Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) identify several other attributes associated with implementation failures, including approaching ERP implementation from an excessively functional perspective, inappropriately cutting the scope of the project, eliminating user training, inadequate testing, not improving business processes initially, underestimating data quality problems, fragile human capital, and data migration problems.' (Ali & Miller 2017, p. 680)	Production
Data Analysis & Conversion	data quality	'They identify causes of ERP implementation failure as excessive customisation, dilemma of internal integration, poor understanding of business implications and requirements, lack of change management strategy, poor data quality, misalignment of IT with business, hidden costs, limited training, and lack of top management support.' (Ali & Miller 2017, p. 681)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Data Analysis & Conversion	data quality	'Data quality and accuracy is a major determinant of ERP success widely cited in the literature [9,14,19,36,66,87,92].' (Amid, Moalagh & Ravasan 2012, p. 233)	Production
Data Analysis & Conversion	data quality	'Work practices, poor data quality, BPR activities, customization of the ERP system, internal staff adequacy, training, top management support, quality of consultants are the main problems (Genoulaz & Millet, 2006).' (Basoglu, Daim & Kerimoglu 2007, p. 89)	Production
Data Analysis & Conversion	data quality	'To overcome this misfit, companies can establish a framework that takes the primary failures of poor leadership, poor project management, poor data quality, poor training, and users' resistance into consideration.' (Shaul & Tauber 2013, p. 18)	Production
Data Analysis & Conversion	data quality	'Thus, identifying data quality requirements is imperative since problems in ERP implementation can arise from a lack of forethought about data quality.' (Shaul & Tauber 2013, p. 19)	Production
Data Analysis & Conversion	data quality	'Fourth, deploy supporting tools to control the data quality process by monitoring all dimensions, that is, amount, accuracy, timeliness, completeness, consistency, accessibility, and multiple sources of the same data.' (Shaul & Tauber 2013, p. 19)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Data Input	data input	'The project ERP system modules are normally associated with one another, erroneous data input into one component, module will negatively influence the functioning of another module (Sum et al., 1997; Markus and Tanis, 2000).' (Anjum & Khan 2015, p. 629)	Collection
Data Input	data input	'Since ERP system modules are intricately linked to one another, incorrect data input into one module will adversely affect the functioning of other modules.' (Garg, P & Agarwal 2014, p. 405)	Collection
Data Input	data input	'The project ERP systems modules are intricately linked to one another, inaccurate data input into one module will adversely affect the functioning of other module (Sum et al., 1997; Markus and Tanis, 2000).' (Garg, P & Chauhan 2015, p. 1319)	Collection

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	education	'They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.' (Ali & Miller 2017, p. 674)	Management, Collection, Production, Use
Education & Training	education	'CSFs identified for successful implementation are: a clear understanding of strategic goals, top management commitment and support, organisational change management strategy, good implementation team, data accuracy, extensive education and training, focussed performance measures, and multi-site issues.' (Ali & Miller 2017, p. 675)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	education	'Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline Organisational resistance Lack of organisational commitment Poor data accuracy Limited user involvement Mismatch between organisation requirements and functionalities offered Lack of readiness for integration Lack of focus on user education and training Excessive customisation Inadequate organisational analysis Costs Project duration Technical challenges Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.' (Ali & Miller 2017, p. 681)	Management, Collection, Production, Use
Education & Training	education	'In this study, the dimension of "end- users" includes three factors (user involvement, training and education, employee skills).' (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1256)	Collection, Use
Education & Training	education	'As expected, education, organizational culture, and communication problems come to the fore in large-scale companies, while financial problems come to the fore in small-scale companies.' (Coşkun et al. 2022, p. 16)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	education	'Management of communication, education and expectations are critical throughout the organization (Wee, 2000).' (Garg, P & Garg, A 2014, p. 434)	Management, Collection, Production, Use
Education & Training	education	'F3 Quality (adequacy) and quantity of training and education of personnel/ system users Nelson & Cheney, 1987; Umble et al.,2003; Bradford & Florin, 2003; Bradley & Lee, 2007; Somers & Nelson, 2001; Zhang et al.,2002; Bhatti, 2005; AlMashari et al.,2006; Yuanqiang et al.,2009; Noudoostbeni & Norizan, 2009; Kumar et al.,2010; Woo,2007; Almahdi et al.,2008; Anjum & Rehman,2010; Garg, 2010; Upadhyay & Dan,2008; Nah et al.,2001; Jafari et al.,2006; Ranzhe & Qiu,2007; Zarei & Naeli, 2010); Hanafizadeh et al., 2010; Lai,2006; Muscatello & Chen, 2008.' (Khattak et al. 2013, p. 47)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	education	'The research concludes that: (1) Quality (adequacy) and quantity of training and education of personnel/users, role and effectiveness of management in reducing the users' resistance, use of steering committee for control purpose, top management support or involvement, clearly specified goals/objectives/scope regarding ERP system, ease of system's use and users' acceptance, vendor's support, project management, effective communication among the organizational members and a balanced team for ERP implementation are practically considered by the successful enterprises in China while planning and going for the implementation of the ERP system and are thus critical for the success of ERP systems implementation projects, ignoring of which may cause implementation failure in the Chinese organizations; (2) Some of the factors deemed imperative for ERP systems implementation success in the literature like; selection of a right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role of consultant, change management strategy and programs, competency in use of IT and IT infrastructure, business...' (Khattak et al. 2013, p. 68)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	education	'According to the literature, the most studied factors were: Top Management Support, Effective Communication, Training, and Education, Business plan and vision, Project Management, BPR management, Change Management, Project team Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation, Technological Infrastructure, Legacy systems consideration.' (Mahraz, Benabbou & Berrado 2020, p. 112)	Management, Collection, Production, Use
Education & Training	education	'The factors identified were management and leadership, visioning and planning, ERP package selection, communication process management, training and education, project management, legacy systems management, system integration, system testing, cultural and structural changes, and performance evaluation and management.' (Rabaa'i 2009, p. 6)	Management, Collection, Production, Use
Education & Training	education	'They are the few key areas where things must go right. . . " An earlier paper by this team (Ram, Corkindale and Wu, 2013) tabulated the relationships found in the literature between CSFs and implementation or performance output success to identify four factors consistently emerging as central, namely project management, training and education, business process re-engineering and system integration.' (Rabaa'i & AlJamal 2015, p. 87)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	education	'Low ease of use could be due to the complexity and unfamiliarity of the interfaces, ineffective end-user education and training, inadequate user involvement and participation in the implementation, or simply user rejection of the technology.' (Rabaa'i & AlJamal 2015, p. 97)	Management, Collection, Production, Use
Education & Training	education	'Cultures that have successfully adopted ERPs recognise the importance of adequate education and training for end- users in using the new system (Bajwa, Garcia and Mooney, 2004).' (Rabaa'i & AlJamal 2015, p. 97)	Management, Collection, Production, Use
Education & Training	education	'One of the first articles that has been published about analyzing ERP failures returned to Umble and Umble (2002) in which they mentioned that lack of education, BPR, project management, top management support and unrealistic expectations of users could lead companies to fail.' (Ravasan & Mansouri 2014, p. 35)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	education	'ERP failure factors and categories Failure Categories Failure Factors C4: Project Management F1: Conflicts between organization and consultants/ vendor C5: Technical F2: High rate of system customization C5: Technical F3: Data management issues C2: Human Resources F4: Inadequate education and training C2: Human Resources F5: Inadequate user involvement C2: Human Resources F6: Ineffective communications system C3: Organizational F7: Internal conflicts between departments C2: Human Resources F8: Inadequate change management C3: Organizational F9: Lack of performance measurement system C3: Organizational F10: Misfit between organization culture and ERP system C3: Organizational F11: Misfit between organization structure and ERP system C3: Organizational F12: Misfits between the IT and business strategies C1: Environmental F13: Environmental pressures C3: Organizational F14: Poor business process reengineering C1: Environmental F15: Poor consultant C4: Project Management F16: Poor project management C4: Project Management F17: Poor risk management C3: Organizational F18: Poor top management support C5: Technical F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...' (Ravasan & Mansouri 2014, p. 42)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	education	'Critical success factors identified in Turkish studies Author (s) Critical Success Factors Baskak& Cetisli (2003) Top management support, business plan and vision, ERP teamwork, ERP package selection, change management, user training and education, effective communication, project management, data integration, software testing and troubleshooting, appropriate legacy systems, monitoring and evaluation of performance.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 62)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	education	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	education	'Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	education	'According to the regression analysis on the successful implementation of SCMIS, as shown in Table 8, factors that have significant impact at 5 per cent or higher level include top management support, user support and involvement, training and education, change management, pre-implementation analysis, communication and data Table 7.' (Seth, Goyal & Kiran 2015, p. 256)	Management, Collection, Production, Use
Education & Training	training	'They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.' (Ali & Miller 2017, p. 674)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	training	'CSFs identified for successful implementation are: a clear understanding of strategic goals, top management commitment and support, organisational change management strategy, good implementation team, data accuracy, extensive education and training, focussed performance measures, and multi-site issues.' (Ali & Miller 2017, p. 675)	Management, Collection, Production, Use
Education & Training	training	'Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) identify several other attributes associated with implementation failures, including approaching ERP implementation from an excessively functional perspective, inappropriately cutting the scope of the project, eliminating user training, inadequate testing, not improving business processes initially, underestimating data quality problems, fragile human capital, and data migration problems.' (Ali & Miller 2017, p. 680)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	training	'They identify causes of ERP implementation failure as excessive customisation, dilemma of internal integration, poor understanding of business implications and requirements, lack of change management strategy, poor data quality, misalignment of IT with business, hidden costs, limited training, and lack of top management support.' (Ali & Miller 2017, p. 681)	Management, Collection, Production, Use
Education & Training	training	'Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline Organisational resistance Lack of organisational commitment Poor data accuracy Limited user involvement Mismatch between organisation requirements and functionalities offered Lack of readiness for integration Lack of focus on user education and training Excessive customisation Inadequate organisational analysis Costs Project duration Technical challenges Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.' (Ali & Miller 2017, p. 681)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	training	'The most common causes of ERP implementation failures are a combination of poor planning and high software customisation (Scheer and Habbermann, 2000), lack of top management commitment; ineffective communication; insufficient training; lack of user support, poor project management, relying on legacy systems, inter-departmental conflicts, poor composition of project teams, failure in redesigning business processes and, lack of clarity about required changes.' (Ali & Miller 2017, p. 682)	Management, Collection, Production, Use
Education & Training	training	'Work practices, poor data quality, BPR activities, customization of the ERP system, internal staff adequacy, training, top management support, quality of consultants are the main problems (Genoulaz & Millet, 2006).' (Basoglu, Daim & Kerimoglu 2007, p. 89)	Management, Collection, Production, Use
Education & Training	training	'In this study, the dimension of "end- users" includes three factors (user involvement, training and education, employee skills).' (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1256)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	training	'Lack of management support, poor organizational culture, communication problems, financial management problems, lack of clarity on scope, project management problems, poor project team, ERP software misfit, poor solution implementer performance, poor quality of testing, outdated it infrastructure, lack of training, highly customized ERP, poor process design, lack of user involvement, resistance to change, unrealistic expectations are the main failure factors that need to be analyzed in detail.' (Coşkun et al. 2022, p. 3)	Management, Collection, Production, Use
Education & Training	training	'Therefore, it involves not only the planning stages, but also the allocating of responsibilities to various players, the definition of milestones and critical paths, training and human resource planning, and finally the determination of measures of success (Nah et al., 2001).' (Finney & Corbett 2007, p. 336)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	training	'Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.' (Finney & Corbett 2007, p. 340)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	training	'Consultants who are not able to demonstrate a mastery of professional communication skills, good language capability, industrial knowledge, and business analytical skills, are not able to provide expertise concerning project planning, ERP systems and BPR during ERP implementation and hence cannot act as change agents and fill the knowledge gaps (Ngai et al., 2008; Stebel, 1992; Ganesh and Mehta, 2010; Nah and Lau, 2001) (for example, communicating with project team members and users for acquiring business requirements, conducting BPR and delivering professional training).' (Garg, P & Garg, A 2013, p. 499)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	training	'Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) • Communication within the company • Organization resistance • Project budget • Project management • Implementation strategy • Strategic goals and objectives • Business process reengineering • organizational culture • knowledge base of the company • Project planning and control • Facilitating conditions • Organization size • The vision of the organization • Readiness of organizations • Clarity of potential cost • User involvement • Selection of vendor/consult ant • Project team • Top management support • Training of user • Trust on vendor • Performance expectancy • Effort expectancy • Social influence • Age • Gender • Highest degree attained • Selection of ERP package • IT infrastructure • Data integrity and system testing.' (Huang et al. 2021, p. 4686)	Management, Collection, Production, Use
Education & Training	training	'P3: The quality (adequacy) and quantity of training and education of personnel/users are positively related to successful implementation of ERP project.' (Khattak et al. 2013, p. 46)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	training	'The research concludes that: (1) Quality (adequacy) and quantity of training and education of personnel/users, role and effectiveness of management in reducing the users' resistance, use of steering committee for control purpose, top management support or involvement, clearly specified goals/objectives/scope regarding ERP system, ease of system's use and users' acceptance, vendor's support, project management, effective communication among the organizational members and a balanced team for ERP implementation are practically considered by the successful enterprises in China while planning and going for the implementation of the ERP system and are thus critical for the success of ERP systems implementation projects, ignoring of which may cause implementation failure in the Chinese organizations; (2) Some of the factors deemed imperative for ERP systems implementation success in the literature like; selection of a right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role of consultant, change management strategy and programs, competency in use of IT and IT infrastructure, business...' (Khattak et al. 2013, p. 68)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	training	'According to the literature, the most studied factors were: Top Management Support, Effective Communication, Training, and Education, Business plan and vision, Project Management, BPR management, Change Management, Project team Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation, Technological Infrastructure, Legacy systems consideration.' (Mahraz, Benabbou & Berrado 2020, p. 112)	Management, Collection, Production, Use
Education & Training	training	'The factors identified were management and leadership, visioning and planning, ERP package selection, communication process management, training and education, project management, legacy systems management, system integration, system testing, cultural and structural changes, and performance evaluation and management.' (Rabaa'i 2009, p. 6)	Management, Collection, Production, Use
Education & Training	training	'Disruption to staff and resistance to received 'best practices', together with required training, data mapping, customisations and their support, complexity of integration with remaining legacy systems are all commonly reported, and are often ongoing issues post-implementation.' (Rabaa'i & AlJamal 2015, p. 86)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	training	'They are the few key areas where things must go right. . . " An earlier paper by this team (Ram, Corkindale and Wu, 2013) tabulated the relationships found in the literature between CSFs and implementation or performance output success to identify four factors consistently emerging as central, namely project management, training and education, business process re-engineering and system integration.' (Rabaa'i & AlJamal 2015, p. 87)	Management, Collection, Production, Use
Education & Training	training	'Lack of benefit realisation is not simply attributable to technical or managerial aspects however, since most items specifically addressing required training, change and team composition largely showed that these aspects were adequately understood and implemented.' (Rabaa'i & AlJamal 2015, p. 97)	Management, Collection, Production, Use
Education & Training	training	'Low ease of use could be due to the complexity and unfamiliarity of the interfaces, ineffective end-user education and training, inadequate user involvement and participation in the implementation, or simply user rejection of the technology.' (Rabaa'i & AlJamal 2015, p. 97)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	training	'Cultures that have successfully adopted ERPs recognise the importance of adequate education and training for end-users in using the new system (Bajwa, Garcia and Mooney, 2004).' (Rabaa'i & AlJamal 2015, p. 97)	Management, Collection, Production, Use
Education & Training	training	'Arabic organisations often devalue this however, considering training end-users as an additional cost to be avoided as much as possible.' (Rabaa'i & AlJamal 2015, p. 97)	Management, Collection, Production, Use
Education & Training	training	'As a cheaper substitute to training, organisations often provide end-users with printed manuals describing the system's functionality, as happened in the majority of organisations surveyed here.' (Rabaa'i & AlJamal 2015, p. 97)	Management, Collection, Production, Use
Education & Training	training	'While the results suggested most respondents considered the training adequate, it can be argued that the failure to provide significant resources for training purposes has seen short-term gains, but ultimately end-users ignorance and 98 A.A. Rabaa'i and E. AlJamal system rejection led to long-term failure.' (Rabaa'i & AlJamal 2015, p. 97)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	training	'Further research could examine this more closely, since traditional Jordanian cultural attitudes to training and change management may not match the requirements for successful ERP uptake.' (Rabaa'i & AlJamal 2015, p. 98)	Management, Collection, Production, Use
Education & Training	training	'Disruption to staff and resistance to received "best practices", together with required training, data mapping, customizations and their support, complexity of integration with remaining legacy systems are all commonly reported, and are often ongoing issues post-implementation.' (Rabaa'i & Gammack 2016, p. 46)	Management, Collection, Production, Use
Education & Training	training	'IT staff too may have a significant learning overhead, an inadequate budget for the training required, an extra learning curve (with an ongoing dependence on consultants) significant extra work necessitated while legacy systems remain critical.' (Rabaa'i & Gammack 2016, p. 58)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	training	'ERP failure factors and categories Failure Categories Failure Factors C4: Project Management F1: Conflicts between organization and consultants/ vendor C5: Technical F2: High rate of system customization C5: Technical F3: Data management issues C2: Human Resources F4: Inadequate education and training C2: Human Resources F5: Inadequate user involvement C2: Human Resources F6: Ineffective communications system C3: Organizational F7: Internal conflicts between departments C2: Human Resources F8: Inadequate change management C3: Organizational F9: Lack of performance measurement system C3: Organizational F10: Misfit between organization culture and ERP system C3: Organizational F11: Misfit between organization structure and ERP system C3: Organizational F12: Misfits between the IT and business strategies C1: Environmental F13: Environmental pressures C3: Organizational F14: Poor business process reengineering C1: Environmental F15: Poor consultant C4: Project Management F16: Poor project management C4: Project Management F17: Poor risk management C3: Organizational F18: Poor top management support C5: Technical F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...' (Ravasan & Mansouri 2014, p. 42)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	training	'Critical success factors identified in Turkish studies Author (s) Critical Success Factors Baskak& Cetisli (2003) Top management support, business plan and vision, ERP teamwork, ERP package selection, change management, user training and education, effective communication, project management, data integration, software testing and troubleshooting, appropriate legacy systems, monitoring and evaluation of performance.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 62)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	training	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	training	'Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	training	'The proposed model confirms that following factors play a significant role during implementation of SCMIS—top management support, user involvement, pre-implementation analysis, user training, change management, data accuracy and communication.' (Seth, Goyal & Kiran 2015, p. 248)	Management, Collection, Production, Use
Education & Training	training	'According to the regression analysis on the successful implementation of SCMIS, as shown in Table 8, factors that have significant impact at 5 per cent or higher level include top management support, user support and involvement, training and education, change management, pre-implementation analysis, communication and data Table 7.' (Seth, Goyal & Kiran 2015, p. 256)	Management, Collection, Production, Use
Education & Training	training	'Note: Numbers are the beta weight and **p ¡ 0.05. confirms that these CSVs has a significant impact, and in order to have a successful implementation of SCMIS, top management support, user support and involvement, preimplementation analysis, training, change management, data accuracy and communication are critical.' (Seth, Goyal & Kiran 2015, p. 257)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Education & Training	training	'The findings also support the proposed hypothesis that training and knowledge transfer has a positive impact on SCMIS implementation success (H4b), so organization should arrange effective training for the end users of SCMIS for smooth implementation of the system.' (Seth, Goyal & Kiran 2015, p. 258)	Management, Collection, Production, Use
Education & Training	training	'To overcome this misfit, companies can establish a framework that takes the primary failures of poor leadership, poor project management, poor data quality, poor training, and users' resistance into consideration.' (Shaul & Tauber 2013, p. 18)	Management, Collection, Production, Use
Education & Training	training	'• IT infrastructure • System Training and knowledge transfer • Over-dependence on detailed and heavy customization • High turnover rate of project team members • Business process re-engineering • User's resistance to transform • ERP system misfit Considering these critical factors, specifically affecting the agricultural business sectors in Malaysia, there are a few possible suggestions proposed.' (Shukor, Sheikhi & Nashir 2020, p. 2055)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Empowered Decision-makers	empower	'This is partially supported by Maas et al. (2014), who investigate the impact of organisational control and empowerment on ERP system usage.' (Ali & Miller 2017, p. 677)	Management
Empowered Decision-makers	empower	'The authors find that empowerment strategy is positively related to increased system usage whilst an inverted-U relationship is observed for organisational control.' (Ali & Miller 2017, p. 677)	Management
Empowered Decision-makers	empower	'This concept refers to the need for the team to be empowered to make necessary decisions (Shanks and Parr, 2000; Chen, 2001) in due time, so as to allow for effective timing with respect to the implementation (Gupta, 2000).' (Finney & Corbett 2007, p. 337)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Empowered Decision-makers	empower	'Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.' (Finney & Corbett 2007, p. 340)	Management
Empowered Decision-makers	empower	'Decision maker in the project team should be empowered to make speedy and valuable decisions.' (Garg, P & Agarwal 2014, p. 409)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Empowered Decision-makers	empower	'Finally, the PM team should be empowered to manage all aspects of the project, including balancing the technical, business, and change management requirements.' (Garg, P & Agarwal 2014, p. 416)	Management
Empowered Decision-makers	empower	'The most generalized ones being, cost reduction, productivity and quality improvement, better resource management, improved decision-making and planning, and organizational empowerment (Federici, 2009; Kamhawi, 2008).' (Garg, P & Garg, A 2014, p. 425)	Management
Empowered Decision-makers	empower	'In addition, the decision maker in the project team should be empowered to make quick and effective decisions [53,54].' (Ngai, Law & Wat 2008, p. 555)	Management
Empowered Decision-makers	empower	'In order to have an effective and fast decision maker, the key member of the project team must be empowered.' (Ngai, Law & Wat 2008, p. 557)	Management
Empowered Decision-makers	empower	'Further, the project team should be empowered in decision making for continuous implementation progress.' (Osman & Sahraoui 2019, p. 37)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Empowered Decision-makers	empower	'3 Note: Other critical success factors were found in the reviewed articles, such as: system testing, building a business case, and empowered decision makers.' (Rabaa'i 2009, p. 7)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Empowered Decision-makers	empower	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Empowered Decision-makers	empower	'The results supported the findings of Sarker & Lee (2003) who stated that strong and committed leadership, open and honest communication, and a balanced and empowered implementation team are necessary conditions/precursors for successful ERP application.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 68)	Management
Empowered Decision-makers	empower	'In addition, the project team should be empowered to define a clear program and required resources, set realistic milestones, and ensure interdepartmental cooperation.' (Shaul & Tauber 2013, p. 19)	Management
Empowered Decision-makers	reporting level	'Therefore, the project manager's reporting level does not positively or negatively affects ERP system implementation project success and hence the literature stating the project manager's reporting relationship as imperative for the project success is not supported in the current study.' (Khattak et al. 2013, p. 53)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Empowered Decision-makers	reporting level	'... process re- engineering/customization, involvement of organizational members/users in ERP adoption/implementation and ERP strategy & implementation methodology are found as least critical i.e. some organizations in China considers these while some do not and therefore, these factors may be necessary but exclusively relying on the same may not favorably or unfavorably leads and thus can not sufficiently guarantee the ERP project implementation success; and finally (3) A managerial based issue that was supported in the past scholarly work i.e. reporting level of the project manager is not practically considered by the enterprises included in the current research and is therefore not critical at all for ERP systems implementation success in Chinese organizations.' (Khattak et al. 2013, p. 68)	Management
External Environment	economic environment	'They observe that vendor failure to adapt to local culture, BPR, managing local human resources, lack of information sharing, failure to understand cultural characteristics, lack of adaptability towards a changing business and economic environment, lack of cost control functions (i.e. adapting to changing costs), and failure to understand technical issues are the main causes of ERP implementation failure.' (Ali & Miller 2017, p. 681)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
External Environment	economic environment	'One of the most probable reasons among others may be diversity of the samples that are targeted in different regions and countries, which may have different national or organizational cultures, government laws or regulations and level of economic environments.' (Khattak et al. 2013, p. 46)	Management
External Environment	economic environment	'Cultures, government regulations, and economic environments differ among countries, a fact that raises some issues and challenges for ERP implementation [30,42,64].' (Ngai, Law & Wat 2008, p. 549)	Management
External Environment	external environment	'The introduction of change management processes is an important requirement in the modern era especially when the organizations are facing several business related challenges due to the continuous changes in the external environmental factors (Saharia and Tucker, 2008).' (Bazhair & Sandhu 2015, p. 51)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
IT Infrastructure	infrastructure	'Lack of management support, poor organizational culture, communication problems, financial management problems, lack of clarity on scope, project management problems, poor project team, ERP software misfit, poor solution implementer performance, poor quality of testing, outdated it infrastructure, lack of training, highly customized ERP, poor process design, lack of user involvement, resistance to change, unrealistic expectations are the main failure factors that need to be analyzed in detail.' (Coşkun et al. 2022, p. 3)	Management
IT Infrastructure	infrastructure	'Special considerations during this phase might include the need to enhance the ERP interface quality (Aladwani, 2001) as well as the need to plan technology infrastructure (Mabert et al., 2003).' (Finney & Corbett 2007, p. 338)	Management
IT Infrastructure	infrastructure	'If necessary, infrastructure might need to be upgraded or revamped (Kumar et al., 2002; Palaniswamy and Frank, 2002).' (Finney & Corbett 2007, p. 338)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
IT Infrastructure	infrastructure	'Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.' (Finney & Corbett 2007, p. 340)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
IT Infrastructure	infrastructure	'These factors include, but not limited to, poor consultant effectiveness, ERP software misfit, unrealistic expectations from top management concerning the ERP systems, over-reliance on heavy customization, poor quality of Business Process Reengineering (BPR), high turnover rate of project team members, poor IT Infrastructure, functionality problems with the system, unclear concept of the nature and use of the ERP system from the users perspective, too tight project schedule, lack of formal communication, part-time dedication, etc.' (Garg, P & Garg, A 2013, p. 498)	Management
IT Infrastructure	infrastructure	'There should be an adequate IT infrastructure, hardware and networking are crucial for an ERP system's success.' (Garg, P & Garg, A 2014, p. 432)	Management
IT Infrastructure	infrastructure	'in Indian retail sector (2) The "Technological" factor in this study is defined by Implementation strategy, Adequate IT infrastructure, Minimal customization and Data conversion and accuracy items which may affect the success of ERP implementation in Indian retail sector.' (Garg, P & Chauhan 2015, p. 1331)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
IT Infrastructure	infrastructure	'Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) • Communication within the company • Organization resistance • Project budget • Project management • Implementation strategy • Strategic goals and objectives • Business process reengineering • organizational culture • knowledge base of the company • Project planning and control • Facilitating conditions • Organization size • The vision of the organization • Readiness of organizations • Clarity of potential cost • User involvement • Selection of vendor/consult ant • Project team • Top management support • Training of user • Trust on vendor • Performance expectancy • Effort expectancy • Social influence • Age • Gender • Highest degree attained • Selection of ERP package • IT infrastructure • Data integrity and system testing.' (Huang et al. 2021, p. 4686)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
IT Infrastructure	infrastructure	'The main reasons among many others as to why the Chinese enterprises faced the kind of challenges include data maintenance and integration problems, system integration problems (Lai, 2006), the involvement of knowledgeable consultants in respective projects, selection of reputable vendors, low implementation experience, weak or unsophisticated IT infrastructure, lack of access to knowledge and human resource etc., to name some of few.' (Khattak et al. 2013, p. 43)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
IT Infrastructure	infrastructure	'The research concludes that: (1) Quality (adequacy) and quantity of training and education of personnel/users, role and effectiveness of management in reducing the users' resistance, use of steering committee for control purpose, top management support or involvement, clearly specified goals/objectives/scope regarding ERP system, ease of system's use and users' acceptance, vendor's support, project management, effective communication among the organizational members and a balanced team for ERP implementation are practically considered by the successful enterprises in China while planning and going for the implementation of the ERP system and are thus critical for the success of ERP systems implementation projects, ignoring of which may cause implementation failure in the Chinese organizations; (2) Some of the factors deemed imperative for ERP systems implementation success in the literature like; selection of a right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role of consultant, change management strategy and programs, competency in use of IT and IT infrastructure, business...' (Khattak et al. 2013, p. 68)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
IT Infrastructure	infrastructure	'According to the literature, the most studied factors were: Top Management Support, Effective Communication, Training, and Education, Business plan and vision, Project Management, BPR management, Change Management, Project team Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation, Technological Infrastructure, Legacy systems consideration.' (Mahraz, Benabbou & Berrado 2020, p. 112)	Management
IT Infrastructure	infrastructure	'In addition to the flexibility that they prefer to retain, Chinese leaders are less willing to invest in the longterm development of company infrastructure such as in technology adoption, internal human resources, and processes since they are thrifty, and focus on short-term profit maximization [15].' (Ngai, Law & Wat 2008, p. 558)	Management
IT Infrastructure	infrastructure	'Across various developing countries, Huang and Palvia (2001) identified many factors of national and organisational culture affecting ERP implementation including economic status and growth, infrastructure, government regulation, low IT maturity, small firm size, and lack of process management and BPR experience.' (Rabaa'i & AlJamal 2015, p. 88)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
IT Infrastructure	infrastructure	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
IT Infrastructure	infrastructure	'Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
IT Infrastructure	infrastructure	'Study by Lu, Huang and Heng (2006) reveals seven CSFs for the IOS, namely, intensive stimulation, shared vision, crossorganizational implementation team, high integration with internal information systems, inter-organizational BPR, advanced legacy information system and infrastructure and shared industry standard.' (Seth, Goyal & Kiran 2015, p. 251)	Management
IT Infrastructure	infrastructure	'• IT infrastructure • System Training and knowledge transfer • Over-dependence on detailed and heavy customization • High turnover rate of project team members • Business process re-engineering • User's resistance to transform • ERP system misfit Considering these critical factors, specifically affecting the agricultural business sectors in Malaysia, there are a few possible suggestions proposed.' (Shukor, Sheikhi & Nashir 2020, p. 2055)	Management
IT Infrastructure	network	'This unique network architecture provides expert care to our patients and a level of confidence in receiving the latest medicine has to offer.' (Garg, P & Agarwal 2014, p. 407)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
IT Infrastructure	network	'The most widely cited CSFs were found to be: security, project management, communication, compliance, network and the reaction of organization.' (Huang et al. 2021, p. 4685)	Management
IT Infrastructure	network	'Discussion From the systematic literature review conducted into Cloud ERP implementation, we found that the top five most widely cited CSFs for the successful implementation of Cloud ERP are: security, project management, communication, compliance, and network.' (Huang et al. 2021, p. 4689)	Management
IT Infrastructure	network	'The technical factors that are critical to organizations in their adoption decision of Internet-based inter-organizational information systems (IBIS) was also studied by Soliman and Janz (2004) and Bouchbout and Alimazighi (2008) and suggested establishing costs, network reliability, data security, scalability and complexity as main factors that significantly affect the adoption decision of IBIS.' (Seth, Goyal & Kiran 2015, p. 252)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Knowledge Transfer	knowledge transfer	'Other factors found to affect the effectiveness of ERP system implementation, includes external consultant support, knowledge transfer, and the technical aspects knowledge transfers, all of which are essential during an implementation process.' (Ali & Miller 2017, p. 673)	Production
Knowledge Transfer	knowledge transfer	'This resulted in the team members being overloaded which resulted in a high staff turnover rate, ineffective knowledge transfer, and political problems occurred which hindered the implementation process.' (Coşkun et al. 2022, p. 14)	Production
Knowledge Transfer	knowledge transfer	'However, as part of this relationship, it is imperative to arrange for knowledge transfer from the consultant to the company (Al-Mashari et al., 2003) so as to decrease the dependency on the vendor/consultant (Skok and Legge, 2002).' (Finney & Corbett 2007, p. 338)	Production
Knowledge Transfer	knowledge transfer	'The findings also support the proposed hypothesis that training and knowledge transfer has a positive impact on SCMIS implementation success (H4b), so organization should arrange effective training for the end users of SCMIS for smooth implementation of the system.' (Seth, Goyal & Kiran 2015, p. 258)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Knowledge Transfer	knowledge transfer	'• IT infrastructure • System Training and knowledge transfer • Over-dependence on detailed and heavy customization • High turnover rate of project team members • Business process re- engineering • User's resistance to transform • ERP system misfit Considering these critical factors, specifically affecting the agricultural business sectors in Malaysia, there are a few possible suggestions proposed.' (Shukor, Sheikhi & Nashir 2020, p. 2055)	Production
Leadership	leadership	'Among the factors influencing ERP system acceptance, Elkhani et al. (2014) find transformational leadership and self-efficacy influence the perceived usefulness of the system.' (Ali & Miller 2017, p. 680)	Management
Leadership	leadership	'In addition, transformation leadership also influences the perceived ease of use via incorporating self-efficacy measures.' (Ali & Miller 2017, p. 680)	Management
Leadership	leadership	'The respondents from the survey showed that the overarching issue is that of leadership and the role it has to play in driving the creation of ICT-enabled value and competitiveness.' (Chan 2013, p. 107)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Leadership	leadership	'Effective leadership is needed in order to achieve the desirable goals [35].' (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1255)	Management
Leadership	leadership	'Sarker and Lee (2003) empirically proved that strong and committed leadership at the top management level is essential to the success of an ERP implementation.' (Finney & Corbett 2007, p. 335)	Management
Leadership	leadership	'Social capital theory is used for the Cloud ERP context because it suggests that the support and commitment from the responsible leadership is crucial to set the environment in the organization.' (Huang et al. 2021, p. 4690)	Management
Leadership	leadership	'Top management support is important for providing leadership and allocating resources for such large, complex and expensive projects.' (Khattak et al. 2013, p. 65)	Management
Leadership	leadership	'Project team: consultant, leadership and champion The ERP team should consist of the best people in the organization.' (Osman & Sahraoui 2019, p. 37)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Leadership	leadership	'Therefore, the consultant should have multiple skills covering functional, technical issues and in-depth knowledge of the software[17]- [19] Additionally, project manager appointed should be experienced, mix of business and IT knowledge, strong leadership skills and have adequate authority to manage all aspects of the project.' (Osman & Sahraoui 2019, p. 37)	Management
Leadership	leadership	'Top management This concept is referred to the need of having committed leadership at the top management level, Successful ERP implementation very much depends upon active and persistent top management involvement, and the importance of top management support in each step in all company levels is crucial[20].' (Osman & Sahraoui 2019, p. 37)	Management
Leadership	leadership	'They should also be able to anticipate glitches that might occur; this naturally puts a great demand on their knowledge regarding ERP systems and the implementation process strategic planning and leadership but also of technical expertise.' (Osman & Sahraoui 2019, p. 37)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Leadership	leadership	'The factors identified were management and leadership, visioning and planning, ERP package selection, communication process management, training and education, project management, legacy systems management, system integration, system testing, cultural and structural changes, and performance evaluation and management.' (Rabaa'i 2009, p. 6)	Management
Leadership	leadership	'Additionally, Sarker and Lee (2003) empirically proved that strong and committed leadership at the top management level is essential to the success of an ERP implementation.' (Rabaa'i 2009, p. 7)	Management
Leadership	leadership	'Glaser (1999) claimed that senior management must demonstrate their commitment by showing strong leadership, limiting the initial scope of the project, and working towards achieving an early success.' (Rabaa'i 2009, p. 7)	Management
Leadership	leadership	'However, the author posited that the main reason for an ERP implementation failure stems from a lack of understanding of the project and an inability to provide guidance and adequate leadership to project team members.' (Rabaa'i 2009, p. 8)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Leadership	leadership	'Harris shows the prescience of Musselin's (2005) analysis of an agenda that "weakens deliberative bodies and collegial decision making" in favour of developing executive leadership.' (Rabaa'i & Gammack 2016, p. 49)	Management
Leadership	leadership	'Additionally, Sarker and Lee (2003) empirically proved that strong and committed leadership at the top management level is essential to the success of an ERP implementation.' (Rabaa'i & Gammack 2016, p. 50)	Management
Leadership	leadership	'However, the author posited that the main reason for an ERP implementation failure stems from a lack of understanding of the project and an inability to provide guidance and adequate leadership to project team members.' (Rabaa'i & Gammack 2016, p. 52)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Leadership	leadership	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Leadership	leadership	'Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Leadership	leadership	'The sub-factors represent the fundamental management functions introduced by Draft (1991) planning (implementation strategies, project management), organizing (business process reengineering, management of expectations, project team competence and composition) and leading (leadership of project team, employee / team morale and motivation).' (Saygili, Ozturkoglu & Kocakulah 2017, p. 68)	Management
Leadership	leadership	'The results supported the findings of Sarker & Lee (2003) who stated that strong and committed leadership, open and honest communication, and a balanced and empowered implementation team are necessary conditions/precursors for successful ERP application.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 68)	Management
Leadership	leadership	'Accordingly, only strong and committed leadership can be empirically established as a necessary condition.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 68)	Management
Leadership	leadership	'Have a leader in the project team with strong leadership skills as well as business, technical and personal managerial competencies.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 74)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Leadership	leadership	'Have a project champion who performs the crucial functions like leadership, facilitation, and marketing the project to the users.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 75)	Management
Leadership	leadership	'Studies have been conducted on the need of having a project leader (Bradley, 2008; Ngai et al., 2008), who should possess strong leadership skills (Mandal & Gunasekaran, 2003) as well as business, technical and personal managerial competencies (Kraemmergaard & Rose, 2002).' (Seth, Goyal & Kiran 2015, p. 252)	Management
Leadership	leadership	'Moreover, ERP projects fail due to errors in managing the following dimensions: leadership (42(272006].' (Shaul & Tauber 2013, p. 2)	Management
Leadership	leadership	'To overcome this misfit, companies can establish a framework that takes the primary failures of poor leadership, poor project management, poor data quality, poor training, and users' resistance into consideration.' (Shaul & Tauber 2013, p. 18)	Management
Leadership	leadership	'A lack of leadership can jeopardize implementation considerably since it negatively influences the roles and activities of other stakeholders [Ngai et al. 2008].' (Shaul & Tauber 2013, p. 19)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Leadership	leadership	'Ettlie et al. [2005] argued, based on social learning theory, that leadership through exemplary action promotes the successful adoption of discontinuous change, especially when the adopting firm's general managers demonstrate cohesive support for a new ERP system.' (Shaul & Tauber 2013, p. 19)	Management
Leadership	leadership	'Therefore, it is crucial to appoint a senior project champion (e.g., CEO) to take on the leadership role of the ERP implementation, whose job it is to bring respected and active contributing top management promoters into the system selection decision process rather than relying on the vendor's or consultant's efforts to overcome resistance.' (Shaul & Tauber 2013, p. 19)	Management
Legacy Systems (-)	legacy systems	'ERP systems are often implemented to address issues of organisational failure in information coordination due to the application of legacy systems (Nah et al., 2003).' (Ali & Miller 2017, p. 667)	Management
Legacy Systems (-)	legacy systems	'These legacy systems usually offer ageing solutions that are difficult to maintain, and no longer meet organisational needs (Bradley, 2008).' (Ali & Miller 2017, p. 667)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Legacy Systems (-)	legacy systems	'Important CSFs identified are: ERP team work and composition, top management support, business plan and vision, effective communication, project management, project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and evaluation of performance.' (Ali & Miller 2017, p. 675)	Management
Legacy Systems (-)	legacy systems	'The factors in the order of ERP system importance are: implementation in LEs • lack of top management commitment; • ineffective communication; • insufficient training; • lack of user support; • poor project management; • relying on legacy systems; • inter-departmental conflicts; • composition of project team; • failure in redesigning business processes; and • lack of clarity about required changes.' (Ali & Miller 2017, p. 681)	Management
Legacy Systems (-)	legacy systems	'This often results in key organisational changes, especially in relation to questions of how to integrate ERP systems, what to do with legacy systems, and how organisational business processes should be revised.' (Ali & Miller 2017, p. 682)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Legacy Systems (-)	legacy systems	'Lesser, but still important CSFs are, having a good business plan, vision, having a project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and the evaluation of performance (Markus, Axline, Petrie and Tanis, 2000; Bancroft et al., 1998; Bingi et al., 1999; Nah et al., 2001; Umble et al., 2003; Ehie and Madsen, 2005; Sarkar and Lee, 2003; Umble et al., 2003; Kim et al., 2005; Motwani et al., 2005; Nah and Delgado, 2006; Maguire et al., 2010).' (Ali & Miller 2017, p. 682)	Management
Legacy Systems (-)	legacy systems	'The most common causes of ERP implementation failures are a combination of poor planning and high software customisation (Scheer and Habbermann, 2000), lack of top management commitment; ineffective communication; insufficient training; lack of user support, poor project management, relying on legacy systems, inter-departmental conflicts, poor composition of project teams, failure in redesigning business processes and, lack of clarity about required changes.' (Ali & Miller 2017, p. 682)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Legacy Systems (-)	legacy systems	'The appropriate management of IT legacy systems is a key success factor, whether it is replacement or development of interfaces (Lee et al., 2003).' (Barth & Koch 2019, p. 659)	Management
Legacy Systems (-)	legacy systems	'Further success factors for ERP implementation projects, such as the selection of a project champion, the building of a business case or the appropriate management of legacy systems were rated as not very significant for upgrade projects by the interviewees.' (Barth & Koch 2019, p. 668)	Management
Legacy Systems (-)	legacy systems	'Gyampah (2007) explained this negative relationship by the usage of legacy systems before the implementation of ERP systems, because after using legacy systems, learning a harder system is not an attractive issue for system users.' (Basoglu, Daim & Kerimoglu 2007, p. 84)	Management
Legacy Systems (-)	legacy systems	'Mabert et al. (2003) findings indicate that the most important motivations for implementing an ERP system are to replace legacy systems and to standardize systems.' (Garg, P & Garg, A 2014, p. 432)	Management
Legacy Systems (-)	legacy systems	'All users move to the new system and manual/legacy systems are discontinued.' (Garg, P & Garg, A 2014, p. 440)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Legacy Systems (-)	legacy systems	'The data residing in the legacy systems needs to be migrated to ERP system.' (Garg, P & Garg, A 2014, p. 440)	Management
Legacy Systems (-)	legacy systems	'According to the literature, the most studied factors were: Top Management Support, Effective Communication, Training, and Education, Business plan and vision, Project Management, BPR management, Change Management, Project team Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation, Technological Infrastructure, Legacy systems consideration.' (Mahraz, Benabbou & Berrado 2020, p. 112)	Management
Legacy Systems (-)	legacy systems	'Among these factors, ERP Choices, Technological Infrastructure, Legacy systems consideration are related to the technological dimension, while the other factors are more related to the organizational dimension.' (Mahraz, Benabbou & Berrado 2020, p. 112)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Legacy Systems (-)	legacy systems	'Technical requirements of the implementation may also change due to a new version of the software released which may create a temporal complexity challenges as well; Legacy systems Consideration: There must also be consideration of the current legacy system in place as this will be a good indicator of the nature and scale of potential problems.' (Mahraz, Benabbou & Berrado 2020, p. 114)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Legacy Systems (-)	legacy systems	'The findings of our study reveal that 'appropriate business and IT legacy systems', 'business plan/vision/goals/justification', 'business process reengineering', 'change management culture and programme', 'communication', 'ERP teamwork and composition', 'monitoring and evaluation of performance', 'project champion', 'project management', 'software/system development, testing and troubleshooting', 'top management support', 'data management', 'ERP strategy and implementation methodology', 'ERP vendor', 'organizational characteristics', 'fit between ERP and business/process', 'national culture' and 'country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.' (Ngai, Law & Wat 2008, p. 548)	Management
Legacy Systems (-)	legacy systems	'Appropriate business and IT legacy systems According to Holland and Light [28], 'legacy systems encapsulated the existing business processes, organization structure, culture, and information technology'.' (Ngai, Law & Wat 2008, p. 551)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Legacy Systems (-)	legacy systems	'It is necessary to evaluate the current legacy system, as greater and more complex legacy systems require more technological and organizational changes during the transitional period of ERP implementation [28,51].' (Ngai, Law & Wat 2008, p. 551)	Management
Legacy Systems (-)	legacy systems	'Nah et al. [51] pointed out that to be successful, ERP implementation efforts must overcome issues of complexity arising from business and IT legacy systems.' (Ngai, Law & Wat 2008, p. 551)	Management
Legacy Systems (-)	legacy systems	'Software may need to be developed to integrate the legacy systems and the ERP systems.' (Ngai, Law & Wat 2008, p. 556)	Management
Legacy Systems (-)	legacy systems	'Since ERP implementation involves a complex transition from legacy systems and business processes to an integrated infrastructure and common business process throughout a company, it is necessary to upgrade or revamp the poorly current IT infrastructure.' (Osman & Sahraoui 2019, p. 39)	Management
Legacy Systems (-)	legacy systems	'2 Legacy systems, in this study context, are defined as applications (often standalone) that have been built using a prior era's technology and been in the organisation for many years.' (Rabaa'i 2009, p. 1)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Legacy Systems (-)	legacy systems	'Eleven critical factors were identified, such as ERP teamwork and composition, change management program and culture, top management support, business plan and vision, business process reengineering (BPR) and minimum customisation, effective communications, project management, software development, testing and troubleshooting, monitoring and evaluating performance, project champion, and appropriate business and IT legacy systems.' (Rabaa'i 2009, p. 6)	Management
Legacy Systems (-)	legacy systems	'The factors identified were management and leadership, visioning and planning, ERP package selection, communication process management, training and education, project management, legacy systems management, system integration, system testing, cultural and structural changes, and performance evaluation and management.' (Rabaa'i 2009, p. 6)	Management
Legacy Systems (-)	legacy systems	'Their recommendation was that QUT replace its legacy systems with common integrated systems.' (Rabaa'i, Bandara & Gable 2009, p. 460)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Legacy Systems (-)	legacy systems	'Disruption to staff and resistance to received 'best practices', together with required training, data mapping, customisations and their support, complexity of integration with remaining legacy systems are all commonly reported, and are often ongoing issues post-implementation.' (Rabaa'i & AlJamal 2015, p. 86)	Management
Legacy Systems (-)	legacy systems	'Disruption to staff and resistance to received "best practices", together with required training, data mapping, customizations and their support, complexity of integration with remaining legacy systems are all commonly reported, and are often ongoing issues post-implementation.' (Rabaa'i & Gammack 2016, p. 46)	Management
Legacy Systems (-)	legacy systems	'Although classed as technology related, experience shows that business practices developed around legacy systems can cause the biggest challenge to a successful enterprise system implementation, and despite a product's configurability, they can still contain many non-modifiable functionalities that may or may not be applicable in a particular university (Yakovlev, 2001) .' (Rabaa'i & Gammack 2016, p. 57)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Legacy Systems (-)	legacy systems	'IT staff too may have a significant learning overhead, an inadequate budget for the training required, an extra learning curve (with an ongoing dependence on consultants) significant extra work necessitated while legacy systems remain critical.' (Rabaa'i & Gammack 2016, p. 58)	Management
Legacy Systems (-)	legacy systems	'Certainly efficiency is desirable and several CSFs proved relevant in HES - mainly in efficient service delivery, IT support, easier access to reliable information by integrating disparate legacy systems and reengineered business processes, and data integrity.' (Rabaa'i & Gammack 2016, p. 58)	Management
Legacy Systems (-)	legacy systems	'Critical success factors identified in Turkish studies Author (s) Critical Success Factors Baskak& Cetisli (2003) Top management support, business plan and vision, ERP teamwork, ERP package selection, change management, user training and education, effective communication, project management, data integration, software testing and troubleshooting, appropriate legacy systems, monitoring and evaluation of performance.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 62)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Legacy Systems (-)	legacy systems	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Legacy Systems (-)	legacy systems	'Develop software to integrate legacy systems and ERP systems when necessary.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 74)	Management
Legacy Systems (-)	legacy systems	'Evaluate the appropriateness of the current legacy systems.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 75)	Management
Legacy Systems (-)	legacy systems	'Fifth, some legacy systems are not replaced, and new in-house systems continue to be developed despite the fact that companies have adopted ERP solutions because of the risks and time involved in replacing these legacy systems and current processes [Tanriverdi et al. 2007].' (Shaul & Tauber 2013, p. 18)	Management
Legacy Systems (-)	legacy systems	'Second, consider data analysis decisions, activities, responsibilities, priorities, implemented processes, legacy systems, methods, and test plans.' (Shaul & Tauber 2013, p. 19)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Management Changes (-)	management changes	'Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline Organisational resistance Lack of organisational commitment Poor data accuracy Limited user involvement Mismatch between organisation requirements and functionalities offered Lack of readiness for integration Lack of focus on user education and training Excessive customisation Inadequate organisational analysis Costs Project duration Technical challenges Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.' (Ali & Miller 2017, p. 681)	Management
Morale & Motivation	morale	'Bingi et al. (1999) extended this list to include, implementation time and cost, ERP vendors, selecting right employees, and employee morale.' (Ali & Miller 2017, p. 674)	Production
Morale & Motivation	morale	'So, it is crucial for organizations to exploit proper mechanisms to recruit and preserve qualified employees, and nurture and maintain a high level of employees' morale and motivation among them [36,71-75].' (Amid, Moalagh & Ravasan 2012, p. 233)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Morale & Motivation	morale	'Here, lack of employees' morale and motivation is considered as one of the most important failure factors, which intensively relates to governmental structure of large Iranian organization by high levels of bureaucracy and heavy regulations.' (Amid, Moalagh & Ravasan 2012, p. 233)	Production
Morale & Motivation	morale	'The management of the firm can boost the morale of the employees and motivate them so that they accept the ERP systems and use them in an effective manner for the benefit of the organization (Russo and Brandt, 1999).' (Bazhair & Sandhu 2015, p. 51)	Use
Morale & Motivation	morale	'This CSF is related to the need for the project manager/champion to nurture and maintain a high level of employee morale and motivation during the project (Trimmer et al., 2002; Willcocks and Stykes, 2000; Bingi et al., 1999).' (Finney & Corbett 2007, p. 337)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Morale & Motivation	morale	'Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.' (Finney & Corbett 2007, p. 340)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Morale & Motivation	morale	'So, it is crucial for organizations to exploit proper mechanisms to recruit and preserve qualified employees, and nurture and maintain a high level of employees' morale and motivation among them (Kim, Lee, & Gosain, 2005; Metaxiotis, Zafeiropoulos, Nikolinakou, & Psarras, 2005; Skok & Legge, 2002; Umble, et al., 2003; Verville, Bernadas, & Halingten, 2005; Willcocks & Sykes, 2000).' (Ravasan & Mansouri 2014, p. 45)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Morale & Motivation	morale	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Morale & Motivation	morale	'Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Morale & Motivation	morale	'The sub-factors represent the fundamental management functions introduced by Draft (1991) planning (implementation strategies, project management), organizing (business process reengineering, management of expectations, project team competence and composition) and leading (leadership of project team, employee / team morale and motivation).' (Saygili, Ozturkoglu & Kocakulah 2017, p. 68)	Production
Morale & Motivation	motivation	'So, it is crucial for organizations to exploit proper mechanisms to recruit and preserve qualified employees, and nurture and maintain a high level of employees' morale and motivation among them [36,71-75].' (Amid, Moalagh & Ravasan 2012, p. 233)	Production
Morale & Motivation	motivation	'Here, lack of employees' morale and motivation is considered as one of the most important failure factors, which intensively relates to governmental structure of large Iranian organization by high levels of bureaucracy and heavy regulations.' (Amid, Moalagh & Ravasan 2012, p. 233)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Morale & Motivation	motivation	'This CSF is related to the need for the project manager/champion to nurture and maintain a high level of employee morale and motivation during the project (Trimmer et al., 2002; Willcocks and Stykes, 2000; Bingi et al., 1999).' (Finney & Corbett 2007, p. 337)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Morale & Motivation	motivation	'Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.' (Finney & Corbett 2007, p. 340)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Morale & Motivation	motivation	'Some of the interviewee indicated the absence of adequate incentives like performance recognition, sense of achievement or even monetary rewards for motivational purpose as the reasons of devoting low percentage of their time by the PMs to the ERP system implementation project.' (Khattak et al. 2013, p. 53)	Management
Morale & Motivation	motivation	'Therefore, this infers that the presence of a champion in a significant role may be useful for providing guidance & motivation on the project but it cannot essentially guarantee the ERP project implementation success.' (Khattak et al. 2013, p. 59)	Management
Morale & Motivation	motivation	'So, it is crucial for organizations to exploit proper mechanisms to recruit and preserve qualified employees, and nurture and maintain a high level of employees' morale and motivation among them (Kim, Lee, & Gosain, 2005; Metaxiotis, Zafeiropoulos, Nikolinakou, & Psarras, 2005; Skok & Legge, 2002; Umble, et al., 2003; Verville, Bernadas, & Halingten, 2005; Willcocks & Sykes, 2000).' (Ravasan & Mansouri 2014, p. 45)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Morale & Motivation	motivation	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Morale & Motivation	motivation	'Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Morale & Motivation	motivation	'The sub-factors represent the fundamental management functions introduced by Draft (1991) planning (implementation strategies, project management), organizing (business process reengineering, management of expectations, project team competence and composition) and leading (leadership of project team, employee / team morale and motivation).' (Saygili, Ozturkoglu & Kocakulah 2017, p. 68)	Production
Organisational Change	change management	'They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.' (Ali & Miller 2017, p. 674)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	change management	'Important CSFs identified are: ERP team work and composition, top management support, business plan and vision, effective communication, project management, project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and evaluation of performance.' (Ali & Miller 2017, p. 675)	Management, Collection, Production, Use
Organisational Change	change management	'CSFs identified for successful implementation are: a clear understanding of strategic goals, top management commitment and support, organisational change management strategy, good implementation team, data accuracy, extensive education and training, focussed performance measures, and multi-site issues.' (Ali & Miller 2017, p. 675)	Management, Collection, Production, Use
Organisational Change	change management	'They identify causes of ERP implementation failure as excessive customisation, dilemma of internal integration, poor understanding of business implications and requirements, lack of change management strategy, poor data quality, misalignment of IT with business, hidden costs, limited training, and lack of top management support.' (Ali & Miller 2017, p. 681)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	change management	'Lesser, but still important CSFs are, having a good business plan, vision, having a project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and the evaluation of performance (Markus, Axline, Petrie and Tanis, 2000; Bancroft et al., 1998; Bingi et al., 1999; Nah et al., 2001; Umble et al., 2003; Ehie and Madsen, 2005; Sarkar and Lee, 2003; Umble et al., 2003; Kim et al., 2005; Motwani et al., 2005; Nah and Delgado, 2006; Maguire et al., 2010).' (Ali & Miller 2017, p. 682)	Management, Collection, Production, Use
Organisational Change	change management	'The findings of this research shows that change management activities within the organization can be helpful in increasing ERP acceptance within the firm.' (Bazhair & Sandhu 2015, p. 41)	Management, Collection, Production, Use
Organisational Change	change management	'The results of this study show that "Managers and employees readiness to change", "Top management Support", "Business Process Reengineering", "Software and user interface development" and "Change management" are five top critical success factors.' (Chan 2013, p. 109)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	change management	'Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.' (Finney & Corbett 2007, p. 340)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	change management	'Findings - Results suggest that 9 critical failure items namely Inadequate resources, Poor User involvement, Users' resistance to change, High Attrition rate of project team members, Lack of top management commitment, Poor project management, Inadequate project team composition, Ineffective organizational change management and Unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.' (Garg, P & Garg, A 2013, p. 496)	Management, Collection, Production, Use
Organisational Change	change management	'Pareto chart per factors for ERP failure Pareto analysis suggest that nine critical failure items namely inadequate resources, poor user involvement, users' resistance to change, higher attrition rate of project team members, Lack of top management commitment, Poor project management, inadequate project team composition, ineffective organizational change management, unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.' (Garg, P & Garg, A 2013, p. 507)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	change management	'P10: The cases partially supported this proposition because not in all successful cases, although proficient to changes i.e. the change management culture was prevailing in the past, yet no attention was given to devise a proper change management strategy particularly regarding the ERP system project implementation but still the implementation was gone successful.' (Khattak et al. 2013, p. 60)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	change management	'The research concludes that: (1) Quality (adequacy) and quantity of training and education of personnel/users, role and effectiveness of management in reducing the users' resistance, use of steering committee for control purpose, top management support or involvement, clearly specified goals/objectives/scope regarding ERP system, ease of system's use and users' acceptance, vendor's support, project management, effective communication among the organizational members and a balanced team for ERP implementation are practically considered by the successful enterprises in China while planning and going for the implementation of the ERP system and are thus critical for the success of ERP systems implementation projects, ignoring of which may cause implementation failure in the Chinese organizations; (2) Some of the factors deemed imperative for ERP systems implementation success in the literature like; selection of a right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role of consultant, change management strategy and programs, competency in use of IT and IT infrastructure, business...' (Khattak et al. 2013, p. 68)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	change management	'According to the literature, the most studied factors were: Top Management Support, Effective Communication, Training, and Education, Business plan and vision, Project Management, BPR management, Change Management, Project team Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation, Technological Infrastructure, Legacy systems consideration.' (Mahraz, Benabbou & Berrado 2020, p. 112)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	change management	'The findings of our study reveal that 'appropriate business and IT legacy systems', 'business plan/vision/goals/justification', 'business process reengineering', 'change management culture and programme', 'communication', 'ERP teamwork and composition', 'monitoring and evaluation of performance', 'project champion', 'project management', 'software/system development, testing and troubleshooting', 'top management support', 'data management', 'ERP strategy and implementation methodology', 'ERP vendor', 'organizational characteristics', 'fit between ERP and business/process', 'national culture' and 'country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.' (Ngai, Law & Wat 2008, p. 548)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	change management	'Eleven critical factors were identified, such as ERP teamwork and composition, change management program and culture, top management support, business plan and vision, business process reengineering (BPR) and minimum customisation, effective communications, project management, software development, testing and troubleshooting, monitoring and evaluating performance, project champion, and appropriate business and IT legacy systems.' (Rabaa'i 2009, p. 6)	Management, Collection, Production, Use
Organisational Change	change management	'Based on the work by Markus and Tanis (2000), Nah and Delgado organised these factors into seven main categories: (1) Business plan and vision; (2) Change management; (3) Communication; (4) ERP team composition, skills, and compensation; (5) Project management; (6) Top management support and championship; and (7) System analysis, selection, and technical implementation.' (Rabaa'i 2009, p. 6)	Management, Collection, Production, Use
Organisational Change	change management	'The whole organisation should be aware of the project scope, its objectives and activities as an effective communication plan will have a direct impact on the success of the change management program (Mendel, 1999).' (Rabaa'i 2009, p. 10)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	change management	'Indeed ERPs have also proved challenging to implement even in Western organisations, often due to an underestimated requirement for change management and the repositioning of roles and their meaning for actors (Boersma and Kingma, 2005).' (Rabaa'i & AlJamal 2015, p. 84)	Collection, Use
Organisational Change	change management	'Several essential CSFs have been turned into valid and measurable constructs covering both technical and organisational factors (Bhatti, 2005), Many studies around this time detailed other specific CSFs applicable in implementation, but lacked attention to stakeholder perspective and change management aspects (Finney and Corbett, 2007).' (Rabaa'i & AlJamal 2015, p. 87)	Management, Collection, Production, Use
Organisational Change	change management	'Organisational factors traditionally found to affect implementation success, including management support, project communication, change management and team composition do not differentiate the public from the private sector, at least in the case of Jordan.' (Rabaa'i & AlJamal 2015, p. 97)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	change management	'Resistance to new technology is a noted phenomenon in many cultures, but is one that requires effective change management strategies driven from the top.' (Rabaa'i & AlJamal 2015, p. 98)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	change management	'ERP failure factors and categories Failure Categories Failure Factors C4: Project Management F1: Conflicts between organization and consultants/ vendor C5: Technical F2: High rate of system customization C5: Technical F3: Data management issues C2: Human Resources F4: Inadequate education and training C2: Human Resources F5: Inadequate user involvement C2: Human Resources F6: Ineffective communications system C3: Organizational F7: Internal conflicts between departments C2: Human Resources F8: Inadequate change management C3: Organizational F9: Lack of performance measurement system C3: Organizational F10: Misfit between organization culture and ERP system C3: Organizational F11: Misfit between organization structure and ERP system C3: Organizational F12: Misfits between the IT and business strategies C1: Environmental F13: Environmental pressures C3: Organizational F14: Poor business process reengineering C1: Environmental F15: Poor consultant C4: Project Management F16: Poor project management C4: Project Management F17: Poor risk management C3: Organizational F18: Poor top management support C5: Technical F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...' (Ravasan & Mansouri 2014, p. 42)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	change management	'Critical success factors identified in Turkish studies Author (s) Critical Success Factors Baskak& Cetisli (2003) Top management support, business plan and vision, ERP teamwork, ERP package selection, change management, user training and education, effective communication, project management, data integration, software testing and troubleshooting, appropriate legacy systems, monitoring and evaluation of performance.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 62)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	change management	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale- motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	change management	'The proposed model confirms that following factors play a significant role during implementation of SCMIS—top management support, user involvement, pre-implementation analysis, user training, change management, data accuracy and communication.' (Seth, Goyal & Kiran 2015, p. 248)	Management, Collection, Production, Use
Organisational Change	change management	'According to the regression analysis on the successful implementation of SCMIS, as shown in Table 8, factors that have significant impact at 5 per cent or higher level include top management support, user support and involvement, training and education, change management, pre-implementation analysis, communication and data Table 7.' (Seth, Goyal & Kiran 2015, p. 256)	Management, Collection, Production, Use
Organisational Change	change management	'Note: Numbers are the beta weight and **p ¡ 0.05. confirms that these CSVs has a significant impact, and in order to have a successful implementation of SCMIS, top management support, user support and involvement, preimplementation analysis, training, change management, data accuracy and communication are critical.' (Seth, Goyal & Kiran 2015, p. 257)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	organisational change	'For instance, Maguire et al. (2010) find the introduction of ERP systems often result in key organisational changes, which, if not managed carefully, can result in conflict within an organisation.' (Ali & Miller 2017, p. 673)	Management, Collection, Production, Use
Organisational Change	organizational change	'Findings - Results suggest that 9 critical failure items namely Inadequate resources, Poor User involvement, Users' resistance to change, High Attrition rate of project team members, Lack of top management commitment, Poor project management, Inadequate project team composition, Ineffective organizational change management and Unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.' (Garg, P & Garg, A 2013, p. 496)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	organizational change	'Pareto chart per factors for ERP failure Pareto analysis suggest that nine critical failure items namely inadequate resources, poor user involvement, users' resistance to change, higher attrition rate of project team members, Lack of top management commitment, Poor project management, inadequate project team composition, ineffective organizational change management, unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.' (Garg, P & Garg, A 2013, p. 507)	Management, Collection, Production, Use
Organisational Change	organizational change	'Organizations with experience in projects involving IT or organizational change of a similar scale will find it much easier to handle the implementation of ERP [3,46].' (Ngai, Law & Wat 2008, p. 555)	Management, Collection, Production, Use
Organisational Change	resistance	'The authors report risk factors such as loss of qualified IT experts after implementation, inaccurate master production schedules, user resistance, loss of ERP-related know-how, lack of vendor support, failure to produce an appropriate material requirement plan, and inefficient integration between modules are primary risk factors that can affect the viability of ERP projects.' (Ali & Miller 2017, p. 678)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	resistance	'Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline Organisational resistance Lack of organisational commitment Poor data accuracy Limited user involvement Mismatch between organisation requirements and functionalities offered Lack of readiness for integration Lack of focus on user education and training Excessive customisation Inadequate organisational analysis Costs Project duration Technical challenges Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.' (Ali & Miller 2017, p. 681)	Collection, Use
Organisational Change	resistance	'As a result of the studies conducted, user resistance was found to be one of the significant factors.' (Basoglu, Daim & Kerimoglu 2007, p. 74)	Management, Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	resistance	'Lack of management support, poor organizational culture, communication problems, financial management problems, lack of clarity on scope, project management problems, poor project team, ERP software misfit, poor solution implementer performance, poor quality of testing, outdated it infrastructure, lack of training, highly customized ERP, poor process design, lack of user involvement, resistance to change, unrealistic expectations are the main failure factors that need to be analyzed in detail.' (Coşkun et al. 2022, p. 3)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	resistance	'In some cases, they have referenced the need to build acceptance and commitment to the change (Shanks and Parr, 2000; Motwani et al., 2002; Bajwa et al., 2004; Holland and Light, 1999; Abdinnour-Helm et al., 2003; Kumar et al., 2002) and address resistance (Ross and Vitale, 2000; Hong and Kim, 2002; Skok and Legge, 2002); the need to communicate (Ribbers and Schoo, 2002); the need to understand benefits and drawbacks (Bingi et al., 1999; Aladwani, 2001); the need to educate (Siriginidi, 2000a, b); and the need to consider and address organizational culture issues (Davison, 2002; Al-Mashari et al., 2003; Aladwani, 2001; Nah et al., 2001; Scott and Vessey, 2000; Tarafdar and Roy, 2003; Skok and Legge, 2002).' (Finney & Corbett 2007, p. 342)	Management, Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	resistance	'Findings - Results suggest that 9 critical failure items namely Inadequate resources, Poor User involvement, Users' resistance to change, High Attrition rate of project team members, Lack of top management commitment, Poor project management, Inadequate project team composition, Ineffective organizational change management and Unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.' (Garg, P & Garg, A 2013, p. 496)	Management, Collection, Use
Organisational Change	resistance	'Pareto chart per factors for ERP failure Pareto analysis suggest that nine critical failure items namely inadequate resources, poor user involvement, users' resistance to change, higher attrition rate of project team members, Lack of top management commitment, Poor project management, inadequate project team composition, ineffective organizational change management, unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.' (Garg, P & Garg, A 2013, p. 507)	Management, Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	resistance	'Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) • Communication within the company • Organization resistance • Project budget • Project management • Implementation strategy • Strategic goals and objectives • Business process reengineering • organizational culture • knowledge base of the company • Project planning and control • Facilitating conditions • Organization size • The vision of the organization • Readiness of organizations • Clarity of potential cost • User involvement • Selection of vendor/consult ant • Project team • Top management support • Training of user • Trust on vendor • Performance expectancy • Effort expectancy • Social influence • Age • Gender • Highest degree attained • Selection of ERP package • IT infrastructure • Data integrity and system testing.' (Huang et al. 2021, p. 4686)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	resistance	'The research concludes that: (1) Quality (adequacy) and quantity of training and education of personnel/users, role and effectiveness of management in reducing the users' resistance, use of steering committee for control purpose, top management support or involvement, clearly specified goals/objectives/scope regarding ERP system, ease of system's use and users' acceptance, vendor's support, project management, effective communication among the organizational members and a balanced team for ERP implementation are practically considered by the successful enterprises in China while planning and going for the implementation of the ERP system and are thus critical for the success of ERP systems implementation projects, ignoring of which may cause implementation failure in the Chinese organizations; (2) Some of the factors deemed imperative for ERP systems implementation success in the literature like; selection of a right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role of consultant, change management strategy and programs, competency in use of IT and IT infrastructure, business...' (Khattak et al. 2013, p. 68)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	resistance	'Disruption to staff and resistance to received 'best practices', together with required training, data mapping, customisations and their support, complexity of integration with remaining legacy systems are all commonly reported, and are often ongoing issues post-implementation.' (Rabaa'i & AlJamal 2015, p. 86)	Collection, Use
Organisational Change	resistance	'Resistance to new technology is a noted phenomenon in many cultures, but is one that requires effective change management strategies driven from the top.' (Rabaa'i & AlJamal 2015, p. 98)	Collection, Use
Organisational Change	resistance	'Disruption to staff and resistance to received "best practices", together with required training, data mapping, customizations and their support, complexity of integration with remaining legacy systems are all commonly reported, and are often ongoing issues post-implementation.' (Rabaa'i & Gammack 2016, p. 46)	Management, Collection, Use
Organisational Change	resistance	'To overcome this misfit, companies can establish a framework that takes the primary failures of poor leadership, poor project management, poor data quality, poor training, and users' resistance into consideration.' (Shaul & Tauber 2013, p. 18)	Management, Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Change	resistance	'• IT infrastructure • System Training and knowledge transfer • Over-dependence on detailed and heavy customization • High turnover rate of project team members • Business process re-engineering • User's resistance to transform • ERP system misfit Considering these critical factors, specifically affecting the agricultural business sectors in Malaysia, there are a few possible suggestions proposed.' (Shukor, Sheikhi & Nashir 2020, p. 2055)	Collection, Use
Organisational Culture	company culture	'Furthermore, ERP project changes the way a company is organized, often acting against the prevailing company culture, and any organization planning to introduce an ERP system needs to perform a socio-technical analysis before the actual implementation (Colmenares et al., 2004).' (Mahraz, Benabbou & Berrado 2020, p. 114)	Management, Collection, Production, Use
Organisational Culture	organisational culture	'An organisational culture of shared values and common objectives is crucial for business success [46].' (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1255)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Culture	organisational culture	'Mehlinger (2006) found that the organisational culture of 10 campuses in a university system that installed an ERP system, had little or no impact on the successful implementation of an ERP system.' (Rabaa'i, Bandara & Gable 2009, p. 459)	Management, Collection, Production, Use
Organisational Culture	organisational culture	'ERP technology is also known for imposing rigid norms of workflows and particular practices upon workplaces and it is well noted that ERP demands changes to organisational culture.' (Rabaa'i & AlJamal 2015, p. 84)	Management, Collection, Production, Use
Organisational Culture	organisational culture	'Organisational culture plays a critical role in ERP implementation success.' (Rabaa'i & AlJamal 2015, p. 84)	Management, Collection, Production, Use
Organisational Culture	organisational culture	'Across various developing countries, Huang and Palvia (2001) identified many factors of national and organisational culture affecting ERP implementation including economic status and growth, infrastructure, government regulation, low IT maturity, small firm size, and lack of process management and BPR experience.' (Rabaa'i & AlJamal 2015, p. 88)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Culture	organisational culture	'Culture changes however are relatively slower, and it is known that societal culture attitudes do help shape organisational culture attitudes towards ICT adoption, including in the Arab world (Twati and Gammack, 2006).' (Rabaa'i & AlJamal 2015, p. 89)	Management, Collection, Production, Use
Organisational Culture	organisational culture	'Whilst many conventional interpretations assume that the national cultural values of employees directly influence organisational cultures this has been strongly challenged (McSweeney, 20022).' (Rabaa'i & AlJamal 2015, p. 90)	Management, Collection, Production, Use
Organisational Culture	organisational culture	'A further lack of fit with organisational culture is indicated by the extensive customisations that were required in the Jordanian organisations surveyed.' (Rabaa'i & AlJamal 2015, p. 98)	Management, Collection, Production, Use
Organisational Culture	organizational culture	'Moreover, future works could focus on more specific areas such as change management, project management, organizational structure or organizational culture impact in ERP failures so that more detailed and in-depth information or deep-rooted failure reasons could be identified.' (Amid, Moalagh & Ravasan 2012, p. 234)	Management, Collection, Production, Use
Organisational Culture	organizational culture	'Exploring knowledge sharing in ERP implementation: An organizational culture framework.' (Basoglu, Daim & Kerimoglu 2007, p. 95)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Culture	organizational culture	'An important insight, uncovered by the research was the importance of an open discussion environment and organizational culture.' (Chan 2013, p. 104)	Management, Collection, Production, Use
Organisational Culture	organizational culture	'In this study, the dimension of "internal environment" includes four factors (top management support, business process reengineering, organizational culture, change management).' (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1255)	Management, Collection, Production, Use
Organisational Culture	organizational culture	'Organizations should built an organizational culture that is open to change [32], since openness to change plays a pivotal role in today's business environment.' (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1255)	Management, Collection, Production, Use
Organisational Culture	organizational culture	'Lack of management support, poor organizational culture, communication problems, financial management problems, lack of clarity on scope, project management problems, poor project team, ERP software misfit, poor solution implementer performance, poor quality of testing, outdated it infrastructure, lack of training, highly customized ERP, poor process design, lack of user involvement, resistance to change, unrealistic expectations are the main failure factors that need to be analyzed in detail.' (Coşkun et al. 2022, p. 3)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Culture	organizational culture	'After 2016, "Top Management Support", "Poor Organizational Culture", and "Poor Project Team" had the same and second mostly encountered factors with 14 articles.' (Coşkun et al. 2022, p. 14)	Management, Collection, Production, Use
Organisational Culture	organizational culture	'Therefore, the impact of organizational culture on ERP projects is inevitable.' (Coşkun et al. 2022, p. 14)	Management, Collection, Production, Use
Organisational Culture	organizational culture	'According to results, in Asia, while mostly studied failure factor was "Project Management Problems" with twenty-three articles, "Poor Organizational Culture" followed it with twenty-two articles.' (Coşkun et al. 2022, p. 15)	Management, Collection, Production, Use
Organisational Culture	organizational culture	'In addition, in large companies, "Poor Organizational Culture" is the second most studied factor.' (Coşkun et al. 2022, p. 15)	Management, Collection, Production, Use
Organisational Culture	organizational culture	'As expected, education, organizational culture, and communication problems come to the fore in large-scale companies, while financial problems come to the fore in small- scale companies.' (Coşkun et al. 2022, p. 16)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Culture	organizational culture	'However, the most important factors such as "Project Management Problems", "Lack of Top Management Support", and "Poor Organizational Culture" are related to project management, and these are completely specific to ERP.' (Coşkun et al. 2022, p. 18)	Management, Collection, Production, Use
Organisational Culture	organizational culture	'In some cases, they have referenced the need to build acceptance and commitment to the change (Shanks and Parr, 2000; Motwani et al., 2002; Bajwa et al., 2004; Holland and Light, 1999; Abdinnour-Helm et al., 2003; Kumar et al., 2002) and address resistance (Ross and Vitale, 2000; Hong and Kim, 2002; Skok and Legge, 2002); the need to communicate (Ribbers and Schoo, 2002); the need to understand benefits and drawbacks (Bingi et al., 1999; Aladwani, 2001); the need to educate (Siriginidi, 2000a, b); and the need to consider and address organizational culture issues (Davison, 2002; Al-Mashari et al., 2003; Aladwani, 2001; Nah et al., 2001; Scott and Vessey, 2000; Tarafdar and Roy, 2003; Skok and Legge, 2002).' (Finney & Corbett 2007, p. 342)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Culture	organizational culture	'Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) • Communication within the company • Organization resistance • Project budget • Project management • Implementation strategy • Strategic goals and objectives • Business process reengineering • organizational culture • knowledge base of the company • Project planning and control • Facilitating conditions • Organization size • The vision of the organization • Readiness of organizations • Clarity of potential cost • User involvement • Selection of vendor/consult ant • Project team • Top management support • Training of user • Trust on vendor • Performance expectancy • Effort expectancy • Social influence • Age • Gender • Highest degree attained • Selection of ERP package • IT infrastructure • Data integrity and system testing.' (Huang et al. 2021, p. 4686)	Management, Collection, Production, Use
Organisational Culture	organizational culture	'One of the most probable reasons among others may be diversity of the samples that are targeted in different regions and countries, which may have different national or organizational cultures, government laws or regulations and level of economic environments.' (Khattak et al. 2013, p. 46)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Culture	organizational culture	'In Pakistani companies, change management refers inevitably to enabling change through manipulation of or challenges to existing organizational culture.' (Khattak et al. 2013, p. 66)	Management, Collection, Production, Use
Organisational Culture	organizational culture	'By contrast, in the Chinese context, we contend that the existing organizational culture is usually imposed and it is mostly determined by top management as to how and what to pursue and the change is accepted only if it is demanded.' (Khattak et al. 2013, p. 66)	Management, Collection, Production, Use
Organisational Culture	organizational culture	'This is again because of the difference in national and organizational culture between both the countries.' (Khattak et al. 2013, p. 66)	Management, Collection, Production, Use
Organisational Culture	organizational culture	'The importance of CSFs in ERP project affected by the existing organizational culture, but it will also change the current culture.' (Mahraz, Benabbou & Berrado 2020, p. 119)	Management, Collection, Production, Use
Organisational Culture	organizational culture	'Change management culture and programme The effective implementation of an ERP system requires change management strategies and an understanding of organizational culture.' (Ngai, Law & Wat 2008, p. 551)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Culture	organizational culture	'National culture Several studies have recently pointed out the relevance of national culture to ERP implementation since it is embedded in organizational culture [23,32,88].' (Ngai, Law & Wat 2008, p. 556)	Management, Collection, Production, Use
Organisational Culture	organizational culture	'Academic research has pointed out the impacts of national culture on organizational culture, and business practices.' (Ngai, Law & Wat 2008, p. 557)	Management, Collection, Production, Use
Organisational Culture	organizational culture	'Change management and organizational culture are also frequently cited as factors critical to the success of the implementation of ERP systems.' (Ngai, Law & Wat 2008, p. 557)	Management, Collection, Production, Use
Organisational Culture	organizational culture	'In order to improve the chances for the successful implementation of the system, organizations should also review their organizational culture and attributes, as well as the readiness of management and employees to change before implementing an ERP system.' (Ngai, Law & Wat 2008, p. 558)	Management, Collection, Production, Use
Organisational Culture	organizational culture	'Jackson (2011) describes the critical influence of organizational culture on IS adoption, detailing a failed enterprise-wide implementation in a multi-campus higher education college in the UK.' (Rabaa'i & Gammack 2016, p. 48)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Culture	organizational culture	'The contribution of the study is that it brings forward the corporate and organizational culture as a critical success factor.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 68)	Management, Collection, Production, Use
Organisational Culture	organizational culture	'Managing cultural change (Jones et al., 2006) and user training and education (Ke & Wei, 2008), remarked by end-users as components of factor five are determinants of organizational culture.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 69)	Management, Collection, Production, Use
Organisational Culture	organizational culture	'According to this study end- users perceive ERP application as an organization wide software project with components of organizational culture and users.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 69)	Management, Collection, Production, Use
Organisational Culture	organizational culture	'Organizational culture is another important factor that needs to be considered for the success of the information system.' (Seth, Goyal & Kiran 2015, p. 250)	Management, Collection, Production, Use
Organisational Culture	organizational culture	'The studies by Leidner and Kayworth (2006) have shown that the success rate of the system that is being implemented increases if the system is aligned with the organizational culture.' (Seth, Goyal & Kiran 2015, p. 250)	Management, Collection, Production, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Culture	organizational culture	'Organizational culture is embedded within national culture and it is regarded as a unique factor affecting ERP systems implementation success [Zhang et al. 2005].' (Shaul & Tauber 2013, p. 9)	Management, Collection, Production, Use
Organisational Integration	internal integration	'They identify causes of ERP implementation failure as excessive customisation, dilemma of internal integration, poor understanding of business implications and requirements, lack of change management strategy, poor data quality, misalignment of IT with business, hidden costs, limited training, and lack of top management support.' (Ali & Miller 2017, p. 681)	Management, Collection, Use
Organisational Integration	internal integration	'As well as improving the efficiency of an individual company success, BPR can be envisaged as a hierarchy of business reconfiguration, from local exploitation through internal integration and business process redesign to business network redesign and ultimately business scope redefinition (Venkatraman, 1991).' (Basoglu, Daim & Kerimoglu 2007, p. 81)	Management, Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Structure	organisation structure	'These systems are often 'due' for retirement, but still exist within the organisation encapsulating the existing business processes, organisation structure, culture, and information technology (adopted from Aiken 1995; Tayntor, 2005; Holland and Light, 1999).' (Rabaa'i 2009, p. 1)	Management
Organisational Structure	organisational structure	'If 92 A.A. Rabaa'i and E. AlJamal organisational structures are lacking in rigorous lines of authority, as Hutchings and Weir suggest, the culture imposed by ERPs may not fit without major customisation or culture change, attitudes to which may differ between the traditional public sector and emerging private enterprises.' (Rabaa'i & AlJamal 2015, p. 91)	Management
Organisational Structure	organization structure	'Appropriate business and IT legacy systems According to Holland and Light [28], 'legacy systems encapsulated the existing business processes, organization structure, culture, and information technology'.' (Ngai, Law & Wat 2008, p. 551)	Management
Organisational Structure	organization structure	'Also, F11 (misfit between organization structure and ERP system) has the weakest path effect from failure factors to project failure modes with an average effect of 0.40.' (Ravasan & Mansouri 2014, p. 39)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Structure	organization structure	'ERP failure factors and categories Failure Categories Failure Factors C4: Project Management F1: Conflicts between organization and consultants/ vendor C5: Technical F2: High rate of system customization C5: Technical F3: Data management issues C2: Human Resources F4: Inadequate education and training C2: Human Resources F5: Inadequate user involvement C2: Human Resources F6: Ineffective communications system C3: Organizational F7: Internal conflicts between departments C2: Human Resources F8: Inadequate change management C3: Organizational F9: Lack of performance measurement system C3: Organizational F10: Misfit between organization culture and ERP system C3: Organizational F11: Misfit between organization structure and ERP system C3: Organizational F12: Misfits between the IT and business strategies C1: Environmental F13: Environmental pressures C3: Organizational F14: Poor business process reengineering C1: Environmental F15: Poor consultant C4: Project Management F16: Poor project management C4: Project Management F17: Poor risk management C3: Organizational F18: Poor top management support C5: Technical F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...' (Ravasan & Mansouri 2014, p. 42)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Structure	organization structure	'Scenario 3 or organizational category (e.g., poor top management support, misfit between organization structure and ERP system, and misfits between the IT and business strategies) is the third ranked scenario among our five scenario.' (Ravasan & Mansouri 2014, p. 45)	Management
Organisational Structure	organizational structure	'Low degrees of management tendency to long and midterm planning as another failure factor is a probable result of immature organizational structures in Iranian industries, which is more explained in organizational component.' (Amid, Moalagh & Ravasan 2012, p. 233)	Management
Organisational Structure	organizational structure	'Moreover, future works could focus on more specific areas such as change management, project management, organizational structure or organizational culture impact in ERP failures so that more detailed and in-depth information or deep-rooted failure reasons could be identified.' (Amid, Moalagh & Ravasan 2012, p. 234)	Management
Organisational Structure	organizational structure	'Depending on the organizational structure, economic issues, the intricacy of the firm, time constrictions and environmental locations and strategic partners (Markus and Tanis, 2000), the suitable execution strategy should be preferred.' (Anjum & Khan 2015, p. 629)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Structure	organizational structure	'Related issues will be of increasing relevance and importance in the next years for practice though (Botta-Genoulaz et al., 2005; Salmeron and Lopez, 2010; Law et al., 2010), as in times of rapidly changing business environments and newly emerging technologies, companies are not only forced to adapt their business models, their strategy and their organizational structures but also their information systems.' (Barth & Koch 2019, p. 656)	Management
Organisational Structure	organizational structure	'Organizational structures have to be adapted to new or changed processes and necessary staffing changes have to be managed to prepare the organization in the best way possible for the time after the upgrade (E, H).' (Barth & Koch 2019, p. 667)	Management
Organisational Structure	organizational structure	'BPC is an organizational initiative to design business processes to achieve significant improvement through changes in the relationships between management, information technology, organizational structure, and people (Kettinger et al., 1995).' (Basoglu, Daim & Kerimoglu 2007, p. 81)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Structure	organizational structure	'Depending on the organizational structure, the complexity of the organization, economical issues, strategic partners, time constraints and geographical locations (Markus and Tanis, 2000), the appropriate implementation strategy should be selected.' (Garg, P & Garg, A 2014, p. 432)	Management
Organisational Structure	organizational structure	'P2: The current study does not support the second proposition that reporting level of the project manager that is an organizational structure in which the project manager directly reports to the business division's senior management leads to implementation project success.' (Khattak et al. 2013, p. 53)	Management
Organisational Structure	organizational structure	'Existing organizational structures and business processes may not fit with the new system, which introduces a certain level of change.' (Ngai, Law & Wat 2008, p. 557)	Management
Organisational Structure	organizational structure	'Detailing the case of resistance to the introduction of an integrated student information management system, Noble and Newman (1993) use the term "organizational invalidity" to describe when a technology does not fit organizational structures.' (Rabaa'i & Gammack 2016, p. 48)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Organisational Structure	organizational structure	'The ERP life cycle is assumed different from the software life cycle since the ERP package involves configuring and adapting the generic functionality to fit organizational structures and processes developed by a known vendor.' (Shaul & Tauber 2013, p. 20)	Management
Organisational Structure	structure of the organization	'High rate of managements' substitution or replacement in top levels of organizations' hierarchy and absence of any stable managerial position in governmental organizations as a result of governmental structure of the organizations, prevent managers to consider any long or even midterm goals and objectives.' (Amid, Moalagh & Ravasan 2012, p. 231)	Management
Organisational Structure	structure of the organization	'The high expectation of achieving all-round cost savings and service improvements is very much dependent on how good the chosen ERP system fits to the organizational functionalities and how well the tailoring and configuration process of the system matches with the business culture, strategy and structure of the organization (Rashid, Hossain, & Patrick, 2002).' (Basoglu, Daim & Kerimoglu 2007, p. 74)	Management
Performance Measurement System	performance measurement	'Lack of performance measurement system 24.' (Amid, Moalagh & Ravasan 2012, p. 235)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Performance Measurement System	performance measurement	'ERP failure factors and categories Failure Categories Failure Factors C4: Project Management F1: Conflicts between organization and consultants/ vendor C5: Technical F2: High rate of system customization C5: Technical F3: Data management issues C2: Human Resources F4: Inadequate education and training C2: Human Resources F5: Inadequate user involvement C2: Human Resources F6: Ineffective communications system C3: Organizational F7: Internal conflicts between departments C2: Human Resources F8: Inadequate change management C3: Organizational F9: Lack of performance measurement system C3: Organizational F10: Misfit between organization culture and ERP system C3: Organizational F11: Misfit between organization structure and ERP system C3: Organizational F12: Misfits between the IT and business strategies C1: Environmental F13: Environmental pressures C3: Organizational F14: Poor business process reengineering C1: Environmental F15: Poor consultant C4: Project Management F16: Poor project management C4: Project Management F17: Poor risk management C3: Organizational F18: Poor top management support C5: Technical F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...' (Ravasan & Mansouri 2014, p. 42)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Management Skills & Competencies	project management	'The authors find that top management support, good project management teams, and good communications are the top three most important critical successful factors during implementation.' (Ali & Miller 2017, p. 666)	Management
Project Management Skills & Competencies	project management	'They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.' (Ali & Miller 2017, p. 674)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Management Skills & Competencies	project management	'Important CSFs identified are: ERP team work and composition, top management support, business plan and vision, effective communication, project management, project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and evaluation of performance.' (Ali & Miller 2017, p. 675)	Management
Project Management Skills & Competencies	project management	'In another country-specific study, Amid et al. (2012) examine critical failure factors in Iranian companies and identify and classify failure attributes as vendors and consultants, human resources, managerial, project management, processes, organisational, and technical issues (Table V).' (Ali & Miller 2017, p. 681)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Management Skills & Competencies	project management	'The most common causes of ERP implementation failures are a combination of poor planning and high software customisation (Scheer and Habbermann, 2000), lack of top management commitment; ineffective communication; insufficient training; lack of user support, poor project management, relying on legacy systems, inter-departmental conflicts, poor composition of project teams, failure in redesigning business processes and, lack of clarity about required changes.' (Ali & Miller 2017, p. 682)	Management
Project Management Skills & Competencies	project management	'The study founds a significant association of technological, strategic, project management, people, top management support and communication factor with ERP implementation.' (Anjum & Khan 2015, p. 628)	Management
Project Management Skills & Competencies	project management	'Project management: The study of Suganthalakshmi and Mothuvelayuthan (2012), concluded that the formation of the project team has robust influence on the ERP execution process and two significant issues are the combination of third-party professionals within the team and the preservation within the firm with the pertinent ERP knowledge.' (Anjum & Khan 2015, p. 630)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Management Skills & Competencies	project management	'Organizations should have an effective project management strategy to control the implementation process to avoid overrun of budget and ensuring implementation on schedule.' (Basoglu, Daim & Kerimoglu 2007, p. 91)	Management
Project Management Skills & Competencies	project management	'Lack of management support, poor organizational culture, communication problems, financial management problems, lack of clarity on scope, project management problems, poor project team, ERP software misfit, poor solution implementer performance, poor quality of testing, outdated it infrastructure, lack of training, highly customized ERP, poor process design, lack of user involvement, resistance to change, unrealistic expectations are the main failure factors that need to be analyzed in detail.' (Coşkun et al. 2022, p. 3)	Management
Project Management Skills & Competencies	project management	'It should not be confused that many factors such as "budget", "communication", and "project team" are not examined in the "Project Management Problems" category since they are examined in separate categories because many articles analyzed in this study show that project management is handled as project coordination.' (Coşkun et al. 2022, p. 13)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Management Skills & Competencies	project management	'Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.' (Finney & Corbett 2007, p. 340)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Management Skills & Competencies	project management	'Findings - Results suggest that 9 critical failure items namely Inadequate resources, Poor User involvement, Users' resistance to change, High Attrition rate of project team members, Lack of top management commitment, Poor project management, Inadequate project team composition, Ineffective organizational change management and Unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.' (Garg, P & Garg, A 2013, p. 496)	Management
Project Management Skills & Competencies	project management	'Developing software systems is an expensive, and often a difficult process as software development projects are affected by a series of problems, such as poor project management, cost and schedule overruns, poor quality software and under-motivated developers.' (Garg, P & Garg, A 2013, p. 500)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Management Skills & Competencies	project management	'Pareto chart per factors for ERP failure Pareto analysis suggest that nine critical failure items namely inadequate resources, poor user involvement, users' resistance to change, higher attrition rate of project team members, Lack of top management commitment, Poor project management, inadequate project team composition, ineffective organizational change management, unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.' (Garg, P & Garg, A 2013, p. 507)	Management
Project Management Skills & Competencies	project management	'The results of this research support the suggested hypothesis (H4) that there is positive influence between "Project management" related items on ERP implementation success (b = 0.788, t-value = 17.521, p-value = 0.007).' (Garg, P & Garg, A 2014, p. 438)	Management
Project Management Skills & Competencies	project management	'(4) The Project Management factor in this study is defined by team composition, project team competence, scope management, expectation management, communication within project team and budget control items which may affect the success of ERP implementation in Indian retail sector.' (Garg, P & Chauhan 2015, p. 1332)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Management Skills & Competencies	project management	'The most widely cited CSFs were found to be: security, project management, communication, compliance, network and the reaction of organization.' (Huang et al. 2021, p. 4685)	Management
Project Management Skills & Competencies	project management	'Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) • Communication within the company • Organization resistance • Project budget • Project management • Implementation strategy • Strategic goals and objectives • Business process reengineering • organizational culture • knowledge base of the company • Project planning and control • Facilitating conditions • Organization size • The vision of the organization • Readiness of organizations • Clarity of potential cost • User involvement • Selection of vendor/consult ant • Project team • Top management support • Training of user • Trust on vendor • Performance expectancy • Effort expectancy • Social influence • Age • Gender • Highest degree attained • Selection of ERP package • IT infrastructure • Data integrity and system testing.' (Huang et al. 2021, p. 4686)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Management Skills & Competencies	project management	'Discussion From the systematic literature review conducted into Cloud ERP implementation, we found that the top five most widely cited CSFs for the successful implementation of Cloud ERP are: security, project management, communication, compliance, and network.' (Huang et al. 2021, p. 4689)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Management Skills & Competencies	project management	'The research concludes that: (1) Quality (adequacy) and quantity of training and education of personnel/users, role and effectiveness of management in reducing the users' resistance, use of steering committee for control purpose, top management support or involvement, clearly specified goals/objectives/scope regarding ERP system, ease of system's use and users' acceptance, vendor's support, project management, effective communication among the organizational members and a balanced team for ERP implementation are practically considered by the successful enterprises in China while planning and going for the implementation of the ERP system and are thus critical for the success of ERP systems implementation projects, ignoring of which may cause implementation failure in the Chinese organizations; (2) Some of the factors deemed imperative for ERP systems implementation success in the literature like; selection of a right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role of consultant, change management strategy and programs, competency in use of IT and IT infrastructure, business...' (Khattak et al. 2013, p. 68)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Management Skills & Competencies	project management	'According to the literature, the most studied factors were: Top Management Support, Effective Communication, Training, and Education, Business plan and vision, Project Management, BPR management, Change Management, Project team Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation, Technological Infrastructure, Legacy systems consideration.' (Mahraz, Benabbou & Berrado 2020, p. 112)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Management Skills & Competencies	project management	'The findings of our study reveal that 'appropriate business and IT legacy systems', 'business plan/vision/goals/justification', 'business process reengineering', 'change management culture and programme', 'communication', 'ERP teamwork and composition', 'monitoring and evaluation of performance', 'project champion', 'project management', 'software/system development, testing and troubleshooting', 'top management support', 'data management', 'ERP strategy and implementation methodology', 'ERP vendor', 'organizational characteristics', 'fit between ERP and business/process', 'national culture' and 'country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.' (Ngai, Law & Wat 2008, p. 548)	Management
Project Management Skills & Competencies	project management	'For ERP implementation, a clear and welldefined project plan, including the goals, objectives, strategy, scope, and schedule of the project, are significant issues in project management.' (Ngai, Law & Wat 2008, p. 557)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Management Skills & Competencies	project management	'Other more specific aspects of project management, such as setting realistic deadlines for implementation, dedicated resources, and the management of expectations were suggested in companies in the USA, United Kingdom, Demark, Europe and Australia.' (Ngai, Law & Wat 2008, p. 557)	Management
Project Management Skills & Competencies	project management	'Eleven critical factors were identified, such as ERP teamwork and composition, change management program and culture, top management support, business plan and vision, business process reengineering (BPR) and minimum customisation, effective communications, project management, software development, testing and troubleshooting, monitoring and evaluating performance, project champion, and appropriate business and IT legacy systems.' (Rabaa'i 2009, p. 6)	Management
Project Management Skills & Competencies	project management	'The factors identified were management and leadership, visioning and planning, ERP package selection, communication process management, training and education, project management, legacy systems management, system integration, system testing, cultural and structural changes, and performance evaluation and management.' (Rabaa'i 2009, p. 6)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Management Skills & Competencies	project management	'Based on the work by Markus and Tanis (2000), Nah and Delgado organised these factors into seven main categories: (1) Business plan and vision; (2) Change management; (3) Communication; (4) ERP team composition, skills, and compensation; (5) Project management; (6) Top management support and championship; and (7) System analysis, selection, and technical implementation.' (Rabaa'i 2009, p. 6)	Management
Project Management Skills & Competencies	project management	'They are the few key areas where things must go right. . . " An earlier paper by this team (Ram, Corkindale and Wu, 2013) tabulated the relationships found in the literature between CSFs and implementation or performance output success to identify four factors consistently emerging as central, namely project management, training and education, business process re-engineering and system integration.' (Rabaa'i & AlJamal 2015, p. 87)	Management
Project Management Skills & Competencies	project management	'The critical success factors consistently identified in the literature include top management support, the presence of a champion, good communication with all stakeholders, effective project management, reengineering of business processes, an understanding of corporate cultural change, and the use of business analysts on the project team.' (Rabaa'i & AlJamal 2015, p. 88)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Management Skills & Competencies	project management	'5 Discussion, conclusion and future research Apart from two differences on project management aspects, the overwhelming impression is that the CSFs for implementation success were similar between the Cultural perspectives on ERP implementation in Jordan 97 Jordanian public and the private sector.' (Rabaa'i & AlJamal 2015, p. 96)	Management
Project Management Skills & Competencies	project management	'Project managers, surprised by the scope, size, and complexity of ERP projects may fail to initiate the necessary level of detailed project management planning and control (Umble and Umble, 2002).' (Rabaa'i & AlJamal 2015, p. 98)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Management Skills & Competencies	project management	'ERP failure factors and categories Failure Categories Failure Factors C4: Project Management F1: Conflicts between organization and consultants/ vendor C5: Technical F2: High rate of system customization C5: Technical F3: Data management issues C2: Human Resources F4: Inadequate education and training C2: Human Resources F5: Inadequate user involvement C2: Human Resources F6: Ineffective communications system C3: Organizational F7: Internal conflicts between departments C2: Human Resources F8: Inadequate change management C3: Organizational F9: Lack of performance measurement system C3: Organizational F10: Misfit between organization culture and ERP system C3: Organizational F11: Misfit between organization structure and ERP system C3: Organizational F12: Misfits between the IT and business strategies C1: Environmental F13: Environmental pressures C3: Organizational F14: Poor business process reengineering C1: Environmental F15: Poor consultant C4: Project Management F16: Poor project management C4: Project Management F17: Poor risk management C3: Organizational F18: Poor top management support C5: Technical F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...' (Ravasan & Mansouri 2014, p. 42)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Management Skills & Competencies	project management	'Critical success factors identified in Turkish studies Author (s) Critical Success Factors Baskak& Cetisli (2003) Top management support, business plan and vision, ERP teamwork, ERP package selection, change management, user training and education, effective communication, project management, data integration, software testing and troubleshooting, appropriate legacy systems, monitoring and evaluation of performance.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 62)	Management
Project Management Skills & Competencies	project management	'...mentation evaluation 22 implementation time 46 national culture 23 management of expectations 47 country related functional requirements 24 project management 48 centralization' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Management Skills & Competencies	project management	'Related Sub- Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Management Skills & Competencies	project management	'To overcome this misfit, companies can establish a framework that takes the primary failures of poor leadership, poor project management, poor data quality, poor training, and users' resistance into consideration.' (Shaul & Tauber 2013, p. 18)	Management
Project Management Skills & Competencies	project manager	'Each new functionality has to be discussed in detail and benefits have to be weighed against the costs in order to find the best solution for the company." A special focus was often put on the project manager.' (Barth & Koch 2019, p. 664)	Management
Project Management Skills & Competencies	project manager	'Despite the benefits that can be achieved from a successful ERP implementation, project managers focus on the technical and financial aspects of a project and neglect to take into account the non-technical issues like people (Genoulaz & Millet, 2006).' (Basoglu, Daim & Kerimoglu 2007, p. 79)	Management
Project Management Skills & Competencies	project manager	'The propositions are as under: P1: Selection of a right full time project manager with extensive experience whose sole responsibilities is the project is positively related to the successful implementation of ERP project.' (Khattak et al. 2013, p. 46)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Management Skills & Competencies	project manager	'RESULTS AND DISCUSSION P1: After going through the summary of the survey results in Table 4; it is found that all the successful cases deployed the project managers (PMs) with having reasonable business experiences in the past to formally look after the ERP system implementation project in their respective organizations.' (Khattak et al. 2013, p. 53)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Management Skills & Competencies	project manager	'The research concludes that: (1) Quality (adequacy) and quantity of training and education of personnel/users, role and effectiveness of management in reducing the users' resistance, use of steering committee for control purpose, top management support or involvement, clearly specified goals/objectives/scope regarding ERP system, ease of system's use and users' acceptance, vendor's support, project management, effective communication among the organizational members and a balanced team for ERP implementation are practically considered by the successful enterprises in China while planning and going for the implementation of the ERP system and are thus critical for the success of ERP systems implementation projects, ignoring of which may cause implementation failure in the Chinese organizations; (2) Some of the factors deemed imperative for ERP systems implementation success in the literature like; selection of a right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role of consultant, change management strategy and programs, competency in use of IT and IT infrastructure, business...' (Khattak et al. 2013, p. 68)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Management Skills & Competencies	project manager	'Project managers, surprised by the scope, size, and complexity of ERP projects may fail to initiate the necessary level of detailed project management planning and control (Umble and Umble, 2002).' (Rabaa'i & AlJamal 2015, p. 98)	Management
Project Management Skills & Competencies	project manager	'To ensure ERP implementation success the project manager should control the financial resources (Frye et al., 2007).' (Rabaa'i & AlJamal 2015, p. 98)	Management
Project Management Skills & Competencies	project manager	'In Jordan, critical decisions and approvals are only taken by top management, thus, project managers do not have access or control over financial resources without approval from top management.' (Rabaa'i & AlJamal 2015, p. 98)	Management
Project Planning	project planning	'CSFs for successful ERP implementation are identified as top management support, presence of a champion, good communication with stakeholders, effective project planning, business process re-engineering (BPR), and using a business analyst on the project team (Bancroft et al., 1998; Bingi et al., 1999).' (Ali & Miller 2017, p. 674)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Planning	project planning	'For a project implementation team, a more intimate understanding of CSFs of the various stakeholder groups would make it possible to assess the project planning phases and determine if the concerns of these relevant groups are being addressed as effectively as possible.' (Finney & Corbett 2007, p. 330)	Management
Project Planning	project planning	'Consultants who are not able to demonstrate a mastery of professional communication skills, good language capability, industrial knowledge, and business analytical skills, are not able to provide expertise concerning project planning, ERP systems and BPR during ERP implementation and hence cannot act as change agents and fill the knowledge gaps (Ngai et al., 2008; Stebel, 1992; Ganesh and Mehta, 2010; Nah and Lau, 2001) (for example, communicating with project team members and users for acquiring business requirements, conducting BPR and delivering professional training).' (Garg, P & Garg, A 2013, p. 499)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Planning	project planning	'Among the more important factors are top management support and involvement (Duchessi et al., 1989) the need for a project champion (Ehie and Madsen, 2005), user training (Stefanou and Revanoglou, 2006), technological competence, process delineation, project planning, change management and PM (Krumbholz and Maiden, 2001).' (Garg, P & Agarwal 2014, p. 404)	Management
Project Planning	project planning	'The most important factors are top management support and involvement, the need for project champion user training, technological competence, process delineation, project planning, change management and PM (Umble et al., 2003).' (Garg, P & Agarwal 2014, p. 404)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Planning	project planning	'Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) • Communication within the company • Organization resistance • Project budget • Project management • Implementation strategy • Strategic goals and objectives • Business process reengineering • organizational culture • knowledge base of the company • Project planning and control • Facilitating conditions • Organization size • The vision of the organization • Readiness of organizations • Clarity of potential cost • User involvement • Selection of vendor/consult ant • Project team • Top management support • Training of user • Trust on vendor • Performance expectancy • Effort expectancy • Social influence • Age • Gender • Highest degree attained • Selection of ERP package • IT infrastructure • Data integrity and system testing.' (Huang et al. 2021, p. 4686)	Management
Project Planning	project planning	'Project planning, forming the project team, choosing the ERP package and the ERP implementer, the project sponsor and supervisor are among the duties that can only be done by top managers.' (Osman & Sahraoui 2019, p. 37)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Project Planning	project planning	'The project planning must be looked upon as a change management initiative not an IT initiative.' (Osman & Sahraoui 2019, p. 38)	Management
Project Planning	project planning	'The success factors related to top management's engagement with the project - not just mere involvement, project leaders are veterans, change management goes hand-in-hand with project planning, satisficing mindset prevails, and team members were decision makers.' (Rabaa'i 2009, p. 6)	Management
Project Planning	project planning	'Project planning follows from the visioning which must be clear enough to specify a project mission and objectives, which can then turn into a detailed plan with measurable outcomes as implementation proceeds and thus ensure alignment with strategic direction.' (Rabaa'i & Gammack 2016, p. 55)	Management
Project Planning	project planning	'QUT apply a developed risk management framework to manage risk as an integral part of project planning and execution, with a regularly updated risk register.' (Rabaa'i & Gammack 2016, p. 55)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Realistic Expectations	expectation	'They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.' (Ali & Miller 2017, p. 674)	Management, Collection, Use
Realistic Expectations	expectation	'In this work, authors mentioned that lack of education, BPR, project management, top management support and unrealistic expectations of users could lead companies to fail.' (Amid, Moalagh & Ravasan 2012, p. 229)	Management, Collection, Use
Realistic Expectations	expectation	'The involvement of users augments user satisfaction and approval by increasing pragmatic expectations about system competences (Esteves and Casanovas, 2003).' (Anjum & Khan 2015, p. 630)	Management, Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Realistic Expectations	expectation	'It is furthermore crucial that expectations and goals are communicated effectively among stakeholders and throughout all levels of an organization, including capabilities as well as limitations of the system (Nah and Delgado, 2006), also to prevent frustration due to "over-selling" (Somers and Nelson, 2004).' (Barth & Koch 2019, p. 658)	Management, Collection, Use
Realistic Expectations	expectation	'Nevertheless, I states: "To qualify a project as successful, also time and budget targets have to be met." As a result of the high complexity of the project and the huge dependency on the ERP system, B and J scale down the expectations and consider an ERP upgrade project as successful when time targets are nearly met and the company is able to continue their business without complications.' (Barth & Koch 2019, p. 663)	Management, Collection, Use
Realistic Expectations	expectation	'At the end of the project it has to be checked if the project has been executed as planned, if expectations are met and if users get along with the upgraded system (I).' (Barth & Koch 2019, p. 664)	Management, Collection, Use
Realistic Expectations	expectation	'Another important factor within the communication with end users is the management of expectations.' (Barth & Koch 2019, p. 666)	Management, Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Realistic Expectations	expectation	'The high expectation of achieving all- round cost savings and service improvements is very much dependent on how good the chosen ERP system fits to the organizational functionalities and how well the tailoring and configuration process of the system matches with the business culture, strategy and structure of the organization (Rashid, Hossain, & Patrick, 2002).' (Basoglu, Daim & Kerimoglu 2007, p. 74)	Management, Collection, Use
Realistic Expectations	expectation	'Many of these companies struggled with issues like globalization, acquisition consolidation, process standardization, and changes in customer expectations (Genoulaz & Millet, 2006).' (Basoglu, Daim & Kerimoglu 2007, p. 77)	Management, Collection, Use
Realistic Expectations	expectation	'In spite of high expectations of the organizations purchasing ERP software, most of ERP projects become overbudget, late and even fail (Genoulaz & Millet, 2006; Griffith et al., 1999; Hong & Kim, 2002; Kumar et al., 2003; Seewald, 2002).' (Basoglu, Daim & Kerimoglu 2007, p. 79)	Management, Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Realistic Expectations	expectation	'Unless the organizational context and the information technology are made compatible, waiting for people to use new technologies will not be more than an expectation.' (Basoglu, Daim & Kerimoglu 2007, p. 80)	Management, Collection, Use
Realistic Expectations	expectation	'Lack of management support, poor organizational culture, communication problems, financial management problems, lack of clarity on scope, project management problems, poor project team, ERP software misfit, poor solution implementer performance, poor quality of testing, outdated it infrastructure, lack of training, highly customized ERP, poor process design, lack of user involvement, resistance to change, unrealistic expectations are the main failure factors that need to be analyzed in detail.' (Coşkun et al. 2022, p. 3)	Management, Collection, Use
Realistic Expectations	expectation	'Failures can be defined in other forms like exceeding budget, lagging behind projected schedule, and failure to match expectations.' (Garg, P & Garg, A 2013, p. 498)	Management, Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Realistic Expectations	expectation	'These factors include, but not limited to, poor consultant effectiveness, ERP software misfit, unrealistic expectations from top management concerning the ERP systems, over-reliance on heavy customization, poor quality of Business Process Reengineering (BPR), high turnover rate of project team members, poor IT Infrastructure, functionality problems with the system, unclear concept of the nature and use of the ERP system from the users perspective, too tight project schedule, lack of formal communication, part-time dedication, etc.' (Garg, P & Garg, A 2013, p. 498)	Management, Collection, Use
Realistic Expectations	expectation	'UI increase user satisfaction and acceptance by developing realistic expectations about system capabilities (Esteves et al., 2003).' (Garg, P & Agarwal 2014, p. 408)	Management, Collection, Use
Realistic Expectations	expectation	'Nah et al. (2003) stated that one of the biggest problems ERP project leaders face comes not from the implementation itself, but from expectations of board members, senior staff, and other key stakeholders.' (Garg, P & Garg, A 2014, p. 431)	Management, Collection, Use
Realistic Expectations	expectation	'Expectations at every level need to be communicated.' (Garg, P & Garg, A 2014, p. 434)	Management, Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Realistic Expectations	expectation	'Management of communication, education and expectations are critical throughout the organization (Wee, 2000).' (Garg, P & Garg, A 2014, p. 434)	Management, Collection, Use
Realistic Expectations	expectation	'Training and education helps to improve the quality of ERP project results and to meet user's expectations.' (Garg, P & Garg, A 2014, p. 440)	Management, Collection, Use
Realistic Expectations	expectation	'Also it is extremely important to set the right expectations with all the project stakeholders so that there should not be any scope creep at the time of user acceptance test.' (Garg, P & Garg, A 2014, p. 441)	Management, Collection, Use
Realistic Expectations	expectation	'User involvement increase user satisfaction and acceptance by developing realistic expectations about system capabilities (Esteves and Casanovas, 2003).' (Garg, P & Chauhan 2015, p. 1320)	Management, Collection, Use
Realistic Expectations	expectation	'(4) The Project Management factor in this study is defined by team composition, project team competence, scope management, expectation management, communication within project team and budget control items which may affect the success of ERP implementation in Indian retail sector.' (Garg, P & Chauhan 2015, p. 1332)	Management, Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Realistic Expectations	expectation	'So it is advisable for the manager to clearly define the scope statement and set the right expectations with all the project stakeholders so that there should not be any scope creep at the time of user acceptance test (UAT).' (Garg, P & Chauhan 2015, p. 1333)	Management, Collection, Use
Realistic Expectations	expectation	'The size of the organization is significant to ERP implementation since expectations and requirements differ among SMEs and large organizations [16].' (Huang et al. 2021, p. 4688)	Management, Collection, Use
Realistic Expectations	expectation	'While, most of the existing papers only focus on the SMEs' context [14, 19-21, 23, 25], the size of the organization is a significant factor in assessing ERP implementation since expectations and requirements largely differ between SMEs and large organizations [39].' (Huang et al. 2021, p. 4690)	Management, Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Realistic Expectations	expectation	'Unrealistic expectations and incompetent or unskilled project teams frequently lead to implementation failures (Xue et al., 2005).ERP team-work and its composition is important throughout the ERP implementation project and it should be balanced, cross-sectional and comprised of a mix of external consultants and organizational internal staff so that the internal staff can develop the necessary technical skills and expertise for designing, implementing, maintaining and enhancing the ERP systems.' (Khattak et al. 2013, p. 65)	Management, Collection, Use
Realistic Expectations	expectation	'The Involvement of users may develop rational expectations about system capabilities and thus may increase their satisfaction level and easy acceptance of the new system (Esteves et al., 2003).' (Khattak et al. 2013, p. 67)	Management, Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Realistic Expectations	expectation	'It includes communication of expectations at all company levels, formal presentations by the project teams and the announcement of the project results within the company and announcement of the project scope, objectives and activities before the project onset (Doom et al., 2010); Training and Education: Training and Education are considered actually as one of the preconditions of building a successful ERP system.' (Mahraz, Benabbou & Berrado 2020, p. 112)	Management, Collection, Use
Realistic Expectations	expectation	'Some of the ERP project team roles and responsibilities below are often utilized to put together the winning team who will achieve implementation success that meets the expectations and objectives set forth by the company management.' (Mahraz, Benabbou & Berrado 2020, p. 113)	Management, Collection, Use
Realistic Expectations	expectation	'ERP implementation projects are very different from most other types of projects such as building construction, network installation, etc., and defining success seems to be more difficult than defining successful financial expectations, or manufacturing objectives (Romney, 2012).' (Mahraz, Benabbou & Berrado 2020, p. 117)	Management, Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Realistic Expectations	expectation	'Other more specific aspects of project management, such as setting realistic deadlines for implementation, dedicated resources, and the management of expectations were suggested in companies in the USA, United Kingdom, Demark, Europe and Australia.' (Ngai, Law & Wat 2008, p. 557)	Management, Collection, Use
Realistic Expectations	expectation	'For example; continuing decline in perstudent government funding and support, globalisation and global competition, continuing growth in student numbers, changes in the nature of academic work, increasing competition between institutions, government pressure to improve operational efficiency, and generally diverse and shifting expectations of stakeholders.' (Rabaa'i 2009, p. 1)	Management, Collection, Use
Realistic Expectations	expectation	'The top five were top management support, project team competence, project champion, inter-departmental cooperation, and clear goals and expectations.' (Rabaa'i 2009, p. 6)	Management, Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Realistic Expectations	expectation	'ERP Systems in the HE Sector Environmental pressures for change on Universities worldwide (McCredie and Updegrove, 1999) and in Australia (Beekhuyzen et al, 2002) have been many (Crase et al, 2000; Brown, 2002); including: continuing decline in per- student government funding and support, globalisation and global competition, continuing growth in student numbers, changes in the nature of academic work, increasing competition between institutions, government pressure to improve operational efficiency, and generally diverse and shifting expectations of stakeholders.' (Rabaa'i, Bandara & Gable 2009, p. 457)	Management, Collection, Use
Realistic Expectations	expectation	'Watson et al. (2003) for example argued that state government officials have three major concerns with ERP implementations: high expectations of ERP systems; inconsistent technology diffusion within government agencies and (despite the standardisation ERP implementations warrant), many agencies are effectively independent.' (Rabaa'i & AlJamal 2015, p. 85)	Management, Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Realistic Expectations	expectation	'One of the first articles that has been published about analyzing ERP failures returned to Umble and Umble (2002) in which they mentioned that lack of education, BPR, project management, top management support and unrealistic expectations of users could lead companies to fail.' (Ravasan & Mansouri 2014, p. 35)	Management, Collection, Use
Realistic Expectations	expectation	'b) Expectation failure, when the IT systems do not live up to user expectations.' (Ravasan & Mansouri 2014, p. 39)	Management, Collection, Use
Realistic Expectations	expectation	'Generally, it is believed that the project is partially failed because it is not completed within time and/or budget (process failure), the ERP systems do not live up to user expectations (expectation failure), and there is no match between ERP systems and the planned objectives (correspondence failure).' (Ravasan & Mansouri 2014, p. 40)	Management, Collection, Use
Realistic Expectations	expectation	'...mentation evaluation 22 implementation time 46 national culture 23 management of expectations 47 country related functional requirements 24 project management 48 centralization' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management, Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Realistic Expectations	expectation	'Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Management, Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Realistic Expectations	expectation	'The sub-factors represent the fundamental management functions introduced by Draft (1991) planning (implementation strategies, project management), organizing (business process reengineering, management of expectations, project team competence and composition) and leading (leadership of project team, employee / team morale and motivation).' (Saygili, Ozturkoglu & Kocakulah 2017, p. 68)	Management, Collection, Use
Realistic Expectations	expectation	'Identify user and organizational expectations effectively.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 74)	Management, Collection, Use
Realistic Expectations	expectation	'However, a substantial number of companies still suffer from ERP project overruns because of unrealistic expectations concerning duration and resources allocated [Panorama 2011].' (Shaul & Tauber 2013, p. 9)	Management, Collection, Use
Realistic Expectations	expectation	'Unrealistic expectations on the part of vendors and the intangible system prior to implementation can lead companies to misinterpret the role of senior management in ERP implementation outcomes.' (Shaul & Tauber 2013, p. 19)	Management, Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Realistic Expectations	expectation	'Therefore, there is still a need to continuously adapt and enhance an ERP after its first implementation to resolve users' dissatisfactions regarding expectations and the requirement backlog given the gap between actual functionality and benefits promised by the ERP [Motiwalla and Thompson 2009].' (Shaul & Tauber 2013, p. 22)	Management, Collection, Use
Realistic Expectations	expectation	'Managing user acceptance towards enterprise resource planning (erp) systems: Understanding the dissonance between user expectations and managerial policies.' (Shaul & Tauber 2013, p. 34)	Management, Collection, Use
Regulatory & Statutory Compliance	compliance	'According to the same research, 1414locations [17].' (Coşkun et al. 2022, p. 2)	Management
Regulatory & Statutory Compliance	compliance	'Also, they need to meet the compliance requirement of their customers' countries.' (Garg, P & Garg, A 2014, p. 425)	Management
Regulatory & Statutory Compliance	compliance	'The most widely cited CSFs were found to be: security, project management, communication, compliance, network and the reaction of organization.' (Huang et al. 2021, p. 4685)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Regulatory & Statutory Compliance	compliance	'Compliance represents the next widely cited CSF [14, 15, 20, 23].' (Huang et al. 2021, p. 4685)	Management
Regulatory & Statutory Compliance	compliance	'Since organizations are uncertain about the means of data storage in the cloud, Cloudbased data archiving, segregation of duties, global compliance standards, and regulations are considered as the three major issues in compliance [23].' (Huang et al. 2021, p. 4685)	Management
Regulatory & Statutory Compliance	compliance	'According to Gupta and Misra [14] and Gupta, Misra [15], high compliance will increase the possibility of successful implementation.' (Huang et al. 2021, p. 4685)	Management
Regulatory & Statutory Compliance	compliance	'Compliance also has a moderating effect between organizational factors and successful implementation of Cloud ERP [23].' (Huang et al. 2021, p. 4685)	Management
Regulatory & Statutory Compliance	compliance	'Extrinsic factors include: compliance, network, and security as these CSFs are primarily controlled by the cloud vendor.' (Huang et al. 2021, p. 4686)	Management
Regulatory & Statutory Compliance	compliance	'For example, Gupta and Misra [14] analyzed statistics and found network, compliance, security is positively related to the success of Cloud ERP implementation.' (Huang et al. 2021, p. 4687)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Regulatory & Statutory Compliance	compliance	'For example, Gupta and Misra [23] found the moderating effects of security, compliance and Page 4687 network on the relationship between organizational factors and successful implementation of Cloud ERP.' (Huang et al. 2021, p. 4687)	Management
Regulatory & Statutory Compliance	compliance	'Discussion From the systematic literature review conducted into Cloud ERP implementation, we found that the top five most widely cited CSFs for the successful implementation of Cloud ERP are: security, project management, communication, compliance, and network.' (Huang et al. 2021, p. 4689)	Management
Regulatory & Statutory Compliance	compliance	'Globalization, centralization, and regulatory compliance were the key drivers for continued ERP investment among LEs.' (Shaul & Tauber 2013, p. 9)	Management
Regulatory & Statutory Compliance	regulation	'Here, lack of employees' morale and motivation is considered as one of the most important failure factors, which intensively relates to governmental structure of large Iranian organization by high levels of bureaucracy and heavy regulations.' (Amid, Moalagh & Ravasan 2012, p. 233)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Regulatory & Statutory Compliance	regulation	'These regulations limit managers to recruit and preserve qualified employees due to low levels of salaries and wages paid to employees in governmental structures.' (Amid, Moalagh & Ravasan 2012, p. 233)	Management
Regulatory & Statutory Compliance	regulation	'Since organizations are uncertain about the means of data storage in the cloud, Cloudbased data archiving, segregation of duties, global compliance standards, and regulations are considered as the three major issues in compliance [23].' (Huang et al. 2021, p. 4685)	Management
Regulatory & Statutory Compliance	regulation	'One of the most probable reasons among others may be diversity of the samples that are targeted in different regions and countries, which may have different national or organizational cultures, government laws or regulations and level of economic environments.' (Khattak et al. 2013, p. 46)	Management
Regulatory & Statutory Compliance	regulation	'Cultures, government regulations, and economic environments differ among countries, a fact that raises some issues and challenges for ERP implementation [30,42,64].' (Ngai, Law & Wat 2008, p. 549)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Regulatory & Statutory Compliance	regulation	'Sheu et al. [64] pointed out that the differences in language, culture, politics, government, regulations, management style, and labour skills have an impact on ERP implementation practices in different countries.' (Ngai, Law & Wat 2008, p. 549)	Management
Regulatory & Statutory Compliance	regulation	'Across various developing countries, Huang and Palvia (2001) identified many factors of national and organisational culture affecting ERP implementation including economic status and growth, infrastructure, government regulation, low IT maturity, small firm size, and lack of process management and BPR experience.' (Rabaa'i & AlJamal 2015, p. 88)	Management
Regulatory & Statutory Compliance	regulation	'Regardless of the misfit between organization structure and ERP system, some of Iranian unique regulations and procedures especially in finance processes, prevent international systems to being implemented and fitted in Iranian organizations or force vendors to do major customizations in their systems.' (Ravasan & Mansouri 2014, p. 45)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Regulatory & Statutory Compliance	regulatory	'Although national characteristics can and do play a role in shaping organisational practices, Bhaskaran and Sukumaran (2007) found that other factors, such as the economic and regulatory environment of organisations, were more influential than simple cultural 'stereotyping' based on business managers' nationality.' (Rabaa'i & AlJamal 2015, p. 90)	Management
Regulatory & Statutory Compliance	regulatory	'Globalization, centralization, and regulatory compliance were the key drivers for continued ERP investment among LEs.' (Shaul & Tauber 2013, p. 9)	Management
Resource Availability	availability of resource	'In addition, the effect of other on-going projects, including the management of the overall IT architecture, and nonavailability of resources for organisational transformation, are the most critical risk factors for implementation.' (Ali & Miller 2017, p. 678)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Resource Availability	dedicated resource	'They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.' (Ali & Miller 2017, p. 674)	Production
Resource Availability	dedicated resource	'Other more specific aspects of project management, such as setting realistic deadlines for implementation, dedicated resources, and the management of expectations were suggested in companies in the USA, United Kingdom, Demark, Europe and Australia.' (Ngai, Law & Wat 2008, p. 557)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Resource Availability	dedicated resource	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale- motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Resource Availability	human resource	'They observe that vendor failure to adapt to local culture, BPR, managing local human resources, lack of information sharing, failure to understand cultural characteristics, lack of adaptability towards a changing business and economic environment, lack of cost control functions (i.e. adapting to changing costs), and failure to understand technical issues are the main causes of ERP implementation failure.' (Ali & Miller 2017, p. 681)	Production
Resource Availability	human resource	'In another country-specific study, Amid et al. (2012) examine critical failure factors in Iranian companies and identify and classify failure attributes as vendors and consultants, human resources, managerial, project management, processes, organisational, and technical issues (Table V).' (Ali & Miller 2017, p. 681)	Production
Resource Availability	human resource	'Another important failure factor in Iran relates to poor human resources management.' (Amid, Moalagh & Ravasan 2012, p. 232)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Resource Availability	human resource	'One of the main problems in ERP projects is focusing on technical and financial aspects of a project and neglecting to take into account the non-technical issues like people [70], while many ERP studies indicate that failure is largely due to human resources issues, rather than technical factors.' (Amid, Moalagh & Ravasan 2012, p. 232)	Production
Resource Availability	human resource	'Then, using 236 questionnaire data gathered through ERP project team members in Iranian industries, which completely failed in their ERP projects implementation, a robust EFA is conducted and 35 finally failure factors are categorized into seven main components consist of "Vendor and Consultant", "Human Resources", "Managerial" "Project Management", "Processes", "Organizational" and "Technical".' (Amid, Moalagh & Ravasan 2012, p. 233)	Production
Resource Availability	human resource	'In other words, for an organization to work correctly, holistic, fast, and reliable information is required in production, human resources, purchasing, financial affairs, and stock [1].' (Coşkun et al. 2022, p. 1)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Resource Availability	human resource	'Therefore, it involves not only the planning stages, but also the allocating of responsibilities to various players, the definition of milestones and critical paths, training and human resource planning, and finally the determination of measures of success (Nah et al., 2001).' (Finney & Corbett 2007, p. 336)	Production
Resource Availability	human resource	'The main reasons among many others as to why the Chinese enterprises faced the kind of challenges include data maintenance and integration problems, system integration problems (Lai, 2006), the involvement of knowledgeable consultants in respective projects, selection of reputable vendors, low implementation experience, weak or unsophisticated IT infrastructure, lack of access to knowledge and human resource etc., to name some of few.' (Khattak et al. 2013, p. 43)	Production
Resource Availability	human resource	'In addition to the flexibility that they prefer to retain, Chinese leaders are less willing to invest in the longterm development of company infrastructure such as in technology adoption, internal human resources, and processes since they are thrifty, and focus on short-term profit maximization [15].' (Ngai, Law & Wat 2008, p. 558)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Resource Availability	human resource	'ERP failure factors and categories Failure Categories Failure Factors C4: Project Management F1: Conflicts between organization and consultants/ vendor C5: Technical F2: High rate of system customization C5: Technical F3: Data management issues C2: Human Resources F4: Inadequate education and training C2: Human Resources F5: Inadequate user involvement C2: Human Resources F6: Ineffective communications system C3: Organizational F7: Internal conflicts between departments C2: Human Resources F8: Inadequate change management C3: Organizational F9: Lack of performance measurement system C3: Organizational F10: Misfit between organization culture and ERP system C3: Organizational F11: Misfit between organization structure and ERP system C3: Organizational F12: Misfits between the IT and business strategies C1: Environmental F13: Environmental pressures C3: Organizational F14: Poor business process reengineering C1: Environmental F15: Poor consultant C4: Project Management F16: Poor project management C4: Project Management F17: Poor risk management C3: Organizational F18: Poor top management support C5: Technical F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...' (Ravasan & Mansouri 2014, p. 42)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Resource Availability	human resource	'Organizations where top management is committed for IOS and relationship are bound to be more successful as they will allocate more financial and human resources.' (Seth, Goyal & Kiran 2015, p. 250)	Production
Resource Availability	human resource	'Furthermore, there can also be underestimation of the available funding, human resources, hardware, suppliers, consultants and physical space, etc., needed for successful ERP implementation.' (Shaul & Tauber 2013, p. 19)	Production
Resource Availability	inadequate resource	'Findings - Results suggest that 9 critical failure items namely Inadequate resources, Poor User involvement, Users' resistance to change, High Attrition rate of project team members, Lack of top management commitment, Poor project management, Inadequate project team composition, Ineffective organizational change management and Unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.' (Garg, P & Garg, A 2013, p. 496)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Resource Availability	inadequate resource	'Pareto chart per factors for ERP failure Pareto analysis suggest that nine critical failure items namely inadequate resources, poor user involvement, users' resistance to change, higher attrition rate of project team members, Lack of top management commitment, Poor project management, inadequate project team composition, ineffective organizational change management, unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.' (Garg, P & Garg, A 2013, p. 507)	Production
Resource Availability	inadequate resource	'Inadequate resources for ERP Implementation at Indian retail sector lead to many problems and failure so it should not be there.' (Garg, P & Garg, A 2013, p. 507)	Production
Resource Availability	inadequate resource	'This is a similar finding to research conducted by Rockford Consulting Group; the greatest reason for ERP implementation failures is inadequate resources.' (Garg, P & Garg, A 2013, p. 507)	Production
Resource Availability	inadequate resource	'Inadequate resources and a lack of financial and political support will inevitably lead to failure as demonstrated in some case studies [87].' (Ngai, Law & Wat 2008, p. 557)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Resource Availability	resource availability	'Therefore, Yusuf et al. (2004) recommend that before embarking on an ERP implementation, organisations should not only plan for resource availability, but also assess its readiness for ERP system the changes that ERP implementation will unleash.' (Ali & Miller 2017, p. 676)	Production
Scope: Features	ERP package	'Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) • Communication within the company • Organization resistance • Project budget • Project management • Implementation strategy • Strategic goals and objectives • Business process reengineering • organizational culture • knowledge base of the company • Project planning and control • Facilitating conditions • Organization size • The vision of the organization • Readiness of organizations • Clarity of potential cost • User involvement • Selection of vendor/consult ant • Project team • Top management support • Training of user • Trust on vendor • Performance expectancy • Effort expectancy • Social influence • Age • Gender • Highest degree attained • Selection of ERP package • IT infrastructure • Data integrity and system testing.' (Huang et al. 2021, p. 4686)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Features	ERP package	'The factors identified were management and leadership, visioning and planning, ERP package selection, communication process management, training and education, project management, legacy systems management, system integration, system testing, cultural and structural changes, and performance evaluation and management.' (Rabaa'i 2009, p. 6)	Management
Scope: Features	ERP package	'Critical success factors identified in Turkish studies Author (s) Critical Success Factors Baskak& Cetisli (2003) Top management support, business plan and vision, ERP teamwork, ERP package selection, change management, user training and education, effective communication, project management, data integration, software testing and troubleshooting, appropriate legacy systems, monitoring and evaluation of performance.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 62)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Features	ERP package	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Features	ERP product selection	'(1) The "Organizational" factor in this study is defined by business plan and vision, top management support, business process reengineering, ERP product selection, selection of implementation partner/consultants and enterprise wide communication plan items which may affect the success of ERP implementation in Indian retail sector.' (Garg, P & Chauhan 2015, p. 1327)	Management
Scope: Features	clarity on scope	'Lack of management support, poor organizational culture, communication problems, financial management problems, lack of clarity on scope, project management problems, poor project team, ERP software misfit, poor solution implementer performance, poor quality of testing, outdated it infrastructure, lack of training, highly customized ERP, poor process design, lack of user involvement, resistance to change, unrealistic expectations are the main failure factors that need to be analyzed in detail.' (Coşkun et al. 2022, p. 3)	Management
Scope: Features	features	'E also points out that responsible persons should think thoroughly about features to be implemented and their benefits.' (Barth & Koch 2019, p. 664)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Features	features	'In the project context, the term scope can refer to two components[41]: Product scope the features and functions that characterized product, service or result Project scope its work performed to deliver a product, service or result with specific features and functions From requirement and product scope definitions can conclude requirement is a component of product scope and the functional requirements are typically used in IT and software development to describe product scope, also project scope management deal with requirement collecting which help to validate and control scope[42].' (Osman & Sahraoui 2019, p. 39)	Management
Scope: Features	functional	'Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) identify several other attributes associated with implementation failures, including approaching ERP implementation from an excessively functional perspective, inappropriately cutting the scope of the project, eliminating user training, inadequate testing, not improving business processes initially, underestimating data quality problems, fragile human capital, and data migration problems.' (Ali & Miller 2017, p. 680)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Features	functional	'Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline Organisational resistance Lack of organisational commitment Poor data accuracy Limited user involvement Mismatch between organisation requirements and functionalities offered Lack of readiness for integration Lack of focus on user education and training Excessive customisation Inadequate organisational analysis Costs Project duration Technical challenges Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.' (Ali & Miller 2017, p. 681)	Management
Scope: Features	functional	'Each new functionality has to be discussed in detail and benefits have to be weighed against the costs in order to find the best solution for the company." A special focus was often put on the project manager.' (Barth & Koch 2019, p. 664)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Features	functional	'Sheu, Chae, and Yang (2004) and Soh, Kien, and Tay-Yap (2000) highlighted that there are often significant gaps between the functionality offered by ERP systems and the one required by the adopting company.' (Basoglu, Daim & Kerimoglu 2007, p. 80)	Management
Scope: Features	functional	'These factors include, but not limited to, poor consultant effectiveness, ERP software misfit, unrealistic expectations from top management concerning the ERP systems, over-reliance on heavy customization, poor quality of Business Process Reengineering (BPR), high turnover rate of project team members, poor IT Infrastructure, functionality problems with the system, unclear concept of the nature and use of the ERP system from the users perspective, too tight project schedule, lack of formal communication, part-time dedication, etc.' (Garg, P & Garg, A 2013, p. 498)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Features	functional	'The findings of our study reveal that 'appropriate business and IT legacy systems', 'business plan/vision/goals/justification', 'business process reengineering', 'change management culture and programme', 'communication', 'ERP teamwork and composition', 'monitoring and evaluation of performance', 'project champion', 'project management', 'software/system development, testing and troubleshooting', 'top management support', 'data management', 'ERP strategy and implementation methodology', 'ERP vendor', 'organizational characteristics', 'fit between ERP and business/process', 'national culture' and 'country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.' (Ngai, Law & Wat 2008, p. 548)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Features	functional	'In the project context, the term scope can refer to two components[41]: Product scope the features and functions that characterized product, service or result Project scope its work performed to deliver a product, service or result with specific features and functions From requirement and product scope definitions can conclude requirement is a component of product scope and the functional requirements are typically used in IT and software development to describe product scope, also project scope management deal with requirement collecting which help to validate and control scope[42].' (Osman & Sahraoui 2019, p. 39)	Management
Scope: Features	functional	'Although classed as technology related, experience shows that business practices developed around legacy systems can cause the biggest challenge to a successful enterprise system implementation, and despite a product's configurability, they can still contain many non-modifiable functionalities that may or may not be applicable in a particular university (Yakovlev, 2001) .' (Rabaa'i & Gammack 2016, p. 57)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Features	functional	'...mentation evaluation 22 implementation time 46 national culture 23 management of expectations 47 country related functional requirements 24 project management 48 centralization' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Features	functional	'Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Features	lack of fit	'A further lack of fit with organisational culture is indicated by the extensive customisations that were required in the Jordanian organisations surveyed.' (Rabaa'i & AlJamal 2015, p. 98)	Management
Scope: Features	package selection	'They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.' (Ali & Miller 2017, p. 674)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Features	package selection	'The factors identified were management and leadership, visioning and planning, ERP package selection, communication process management, training and education, project management, legacy systems management, system integration, system testing, cultural and structural changes, and performance evaluation and management.' (Rabaa'i 2009, p. 6)	Management
Scope: Features	package selection	'Critical success factors identified in Turkish studies Author (s) Critical Success Factors Baskak& Cetisli (2003) Top management support, business plan and vision, ERP teamwork, ERP package selection, change management, user training and education, effective communication, project management, data integration, software testing and troubleshooting, appropriate legacy systems, monitoring and evaluation of performance.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 62)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Features	package selection	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Features	requirements	'They identify causes of ERP implementation failure as excessive customisation, dilemma of internal integration, poor understanding of business implications and requirements, lack of change management strategy, poor data quality, misalignment of IT with business, hidden costs, limited training, and lack of top management support.' (Ali & Miller 2017, p. 681)	Management
Scope: Features	requirements	'Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline Organisational resistance Lack of organisational commitment Poor data accuracy Limited user involvement Mismatch between organisation requirements and functionalities offered Lack of readiness for integration Lack of focus on user education and training Excessive customisation Inadequate organisational analysis Costs Project duration Technical challenges Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.' (Ali & Miller 2017, p. 681)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Features	requirements	'Consultants who are not able to demonstrate a mastery of professional communication skills, good language capability, industrial knowledge, and business analytical skills, are not able to provide expertise concerning project planning, ERP systems and BPR during ERP implementation and hence cannot act as change agents and fill the knowledge gaps (Ngai et al., 2008; Stebel, 1992; Ganesh and Mehta, 2010; Nah and Lau, 2001) (for example, communicating with project team members and users for acquiring business requirements, conducting BPR and delivering professional training).' (Garg, P & Garg, A 2013, p. 499)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Features	requirements	'In the project context, the term scope can refer to two components[41]: Product scope the features and functions that characterized product, service or result Project scope its work performed to deliver a product, service or result with specific features and functions From requirement and product scope definitions can conclude requirement is a component of product scope and the functional requirements are typically used in IT and software development to describe product scope, also project scope management deal with requirement collecting which help to validate and control scope[42].' (Osman & Sahraoui 2019, p. 39)	Management
Scope: Features	requirements	'Considerable customisation was required in both sectors, and the traditional style of management in Jordan did not fit well with the requirements for successful implementation.' (Rabaa'i & AlJamal 2015, p. 83)	Management
Scope: Features	requirements	'...mentation evaluation 22 implementation time 46 national culture 23 management of expectations 47 country related functional requirements 24 project management 48 centralization' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Features	requirements	'This paper offers the following suggestion in order to achieve the best out of an ERP system for Malaysia agriculture industry: • A company must concentrate on the quality of integration between company requirements and ERP scope.' (Shukor, Sheikhi & Nashir 2020, p. 2055)	Management
Scope: Features	scope management	'(4) The Project Management factor in this study is defined by team composition, project team competence, scope management, expectation management, communication within project team and budget control items which may affect the success of ERP implementation in Indian retail sector.' (Garg, P & Chauhan 2015, p. 1332)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Features	scope management	'In the project context, the term scope can refer to two components[41]: Product scope the features and functions that characterized product, service or result Project scope its work performed to deliver a product, service or result with specific features and functions From requirement and product scope definitions can conclude requirement is a component of product scope and the functional requirements are typically used in IT and software development to describe product scope, also project scope management deal with requirement collecting which help to validate and control scope[42].' (Osman & Sahraoui 2019, p. 39)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Features	selection of ERP	'Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.' (Finney & Corbett 2007, p. 340)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Features	selection of ERP	'Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) • Communication within the company • Organization resistance • Project budget • Project management • Implementation strategy • Strategic goals and objectives • Business process reengineering • organizational culture • knowledge base of the company • Project planning and control • Facilitating conditions • Organization size • The vision of the organization • Readiness of organizations • Clarity of potential cost • User involvement • Selection of vendor/consult ant • Project team • Top management support • Training of user • Trust on vendor • Performance expectancy • Effort expectancy • Social influence • Age • Gender • Highest degree attained • Selection of ERP package • IT infrastructure • Data integrity and system testing.' (Huang et al. 2021, p. 4686)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Minimal Customisation	customisation	'They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.' (Ali & Miller 2017, p. 674)	Production
Scope: Minimal Customisation	customisation	'Important CSFs identified are: ERP team work and composition, top management support, business plan and vision, effective communication, project management, project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and evaluation of performance.' (Ali & Miller 2017, p. 675)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Minimal Customisation	customisation	'They identify causes of ERP implementation failure as excessive customisation, dilemma of internal integration, poor understanding of business implications and requirements, lack of change management strategy, poor data quality, misalignment of IT with business, hidden costs, limited training, and lack of top management support.' (Ali & Miller 2017, p. 681)	Production
Scope: Minimal Customisation	customisation	'Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline Organisational resistance Lack of organisational commitment Poor data accuracy Limited user involvement Mismatch between organisation requirements and functionalities offered Lack of readiness for integration Lack of focus on user education and training Excessive customisation Inadequate organisational analysis Costs Project duration Technical challenges Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.' (Ali & Miller 2017, p. 681)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Minimal Customisation	customisation	'Lesser, but still important CSFs are, having a good business plan, vision, having a project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and the evaluation of performance (Markus, Axline, Petrie and Tanis, 2000; Bancroft et al., 1998; Bingi et al., 1999; Nah et al., 2001; Umble et al., 2003; Ehie and Madsen, 2005; Sarkar and Lee, 2003; Umble et al., 2003; Kim et al., 2005; Motwani et al., 2005; Nah and Delgado, 2006; Maguire et al., 2010).' (Ali & Miller 2017, p. 682)	Production
Scope: Minimal Customisation	customisation	'The most common causes of ERP implementation failures are a combination of poor planning and high software customisation (Scheer and Habbermann, 2000), lack of top management commitment; ineffective communication; insufficient training; lack of user support, poor project management, relying on legacy systems, inter-departmental conflicts, poor composition of project teams, failure in redesigning business processes and, lack of clarity about required changes.' (Ali & Miller 2017, p. 682)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Minimal Customisation	customisation	'Eleven critical factors were identified, such as ERP teamwork and composition, change management program and culture, top management support, business plan and vision, business process reengineering (BPR) and minimum customisation, effective communications, project management, software development, testing and troubleshooting, monitoring and evaluating performance, project champion, and appropriate business and IT legacy systems.' (Rabaa'i 2009, p. 6)	Production
Scope: Minimal Customisation	customisation	'Disruption to staff and resistance to received 'best practices', together with required training, data mapping, customisations and their support, complexity of integration with remaining legacy systems are all commonly reported, and are often ongoing issues post-implementation.' (Rabaa'i & AlJamal 2015, p. 86)	Production
Scope: Minimal Customisation	customisation	'If 92 A.A. Rabaa'i and E. AlJamal organisational structures are lacking in rigorous lines of authority, as Hutchings and Weir suggest, the culture imposed by ERPs may not fit without major customisation or culture change, attitudes to which may differ between the traditional public sector and emerging private enterprises.' (Rabaa'i & AlJamal 2015, p. 91)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Minimal Customisation	customisation	'In both sectors half of all respondents strongly agreed that 'major customisation was required'.' (Rabaa'i & AlJamal 2015, p. 95)	Production
Scope: Minimal Customisation	customisation	'A further lack of fit with organisational culture is indicated by the extensive customisations that were required in the Jordanian organisations surveyed.' (Rabaa'i & AlJamal 2015, p. 98)	Production
Scope: Minimal Customisation	customisation	'Customisation increases project time, ruins schedules, introduce new bugs into the system, and make the upgrade to new release harder (Shehab et al. 2004).' (Rabaa'i & AlJamal 2015, p. 98)	Production
Scope: Minimal Customisation	customisation	'Customisation within any culture should therefore be avoided, or at least minimised, in order to achieve the full benefits of an ERP system.' (Rabaa'i & AlJamal 2015, p. 98)	Production
Scope: Minimal Customisation	customization	'This is also emphasized by Koch and Mitteregger (2016), who have shown that amount of customization during implementation affects support costs in maintenance, similar to Light (2001).' (Barth & Koch 2019, p. 659)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Minimal Customisation	customization	'ERP customization at an acceptable level brings some advantages to the organizations, like lower user resistance, reduced training needs and more organizational adaptation (Bingi et al., 1999; Hong & Kim, 2002).' (Basoglu, Daim & Kerimoglu 2007, p. 88)	Production
Scope: Minimal Customisation	customization	'Work practices, poor data quality, BPR activities, customization of the ERP system, internal staff adequacy, training, top management support, quality of consultants are the main problems (Genoulaz & Millet, 2006).' (Basoglu, Daim & Kerimoglu 2007, p. 89)	Production
Scope: Minimal Customisation	customization	'ERP customization at an acceptable level is an important determinant of organizational adoption (Bingi et al., 1999; Hong & Kim, 2002).' (Basoglu, Daim & Kerimoglu 2007, p. 90)	Production
Scope: Minimal Customisation	customization	'Therefore, organizations should be willing to adjust their processes, so as to fit with the new software and minimize the degree of customization needed [34].' (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1255)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Minimal Customisation	customization	'These factors include, but not limited to, poor consultant effectiveness, ERP software misfit, unrealistic expectations from top management concerning the ERP systems, over-reliance on heavy customization, poor quality of Business Process Reengineering (BPR), high turnover rate of project team members, poor IT Infrastructure, functionality problems with the system, unclear concept of the nature and use of the ERP system from the users perspective, too tight project schedule, lack of formal communication, part-time dedication, etc.' (Garg, P & Garg, A 2013, p. 498)	Production
Scope: Minimal Customisation	customization	'in Indian retail sector (2) The "Technological" factor in this study is defined by Implementation strategy, Adequate IT infrastructure, Minimal customization and Data conversion and accuracy items which may affect the success of ERP implementation in Indian retail sector.' (Garg, P & Chauhan 2015, p. 1331)	Production
Scope: Minimal Customisation	customization	'P13: A certain level of business process re-engineering (BPR) and minimal customization of ERP software system to fit into current processes of the organization is positively related to ERP implementation success.' (Khattak et al. 2013, p. 48)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Minimal Customisation	customization	'The complexity and magnitude of the efforts required may deter organizations from the approach of ERP customization.' (Ngai, Law & Wat 2008, p. 551)	Production
Scope: Minimal Customisation	customization	'In literature, BPR and minimal customization is the third most commonly cited CSF.' (Osman & Sahraoui 2019, p. 38)	Production
Scope: Minimal Customisation	customization	'Disruption to staff and resistance to received "best practices", together with required training, data mapping, customizations and their support, complexity of integration with remaining legacy systems are all commonly reported, and are often ongoing issues post-implementation.' (Rabaa'i & Gammack 2016, p. 46)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Minimal Customisation	customization	'ERP failure factors and categories Failure Categories Failure Factors C4: Project Management F1: Conflicts between organization and consultants/ vendor C5: Technical F2: High rate of system customization C5: Technical F3: Data management issues C2: Human Resources F4: Inadequate education and training C2: Human Resources F5: Inadequate user involvement C2: Human Resources F6: Ineffective communications system C3: Organizational F7: Internal conflicts between departments C2: Human Resources F8: Inadequate change management C3: Organizational F9: Lack of performance measurement system C3: Organizational F10: Misfit between organization culture and ERP system C3: Organizational F11: Misfit between organization structure and ERP system C3: Organizational F12: Misfits between the IT and business strategies C1: Environmental F13: Environmental pressures C3: Organizational F14: Poor business process reengineering C1: Environmental F15: Poor consultant C4: Project Management F16: Poor project management C4: Project Management F17: Poor risk management C3: Organizational F18: Poor top management support C5: Technical F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...' (Ravasan & Mansouri 2014, p. 42)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Minimal Customisation	customization	'But as mentioned before, international ERPs need major customizations to fit Iranian organizations' structures and processes which is the source of future problems in system performance.' (Ravasan & Mansouri 2014, p. 46)	Production
Scope: Minimal Customisation	customization	'ERP customization failure: Institutionalized accounting practices, power relations and market forces.' (Ravasan & Mansouri 2014, p. 49)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Minimal Customisation	customization	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale- motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Minimal Customisation	customization	'Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Scope: Minimal Customisation	customization	'• IT infrastructure • System Training and knowledge transfer • Over-dependence on detailed and heavy customization • High turnover rate of project team members • Business process re-engineering • User's resistance to transform • ERP system misfit Considering these critical factors, specifically affecting the agricultural business sectors in Malaysia, there are a few possible suggestions proposed.' (Shukor, Sheikhi & Nashir 2020, p. 2055)	Production
Short-term Thinking (-)	short term	'In summary, achieving short term operational goals is of more importance in Iranian industries, rather than long term plans, which is on the contrary with ERP philosophy.' (Amid, Moalagh & Ravasan 2012, p. 231)	Management
Short-term Thinking (-)	short term	'With regard to the former point, it is of great importance to note that companies implementing ERP system encounter problems associated to start-up matters which consequently bring about a performance dip instantly after the implementation in the short term [131 - 132].' (Shukor, Sheikhi & Nashir 2020, p. 2054)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Short-term Thinking (-)	short-term	'LITERATURE REVIEW An ERP system entails long-term application processes (strategic level) and short-term applications (operational level).' (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1254)	Management
Short-term Thinking (-)	short-term	'Meanwhile, ERP implementation is not a short-term project lasting only two or three months, but a longterm program which may last for one or quite a few years.' (Garg, P & Agarwal 2014, p. 418)	Management
Short-term Thinking (-)	short-term	'In addition to the flexibility that they prefer to retain, Chinese leaders are less willing to invest in the longterm development of company infrastructure such as in technology adoption, internal human resources, and processes since they are thrifty, and focus on short-term profit maximization [15].' (Ngai, Law & Wat 2008, p. 558)	Management
Short-term Thinking (-)	short-term	'However, the failure to provide significant resources for these purposes has seen short-term gains, but end- user ignorance and discontinuance have led to long- term failure.' (Rabaa'i 2009, p. 9)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Short-term Thinking (-)	short-term	'At the organisational level public sector organisations have more rigid hierarchies and structures, and more paperwork, while at the environmental level public sector organisations are more strongly influenced by the Cultural perspectives on ERP implementation in Jordan 85 political rather than the economic environment, entailing strong measures of accountability, short-term vision and public monitoring of performance.' (Rabaa'i & AlJamal 2015, p. 84)	Management
Short-term Thinking (-)	short-term	'While the results suggested most respondents considered the training adequate, it can be argued that the failure to provide significant resources for training purposes has seen short-term gains, but ultimately end-users ignorance and 98 A.A. Rabaa'i and E. AlJamal system rejection led to long-term failure.' (Rabaa'i & AlJamal 2015, p. 97)	Management
Short-term Thinking (-)	short-term	'However, the failure to provide significant resources for these purposes has seen short-term gains, but end- user ignorance and discontinuance have led to long- term failure.' (Rabaa'i & Gammack 2016, p. 53)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Short-term Thinking (-)	short-term	'Senior management often assumes that performance will increase instantly after the initial implementation, whereas a short-term decline in effectiveness and productivity is the general rule [Yu 2005].' (Shaul & Tauber 2013, p. 19)	Management
Software & Hardware Configuration	configuration	'The merchant of ERP software normally endorse which hardware and hardware configuration must be utilized to run the ERP system (Al-Mashari, 2002; Yasser, 2000).' (Anjum & Khan 2015, p. 629)	Production
Software & Hardware Configuration	configuration	'The high expectation of achieving all-round cost savings and service improvements is very much dependent on how good the chosen ERP system fits to the organizational functionalities and how well the tailoring and configuration process of the system matches with the business culture, strategy and structure of the organization (Rashid, Hossain, & Patrick, 2002).' (Basoglu, Daim & Kerimoglu 2007, p. 74)	Production
Software & Hardware Configuration	configuration	'Control and coordination in global ERP configuration.' (Basoglu, Daim & Kerimoglu 2007, p. 94)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Software & Hardware Configuration	configuration	'A whole commitment from the organization has become one of the critical success factors (CSF) but the temporary nature of projects in the construction industry with constantly shifting partners, each with their own individual objectives and working practices makes it difficult to achieve the ideal ICT configurations.' (Chan 2013, p. 107)	Production
Software & Hardware Configuration	configuration	'The need to conduct BPR and software configuration was the third most commonly cited CSF.' (Finney & Corbett 2007, p. 337)	Production
Software & Hardware Configuration	configuration	'Table III reveals that the five most widely cited categories, top management commitment and support, change management, BPR and software configuration, training and job redesign, and project team: the best and brightest, are significantly more often researched than the others.' (Finney & Corbett 2007, p. 339)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Software & Hardware Configuration	configuration	'Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.' (Finney & Corbett 2007, p. 340)	Production
Software & Hardware Configuration	configuration	'The poor quality of BPR led to incorrect system configuration problems and hence failed implementation.' (Garg, P & Garg, A 2013, p. 499)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Software & Hardware Configuration	configuration	'The ERP software vendor generally certifies which hardware (and hardware configurations) must be used to run the ERP system (Al-Mashari, 2002; Yasser, 2000).' (Garg, P & Garg, A 2014, p. 432)	Production
Software & Hardware Configuration	configuration	'In addition to this IT infrastructure, the software configuration has critical influence on the success of ERP implementation.' (Garg, P & Chauhan 2015, p. 1331)	Production
Software & Hardware Configuration	configuration	'Moreover, end-users involvement is helpful in the ERP configuration analysis and in data conversion as well as in system testing.' (Osman & Sahraoui 2019, p. 38)	Production
Software & Hardware Configuration	configuration	'But change management goes far beyond technical change or configuration requests and strikes at the heart of an organisation's culture and identity.' (Rabaa'i & Gammack 2016, p. 55)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Software & Hardware Configuration	configuration	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale- motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Software & Hardware Configuration	configuration	'Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Software & Hardware Configuration	configuration	'To prepare the technical system, Davenport (2000) describes the following processes: configuration, interface development, data standardization and conversion, testing and performance management.' (Seth, Goyal & Kiran 2015, p. 250)	Production
Software & Hardware Development	software development	'Important CSFs identified are: ERP team work and composition, top management support, business plan and vision, effective communication, project management, project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and evaluation of performance.' (Ali & Miller 2017, p. 675)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Software & Hardware Development	software development	'Lesser, but still important CSFs are, having a good business plan, vision, having a project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and the evaluation of performance (Markus, Axline, Petrie and Tanis, 2000; Bancroft et al., 1998; Bingi et al., 1999; Nah et al., 2001; Umble et al., 2003; Ehie and Madsen, 2005; Sarkar and Lee, 2003; Umble et al., 2003; Kim et al., 2005; Motwani et al., 2005; Nah and Delgado, 2006; Maguire et al., 2010).' (Ali & Miller 2017, p. 682)	Production
Software & Hardware Development	software development	'Two researchers conducted a research study on the success issues of ERP which identified ten successive issues through investigate ten selective articles which are: effective decision making, Business Plan and vision, project management, effective communication, testing and troubleshooting, appropriate business and legacy system, ERP teamwork and composition, top management support and software development (Nah and Lau, 2001).' (Anjum & Khan 2015, p. 628)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Software & Hardware Development	software development	'Software Development: Software and user interface development is in relation to change in software or interfaces to meet the organization and users' requirements include local languages.' (Chan 2013, p. 109)	Production
Software & Hardware Development	software development	'Developing software systems is an expensive, and often a difficult process as software development projects are affected by a series of problems, such as poor project management, cost and schedule overruns, poor quality software and under-motivated developers.' (Garg, P & Garg, A 2013, p. 500)	Production
Software & Hardware Development	software development	'Software development, testing, and troubleshooting To enjoy the full benefits of implementation, various ERP software or packages are required to integrate the ERP system into the organization [10].' (Ngai, Law & Wat 2008, p. 556)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Software & Hardware Development	software development	'In the project context, the term scope can refer to two components[41]: Product scope the features and functions that characterized product, service or result Project scope its work performed to deliver a product, service or result with specific features and functions From requirement and product scope definitions can conclude requirement is a component of product scope and the functional requirements are typically used in IT and software development to describe product scope, also project scope management deal with requirement collecting which help to validate and control scope[42].' (Osman & Sahraoui 2019, p. 39)	Production
Software & Hardware Development	software development	'Eleven critical factors were identified, such as ERP teamwork and composition, change management program and culture, top management support, business plan and vision, business process reengineering (BPR) and minimum customisation, effective communications, project management, software development, testing and troubleshooting, monitoring and evaluating performance, project champion, and appropriate business and IT legacy systems.' (Rabaa'i 2009, p. 6)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Software & Hardware Development	software development	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Software & Hardware Development	software modification	'To avoid ERP software modifications which were perceived as slowing down the project, the cause of risky bugs needing to be rewritten in an upgrade, many organizations were committed to a "vanilla" implementation [Al-Mudimigh 2007; Finney and Corbett 2007].' (Shaul & Tauber 2013, p. 9)	Production
Software & Hardware Development	system development	'The findings of our study reveal that 'appropriate business and IT legacy systems', 'business plan/vision/goals/justification', 'business process reengineering', 'change management culture and programme', 'communication', 'ERP teamwork and composition', 'monitoring and evaluation of performance', 'project champion', 'project management', 'software/system development, testing and troubleshooting', 'top management support', 'data management', 'ERP strategy and implementation methodology', 'ERP vendor', 'organizational characteristics', 'fit between ERP and business/process', 'national culture' and 'country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.' (Ngai, Law & Wat 2008, p. 548)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Steering Committee	steering committee	'They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.' (Ali & Miller 2017, p. 674)	Management
Steering Committee	steering committee	'Somers and Nelson (2004) showed that the importance of individual actors and activities within the company over the life cycle of an ERP system is not constant, for example a steering committee and change management lose importance in the later phases.' (Barth & Koch 2019, p. 659)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Steering Committee	steering committee	'Somers and Nelson (2001, 2004) also advocate the need to establish a steering committee comprised of senior management from different corporate functions, senior project management reps, and ERP end-users.' (Finney & Corbett 2007, p. 336)	Management
Steering Committee	steering committee	'Steering committee members should be involved in ERP selection, monitoring during implementation and management of outside consultants.' (Finney & Corbett 2007, p. 336)	Management
Steering Committee	steering committee	'This could be achieved by being an active member of a Steering Committee: a team comprised of the company's core hands-on representatives and decision makers, with effectively defining the goals and requirements of the ERP project.' (Garg, P & Agarwal 2014, p. 418)	Management
Steering Committee	steering committee	'Kamhawi, 2007 F6 Use of Steering Committee for control purpose Gupta & Raghunathan, 1989; Mabert et al.,2003; Browen et al.,2007; Ngai et al.,2008; Zhang et al.,2003.' (Khattak et al. 2013, p. 47)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Steering Committee	steering committee	'In all the cases, either successful or unsuccessful, the PMs were supposed to report to almost different personnel in their respective enterprises for example; to organizational head/chief, steering committee and senior manager of a business unit.' (Khattak et al. 2013, p. 53)	Management
Steering Committee	steering committee	'P6: All the organizations with successful cases of ERP system implementation, surveyed in the current study, properly constituted steering committees for the purpose of monitoring and controlling of the activities related to the ERP project implementation.' (Khattak et al. 2013, p. 59)	Management
Steering Committee	steering committee	'The steering committee was to be headed by different personnel in different enterprises i.e., in some cases it was to be headed by Chairman or President while in others CEO or GM or CIO was the head of the same.' (Khattak et al. 2013, p. 59)	Management
Steering Committee	steering committee	'The presence of steering committee was absolutely lacking in the enterprises where the ERP implementation got collapsed and did not accomplished on time and under/within allocated budget.' (Khattak et al. 2013, p. 60)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Steering Committee	steering committee	'In Chinese context, ERP project is seen as the utilization of such a project to promote deployment and automation of effective processes and to enhance organizational effectiveness to which the project management efforts of the steering committee are crucial.' (Khattak et al. 2013, p. 66)	Management
Steering Committee	steering committee	'Whereas, in Pakistani context the steering committee efforts for control purpose are less important as the controlled is mostly exercised by the project manager or top manager.' (Khattak et al. 2013, p. 66)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Steering Committee	steering committee	'The research concludes that: (1) Quality (adequacy) and quantity of training and education of personnel/users, role and effectiveness of management in reducing the users' resistance, use of steering committee for control purpose, top management support or involvement, clearly specified goals/objectives/scope regarding ERP system, ease of system's use and users' acceptance, vendor's support, project management, effective communication among the organizational members and a balanced team for ERP implementation are practically considered by the successful enterprises in China while planning and going for the implementation of the ERP system and are thus critical for the success of ERP systems implementation projects, ignoring of which may cause implementation failure in the Chinese organizations; (2) Some of the factors deemed imperative for ERP systems implementation success in the literature like; selection of a right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role of consultant, change management strategy and programs, competency in use of IT and IT infrastructure, business...' (Khattak et al. 2013, p. 68)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Steering Committee	steering committee	'A steering committee should be established with members committed to participate in project team meetings, to closely monitor the progress of the project, and to provide clear direction to the project [54,88].' (Ngai, Law & Wat 2008, p. 557)	Management
Steering Committee	steering committee	'For example, the Australian Vice Chancellor's Committee (AVCC) created the Core Australian Specification for Management and Administrative Computing (CASMAC) steering committee in 1991 (AVCC, 1996).' (Rabaa'i 2009, p. 3)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Steering Committee	steering committee	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale- motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Steering Committee	steering committee	'On the other hand, other factors referring to project management like steering committee and empowered decision makers were not recognized by end-users.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 68)	Management
Steering Committee	steering committee	'Such consequences can be avoided by open communication with top management, vendors, and consultants through the establishment of senior and professional steering committees, a balanced project team, and a "responsible" definition of success measures.' (Shaul & Tauber 2013, p. 19)	Management
Steering Committee	steering committee	'These activities are run by a professional steering committee in which "lowlevel" stakeholders get a chance to air their views and reduce uncertainties regarding business concerns.' (Shaul & Tauber 2013, p. 20)	Management
System Architecture	architecture	'At the operational level, Gable (1998) defines ERP as a "comprehensive packaged software solution, which seeks to integrate the complete range of business processes and functions in order to present a holistic view of the business from a single information and IT architecture".' (Ali & Miller 2017, p. 668)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
System Architecture	architecture	'They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.' (Ali & Miller 2017, p. 674)	Management
System Architecture	architecture	'In addition, the effect of other on-going projects, including the management of the overall IT architecture, and nonavailability of resources for organisational transformation, are the most critical risk factors for implementation.' (Ali & Miller 2017, p. 678)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
System Architecture	architecture	'Technical issues like system architecture, language, data modeling and ERP integration with other systems like Supply Chain Management (SCM) systems are other branches that have made a contribution.' (Basoglu, Daim & Kerimoglu 2007, p. 79)	Management
System Architecture	architecture	'It is critical to assess the IT readiness of the organization, including the architecture and skills (Tarafdar and Roy, 2003; Somers and Nelson, 2001; Somers and Nelson, 2004; Bajwa et al., 2004; Siriginidi, 2000a, b).' (Finney & Corbett 2007, p. 338)	Management
System Architecture	architecture	'This unique network architecture provides expert care to our patients and a level of confidence in receiving the latest medicine has to offer.' (Garg, P & Agarwal 2014, p. 407)	Management
System Architecture	architecture	'Therefore, it is critical to evaluate company's current IT readiness, including architecture and skills, before implementation.' (Osman & Sahraoui 2019, p. 39)	Management
System Architecture	architecture	'QUT uses an explicit Enterprise Architecture model as a tool for planning and prioritization to help achieve both strong ROI and ensure efficient business operations that are aligned to the blueprint.' (Rabaa'i & Gammack 2016, p. 56)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
System Architecture	architecture	'When QUTs Constellar hub was replaced with a service oriented architecture solution around 2011 the activity completion report noted a successful completion of the project with all project benefits realised.' (Rabaa'i & Gammack 2016, p. 56)	Management
System Architecture	architecture	'The recent direction has been towards a real time integration using a service oriented architecture such that every touchpoint for the student system communicates both ways using web services.' (Rabaa'i & Gammack 2016, p. 56)	Management
System Integration	integration	'The authors report risk factors such as loss of qualified IT experts after implementation, inaccurate master production schedules, user resistance, loss of ERP-related know-how, lack of vendor support, failure to produce an appropriate material requirement plan, and inefficient integration between modules are primary risk factors that can affect the viability of ERP projects.' (Ali & Miller 2017, p. 678)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
System Integration	integration	'They identify causes of ERP implementation failure as excessive customisation, dilemma of internal integration, poor understanding of business implications and requirements, lack of change management strategy, poor data quality, misalignment of IT with business, hidden costs, limited training, and lack of top management support.' (Ali & Miller 2017, p. 681)	Production
System Integration	integration	'Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline Organisational resistance Lack of organisational commitment Poor data accuracy Limited user involvement Mismatch between organisation requirements and functionalities offered Lack of readiness for integration Lack of focus on user education and training Excessive customisation Inadequate organisational analysis Costs Project duration Technical challenges Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.' (Ali & Miller 2017, p. 681)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
System Integration	integration	'Lack of proper integration and knowledge of business process reengineering are other problems of local solutions.' (Amid, Moalagh & Ravasan 2012, p. 229)	Production
System Integration	integration	'Through data integration, ERP systems eliminate counter-productive processes and cross-functional coordination problems that hinder the integration of organizations.' (Basoglu, Daim & Kerimoglu 2007, p. 73)	Production
System Integration	integration	'Technical issues like system architecture, language, data modeling and ERP integration with other systems like Supply Chain Management (SCM) systems are other branches that have made a contribution.' (Basoglu, Daim & Kerimoglu 2007, p. 79)	Production
System Integration	integration	'The architecture of the software facilitates transparent integration of modules providing flow of information amongall functions within the enterprise in a consistently visible manner (2002).' (Chan 2013, p. 104)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
System Integration	integration	'The main reasons among many others as to why the Chinese enterprises faced the kind of challenges include data maintenance and integration problems, system integration problems (Lai, 2006), the involvement of knowledgeable consultants in respective projects, selection of reputable vendors, low implementation experience, weak or unsophisticated IT infrastructure, lack of access to knowledge and human resource etc., to name some of few.' (Khattak et al. 2013, p. 43)	Production
System Integration	integration	'However, the integration of software is not an easy task, and should be managed properly.' (Ngai, Law & Wat 2008, p. 556)	Production
System Integration	integration	'The factors identified were management and leadership, visioning and planning, ERP package selection, communication process management, training and education, project management, legacy systems management, system integration, system testing, cultural and structural changes, and performance evaluation and management.' (Rabaa'i 2009, p. 6)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
System Integration	integration	'Hence, the integration of data from the organisation's wider system is essential in ensuring the successful implementation of an ERP system (e.g.' (Rabaa'i 2009, p. 11)	Production
System Integration	integration	'Other critical factors include visioning and planning, consultant selection and relationship, effective communication plan, ERP system selection, ERP systems integration, and post-implementation evaluation measures.' (Rabaa'i 2009, p. 11)	Production
System Integration	integration	'This paper aims to address different areas of emphasis, including: (i) ERP adoption decisions, (ii) ERP selection, (iii) customisation procedures, (iv) integration aspects, (v) role of consultants, and (vi) ERP system evaluation; each of which has been raised in the literature as an important area of interest, and all of which are among the most commonly reported challenges.' (Rabaa'i, Bandara & Gable 2009, p. 457)	Production
System Integration	integration	'US HEIs viewed ERP adoption as a method of gaining greater integration of their management systems to better manage increasingly complex operations (Frantz, 2001).' (Rabaa'i, Bandara & Gable 2009, p. 457)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
System Integration	integration	'While the interviews were far-ranging and insights rich and many, distillation of the evidence surfaced the following six main areas of emphasis: (i) ERP adoption decisions, (ii) ERP selection, (iii) customisation procedures, (iv) integration aspects, (v) role of consultants, and (vi) ERP system evaluation at QUT; each of which has been raised in the literature as an important area of interest, and all of which are among the most commonly reported challenges (e.g.' (Rabaa'i, Bandara & Gable 2009, p. 460)	Production
System Integration	integration	'Best-of-breed offers organisations more choice and flexibility with functionality, but can complicate integration and implementation (Miranda, 1999).' (Rabaa'i, Bandara & Gable 2009, p. 461)	Production
System Integration	integration	'Moreover, the integration of organisation- wide data is essential to ensure the successful implementation of an ERP system (Somers and Nelson, 2001).' (Rabaa'i, Bandara & Gable 2009, p. 463)	Production
System Integration	integration	'However, as suggested earlier, a best-of- breed approach has limitations, an obvious potential complication being integration of different vendors' modules and legacy modules.' (Rabaa'i, Bandara & Gable 2009, p. 463)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
System Integration	integration	'So, systems integration is working well at QUT, but I'm not totally satisfied as a number of our systems are still using batched or cycling run integration rather than using real-time integration." (The associate IT director at QUT, Personal Communication, 3rd of March, 2009).' (Rabaa'i, Bandara & Gable 2009, p. 463)	Production
System Integration	integration	'However, the integration can be done better; what we really would like to see is a real-time or immediate integration between the various systems." (The business manager of Archibus/FM, Personal Communication, 6th of November, 2008).' (Rabaa'i, Bandara & Gable 2009, p. 463)	Production
System Integration	integration	'Even though I think that the integration process between these systems can be done better, but I believe that our integration process is running smoothly." (The business manager of BEIMS, Personal Communication, 4th of Novermber, 2008).' (Rabaa'i, Bandara & Gable 2009, p. 464)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
System Integration	integration	'Also, the business manager of the Syllabus Plus, a system that prepares QUT's class and examination timetables, which was implemented at QUT in 1998, said: "Syllabus Plus is actually integrated with many systems at QUT, ERP packages and in-house built applications, which make the integration between these systems a bit problematic.' (Rabaa'i, Bandara & Gable 2009, p. 464)	Production
System Integration	integration	'However, the strength of the best-of-breed approach is you get the richest functionality in each of the area you are looking at, but the problem with that you then need to do your own integration.' (Rabaa'i, Bandara & Gable 2009, p. 464)	Production
System Integration	integration	'So this was the first stage of our integration process, where, for example, the Payroll system is interfaced with the Financials system.' (Rabaa'i, Bandara & Gable 2009, p. 464)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
System Integration	integration	'The second phase of the integration process we followed, is that you want the integration to be a bit more active, and therefore instead of interfacing the systems; you actually have some form of a tool, that's called a transformational tool, that allows to perform the integration in an active way.' (Rabaa'i, Bandara & Gable 2009, p. 464)	Production
System Integration	integration	'The associate IT director at QUT gave more examples in regards to systems integration at QUT, including: "As part of the new student implementation, we've decided that batched or cycling run integration is not sufficient.' (Rabaa'i, Bandara & Gable 2009, p. 464)	Production
System Integration	integration	'For example, if a student just got his student card, he expects that all the systems should recognise him as a student, so he wants to go to the library and borrow a book, that implies that you have real-time integration as an oppose to cycling run integration.' (Rabaa'i, Bandara & Gable 2009, p. 464)	Production
System Integration	integration	'However, QUT is looking at means to better improve system integration and have dedicated projects/ resources working on this issue.' (Rabaa'i, Bandara & Gable 2009, p. 464)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
System Integration	integration	'The Role of Consultants at QUT Consultants often play an essential role in ERP system selection, customisation and integration.' (Rabaa'i, Bandara & Gable 2009, p. 464)	Production
System Integration	integration	'The descriptive case study of Queensland University of Technology (QUT) provided details of the: (i) ERP adoption decisions and alternatives, (ii) ERP selection, (iii) customisation procedures, (iv) integration aspects, (v) role of consultants, and (vi) ERP system evaluation perceptions.' (Rabaa'i, Bandara & Gable 2009, p. 466)	Production
System Integration	integration	'Disruption to staff and resistance to received 'best practices', together with required training, data mapping, customisations and their support, complexity of integration with remaining legacy systems are all commonly reported, and are often ongoing issues post-implementation.' (Rabaa'i & AlJamal 2015, p. 86)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
System Integration	integration	'They are the few key areas where things must go right. . . " An earlier paper by this team (Ram, Corkindale and Wu, 2013) tabulated the relationships found in the literature between CSFs and implementation or performance output success to identify four factors consistently emerging as central, namely project management, training and education, business process re-engineering and system integration.' (Rabaa'i & AlJamal 2015, p. 87)	Production
System Integration	integration	'Similarly, on technical aspects, testing and system integration were perceived as generally effective, though there were substantial minorities in each sector who did not consider that departments had been integrated by the ERP.' (Rabaa'i & AlJamal 2015, p. 97)	Production
System Integration	integration	'Disruption to staff and resistance to received "best practices", together with required training, data mapping, customizations and their support, complexity of integration with remaining legacy systems are all commonly reported, and are often ongoing issues post-implementation.' (Rabaa'i & Gammack 2016, p. 46)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
System Integration	integration	'Their empirical study found that whilst training/education and system integration factor were critical for output performance, the former two (organizational) CSFs were essential for implementation success.' (Rabaa'i & Gammack 2016, p. 47)	Production
System Integration	integration	'In regards to project-related CSFs which are concerned with system and consultant selection, system integration, training, communication plan and team composition as well as general project management around these.' (Rabaa'i & Gammack 2016, p. 55)	Production
System Integration	integration	'The widespread usage of internet expanded the scope of ERP by providing inter-organizational integration (Eckhartz et al., 2010; Alimazighi & Bouhmadi, 2011; Grant et al., 2013).' (Saygili, Ozturkoglu & Kocakulah 2017, p. 58)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
System Integration	integration	'Critical success factors identified in Turkish studies Author (s) Critical Success Factors Baskak& Cetisli (2003) Top management support, business plan and vision, ERP teamwork, ERP package selection, change management, user training and education, effective communication, project management, data integration, software testing and troubleshooting, appropriate legacy systems, monitoring and evaluation of performance.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 62)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
System Integration	integration	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
System Integration	integration	'Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
System Integration	integration	'Moreover, key aspects like data conversion, integration and analysis provided by ERP applications are pointed out by end-users.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 69)	Production
System Integration	integration	'At present, focus is on integration of upstream and downstream partners through supply chain management information system (SCMIS).' (Seth, Goyal & Kiran 2015, p. 248)	Production
System Integration	integration	'However, King and Burgess [2008] found similarities between ERP and CRM implementations and between their respective CSFs as they both are large-scale integration technologies, and often are packages supplied by large software vendors.' (Shaul & Tauber 2013, p. 24)	Production
System Integration	integration	'Shaul and Tauber [2011] showed that SMEs, unlike LEs, face much greater constraints in terms of resources that can be committed to all stages of information gathering in order to reduce uncertainty, although the complexity and amount of IT functionality and integration requirements are often similar.' (Shaul & Tauber 2013, p. 25)	Production
System Security	security	'Also, non-functional aspects, such as performance, security, stability or reliability must at least reach the level from before (G, K).' (Barth & Koch 2019, p. 663)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
System Security	security	'Another important factor which is influenced by code modification is revision security.' (Barth & Koch 2019, p. 666)	Production
System Security	security	'Drawing from the literature, we found security, project management, and communication are the top three widely cited CSFs during implementation.' (Huang et al. 2021, p. 4683)	Production
System Security	security	'The most widely cited CSFs were found to be: security, project management, communication, compliance, network and the reaction of organization.' (Huang et al. 2021, p. 4685)	Production
System Security	security	'The most widely cited CSF is security [14, 15, 1921, 23, 28].' (Huang et al. 2021, p. 4685)	Production
System Security	security	'Companies that move to cloud ERP have little knowledge about how cloud providers employ security platforms, processes and procedures, which may raise security risk or information leakage.' (Huang et al. 2021, p. 4685)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
System Security	security	'The concerns, from the security point of view, when implementing Cloud ERP include: security breaches leading to confidential data being compromised, encryption, accountability, and maintenance issues [14].' (Huang et al. 2021, p. 4685)	Production
System Security	security	'Obviously, security breaches bring significant consequences to organizations; such as, leakage of user account details empowering attackers to access the confidential business information.' (Huang et al. 2021, p. 4685)	Production
System Security	security	'As such, strategies, policies, security tools and mechanisms to ensure security play an important role in the successful adoption and implementation of Cloud ERP [15].' (Huang et al. 2021, p. 4685)	Production
System Security	security	'Extrinsic factors include: compliance, network, and security as these CSFs are primarily controlled by the cloud vendor.' (Huang et al. 2021, p. 4686)	Production
System Security	security	'For example, Gupta and Misra [14] analyzed statistics and found network, compliance, security is positively related to the success of Cloud ERP implementation.' (Huang et al. 2021, p. 4687)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
System Security	security	'The indirect influences of security, compliance and network on the success implementation are also identified from the study of Gupta, Misra [15].' (Huang et al. 2021, p. 4688)	Production
System Security	security	'Discussion From the systematic literature review conducted into Cloud ERP implementation, we found that the top five most widely cited CSFs for the successful implementation of Cloud ERP are: security, project management, communication, compliance, and network.' (Huang et al. 2021, p. 4689)	Production
System Security	security	'For example, a high level of security and confidentiality is considered as one of the advantages of on-premise ERP, thus organizations usually do not consider security in their CSFs [35].' (Huang et al. 2021, p. 4689)	Production
System Security	security	'Accordingly, security is considered as the most important CSF for the successful implementation from an organizations' perspective.' (Huang et al. 2021, p. 4689)	Production
System Security	security	'This theme is in line with Hentschel, Leyh [16] who argued that security is the most frequently mentioned CSF by client organizations during the implementation and usage of cloud solutions.' (Huang et al. 2021, p. 4689)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
System Security	security	'However, security serves as an extrinsic factor and can be controlled by vendors.' (Huang et al. 2021, p. 4689)	Production
System Security	security	'According to Goel, Kiran [36], cloud providers have several resources to improve security solutions.' (Huang et al. 2021, p. 4689)	Production
System Security	security	'For example, although security is considered the most important CSF, accordingly to Mac-Anigboro and Usoro [41] and Kiadehi and Mohammadi [42], large organizations would place more emphasis on the security of data and information compared to SMEs.' (Huang et al. 2021, p. 4690)	Production
System Security	security	'However, a study conducted by Gupta, Misra [39] shows both large and small/medium sized organizations do not want to share important data with others, which means security and privacy of information is the top-most concern among both organizations.' (Huang et al. 2021, p. 4690)	Production
System Security	security	'Therefore, further research should be conducted to establish whether security and privacy issues are a concern by all types of organizations or only large-scale organizations.' (Huang et al. 2021, p. 4690)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
System Security	security	'The data flowing through the system are extremely valuable, and therefore, studies by Ngai et al. (2004), Warren and Hutchinson (2000), Premkumar (2000) and Bouchbout and Alimazighi (2008) included data security as one of the important technical factor for successful implementation of web-based SCM systems.' (Seth, Goyal & Kiran 2015, p. 251)	Production
System Security	security	'The technical factors that are critical to organizations in their adoption decision of Internet-based inter-organizational information systems (IBIS) was also studied by Soliman and Janz (2004) and Bouchbout and Alimazighi (2008) and suggested establishing costs, network reliability, data security, scalability and complexity as main factors that significantly affect the adoption decision of IBIS.' (Seth, Goyal & Kiran 2015, p. 252)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	attrition rate of project team	'Findings - Results suggest that 9 critical failure items namely Inadequate resources, Poor User involvement, Users' resistance to change, High Attrition rate of project team members, Lack of top management commitment, Poor project management, Inadequate project team composition, Ineffective organizational change management and Unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.' (Garg, P & Garg, A 2013, p. 496)	Production
Team Knowledge, Skills & Competencies	attrition rate of project team	'Pareto chart per factors for ERP failure Pareto analysis suggest that nine critical failure items namely inadequate resources, poor user involvement, users' resistance to change, higher attrition rate of project team members, Lack of top management commitment, Poor project management, inadequate project team composition, ineffective organizational change management, unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.' (Garg, P & Garg, A 2013, p. 507)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	balanced team	'Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.' (Finney & Corbett 2007, p. 340)	Production
Team Knowledge, Skills & Competencies	balanced team	'P20: A balanced team for ERP implementation particularly comprised of both business/ functional and IT personnel are positively related to ERP implementation success.' (Khattak et al. 2013, p. 49)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	balanced team	'The research concludes that: (1) Quality (adequacy) and quantity of training and education of personnel/users, role and effectiveness of management in reducing the users' resistance, use of steering committee for control purpose, top management support or involvement, clearly specified goals/objectives/scope regarding ERP system, ease of system's use and users' acceptance, vendor's support, project management, effective communication among the organizational members and a balanced team for ERP implementation are practically considered by the successful enterprises in China while planning and going for the implementation of the ERP system and are thus critical for the success of ERP systems implementation projects, ignoring of which may cause implementation failure in the Chinese organizations; (2) Some of the factors deemed imperative for ERP systems implementation success in the literature like; selection of a right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role of consultant, change management strategy and programs, competency in use of IT and IT infrastructure, business...' (Khattak et al. 2013, p. 68)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	changes in personnel	'Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline Organisational resistance Lack of organisational commitment Poor data accuracy Limited user involvement Mismatch between organisation requirements and functionalities offered Lack of readiness for integration Lack of focus on user education and training Excessive customisation Inadequate organisational analysis Costs Project duration Technical challenges Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.' (Ali & Miller 2017, p. 681)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	competency	'The research concludes that: (1) Quality (adequacy) and quantity of training and education of personnel/users, role and effectiveness of management in reducing the users' resistance, use of steering committee for control purpose, top management support or involvement, clearly specified goals/objectives/scope regarding ERP system, ease of system's use and users' acceptance, vendor's support, project management, effective communication among the organizational members and a balanced team for ERP implementation are practically considered by the successful enterprises in China while planning and going for the implementation of the ERP system and are thus critical for the success of ERP systems implementation projects, ignoring of which may cause implementation failure in the Chinese organizations; (2) Some of the factors deemed imperative for ERP systems implementation success in the literature like; selection of a right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role of consultant, change management strategy and programs, competency in use of IT and IT infrastructure, business...' (Khattak et al. 2013, p. 68)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	composition	'Important CSFs identified are: ERP team work and composition, top management support, business plan and vision, effective communication, project management, project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and evaluation of performance.' (Ali & Miller 2017, p. 675)	Production
Team Knowledge, Skills & Competencies	composition	'The most common causes of ERP implementation failures are a combination of poor planning and high software customisation (Scheer and Habbermann, 2000), lack of top management commitment; ineffective communication; insufficient training; lack of user support, poor project management, relying on legacy systems, inter-departmental conflicts, poor composition of project teams, failure in redesigning business processes and, lack of clarity about required changes.' (Ali & Miller 2017, p. 682)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	composition	'Findings - Results suggest that 9 critical failure items namely Inadequate resources, Poor User involvement, Users' resistance to change, High Attrition rate of project team members, Lack of top management commitment, Poor project management, Inadequate project team composition, Ineffective organizational change management and Unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.' (Garg, P & Garg, A 2013, p. 496)	Production
Team Knowledge, Skills & Competencies	composition	'Pareto chart per factors for ERP failure Pareto analysis suggest that nine critical failure items namely inadequate resources, poor user involvement, users' resistance to change, higher attrition rate of project team members, Lack of top management commitment, Poor project management, inadequate project team composition, ineffective organizational change management, unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.' (Garg, P & Garg, A 2013, p. 507)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	composition	'(4) The Project Management factor in this study is defined by team composition, project team competence, scope management, expectation management, communication within project team and budget control items which may affect the success of ERP implementation in Indian retail sector.' (Garg, P & Chauhan 2015, p. 1332)	Production
Team Knowledge, Skills & Competencies	composition	'According to the literature, the most studied factors were: Top Management Support, Effective Communication, Training, and Education, Business plan and vision, Project Management, BPR management, Change Management, Project team Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation, Technological Infrastructure, Legacy systems consideration.' (Mahraz, Benabbou & Berrado 2020, p. 112)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	composition	'The findings of our study reveal that 'appropriate business and IT legacy systems', 'business plan/vision/goals/justification', 'business process reengineering', 'change management culture and programme', 'communication', 'ERP teamwork and composition', 'monitoring and evaluation of performance', 'project champion', 'project management', 'software/system development, testing and troubleshooting', 'top management support', 'data management', 'ERP strategy and implementation methodology', 'ERP vendor', 'organizational characteristics', 'fit between ERP and business/process', 'national culture' and 'country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.' (Ngai, Law & Wat 2008, p. 548)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	composition	'Eleven critical factors were identified, such as ERP teamwork and composition, change management program and culture, top management support, business plan and vision, business process reengineering (BPR) and minimum customisation, effective communications, project management, software development, testing and troubleshooting, monitoring and evaluating performance, project champion, and appropriate business and IT legacy systems.' (Rabaa'i 2009, p. 6)	Production
Team Knowledge, Skills & Competencies	composition	'Based on the work by Markus and Tanis (2000), Nah and Delgado organised these factors into seven main categories: (1) Business plan and vision; (2) Change management; (3) Communication; (4) ERP team composition, skills, and compensation; (5) Project management; (6) Top management support and championship; and (7) System analysis, selection, and technical implementation.' (Rabaa'i 2009, p. 6)	Production
Team Knowledge, Skills & Competencies	composition	'Organisational factors traditionally found to affect implementation success, including management support, project communication, change management and team composition do not differentiate the public from the private sector, at least in the case of Jordan.' (Rabaa'i & AlJamal 2015, p. 97)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	composition	'Lack of benefit realisation is not simply attributable to technical or managerial aspects however, since most items specifically addressing required training, change and team composition largely showed that these aspects were adequately understood and implemented.' (Rabaa'i & AlJamal 2015, p. 97)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	composition	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale- motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	composition	'Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	good project management team	'The authors find that top management support, good project management teams, and good communications are the top three most important critical successful factors during implementation.' (Ali & Miller 2017, p. 666)	Production
Team Knowledge, Skills & Competencies	project team	'CSFs for successful ERP implementation are identified as top management support, presence of a champion, good communication with stakeholders, effective project planning, business process re-engineering (BPR), and using a business analyst on the project team (Bancroft et al., 1998; Bingi et al., 1999).' (Ali & Miller 2017, p. 674)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	project team	'They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.' (Ali & Miller 2017, p. 674)	Production
Team Knowledge, Skills & Competencies	project team	'The most common causes of ERP implementation failures are a combination of poor planning and high software customisation (Scheer and Habbermann, 2000), lack of top management commitment; ineffective communication; insufficient training; lack of user support, poor project management, relying on legacy systems, inter-departmental conflicts, poor composition of project teams, failure in redesigning business processes and, lack of clarity about required changes.' (Ali & Miller 2017, p. 682)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	project team	'Project management: The study of Suganthalakshmi and Mothuvelayuthan (2012), concluded that the formation of the project team has robust influence on the ERP execution process and two significant issues are the combination of third-party professionals within the team and the preservation within the firm with the pertinent ERP knowledge.' (Anjum & Khan 2015, p. 630)	Production
Team Knowledge, Skills & Competencies	project team	'Lack of management support, poor organizational culture, communication problems, financial management problems, lack of clarity on scope, project management problems, poor project team, ERP software misfit, poor solution implementer performance, poor quality of testing, outdated it infrastructure, lack of training, highly customized ERP, poor process design, lack of user involvement, resistance to change, unrealistic expectations are the main failure factors that need to be analyzed in detail.' (Coşkun et al. 2022, p. 3)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	project team	'It should not be confused that many factors such as "budget", "communication", and "project team" are not examined in the "Project Management Problems" category since they are examined in separate categories because many articles analyzed in this study show that project management is handled as project coordination.' (Coşkun et al. 2022, p. 13)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	project team	'Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.' (Finney & Corbett 2007, p. 340)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	project team	'Findings - Results suggest that 9 critical failure items namely Inadequate resources, Poor User involvement, Users' resistance to change, High Attrition rate of project team members, Lack of top management commitment, Poor project management, Inadequate project team composition, Ineffective organizational change management and Unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.' (Garg, P & Garg, A 2013, p. 496)	Production
Team Knowledge, Skills & Competencies	project team	'These factors include, but not limited to, poor consultant effectiveness, ERP software misfit, unrealistic expectations from top management concerning the ERP systems, over-reliance on heavy customization, poor quality of Business Process Reengineering (BPR), high turnover rate of project team members, poor IT Infrastructure, functionality problems with the system, unclear concept of the nature and use of the ERP system from the users perspective, too tight project schedule, lack of formal communication, part-time dedication, etc.' (Garg, P & Garg, A 2013, p. 498)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	project team	'Pareto chart per factors for ERP failure Pareto analysis suggest that nine critical failure items namely inadequate resources, poor user involvement, users' resistance to change, higher attrition rate of project team members, Lack of top management commitment, Poor project management, inadequate project team composition, ineffective organizational change management, unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.' (Garg, P & Garg, A 2013, p. 507)	Production
Team Knowledge, Skills & Competencies	project team	'(4) The Project Management factor in this study is defined by team composition, project team competence, scope management, expectation management, communication within project team and budget control items which may affect the success of ERP implementation in Indian retail sector.' (Garg, P & Chauhan 2015, p. 1332)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	project team	'Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) • Communication within the company • Organization resistance • Project budget • Project management • Implementation strategy • Strategic goals and objectives • Business process reengineering • organizational culture • knowledge base of the company • Project planning and control • Facilitating conditions • Organization size • The vision of the organization • Readiness of organizations • Clarity of potential cost • User involvement • Selection of vendor/consult ant • Project team • Top management support • Training of user • Trust on vendor • Performance expectancy • Effort expectancy • Social influence • Age • Gender • Highest degree attained • Selection of ERP package • IT infrastructure • Data integrity and system testing.' (Huang et al. 2021, p. 4686)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	project team	'According to the literature, the most studied factors were: Top Management Support, Effective Communication, Training, and Education, Business plan and vision, Project Management, BPR management, Change Management, Project team Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation, Technological Infrastructure, Legacy systems consideration.' (Mahraz, Benabbou & Berrado 2020, p. 112)	Production
Team Knowledge, Skills & Competencies	project team	'In the private sector the project team was rarely perceived to consist of the best employees, whereas attitudes on this were more evenly distributed in the public sector.' (Rabaa'i & AlJamal 2015, p. 96)	Production
Team Knowledge, Skills & Competencies	project team	'Project teams may not have wished to include end users for their own reasons, and end users themselves may have been unwilling to change.' (Rabaa'i & AlJamal 2015, p. 98)	Production
Team Knowledge, Skills & Competencies	project team	'It should be noted that involving people with both business and technical knowledge into the project team is critical to achieve success (M Al-Mashari, AlMudimigh, & Zairi, 2003; Bajwa, Garcia, & Mooney, 2004; King & Burgess, 2006).' (Ravasan & Mansouri 2014, p. 45)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	project team	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale- motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	project team	'Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	project team	'In addition, the project team should be empowered to define a clear program and required resources, set realistic milestones, and ensure interdepartmental cooperation.' (Shaul & Tauber 2013, p. 19)	Production
Team Knowledge, Skills & Competencies	project team	'Such consequences can be avoided by open communication with top management, vendors, and consultants through the establishment of senior and professional steering committees, a balanced project team, and a "responsible" definition of success measures.' (Shaul & Tauber 2013, p. 19)	Production
Team Knowledge, Skills & Competencies	project team	'• IT infrastructure • System Training and knowledge transfer • Over-dependence on detailed and heavy customization • High turnover rate of project team members • Business process re-engineering • User's resistance to transform • ERP system misfit Considering these critical factors, specifically affecting the agricultural business sectors in Malaysia, there are a few possible suggestions proposed.' (Shukor, Sheikhi & Nashir 2020, p. 2055)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	team competence	'They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.' (Ali & Miller 2017, p. 674)	Production
Team Knowledge, Skills & Competencies	team competence	'(4) The Project Management factor in this study is defined by team composition, project team competence, scope management, expectation management, communication within project team and budget control items which may affect the success of ERP implementation in Indian retail sector.' (Garg, P & Chauhan 2015, p. 1332)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	team competence	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	team competence	'Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	team work	'Important CSFs identified are: ERP team work and composition, top management support, business plan and vision, effective communication, project management, project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and evaluation of performance.' (Ali & Miller 2017, p. 675)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	team work	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale- motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	teamwork	'According to the literature, the most studied factors were: Top Management Support, Effective Communication, Training, and Education, Business plan and vision, Project Management, BPR management, Change Management, Project team Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation, Technological Infrastructure, Legacy systems consideration.' (Mahraz, Benabbou & Berrado 2020, p. 112)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	teamwork	'The findings of our study reveal that 'appropriate business and IT legacy systems', 'business plan/vision/goals/justification', 'business process reengineering', 'change management culture and programme', 'communication', 'ERP teamwork and composition', 'monitoring and evaluation of performance', 'project champion', 'project management', 'software/system development, testing and troubleshooting', 'top management support', 'data management', 'ERP strategy and implementation methodology', 'ERP vendor', 'organizational characteristics', 'fit between ERP and business/process', 'national culture' and 'country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.' (Ngai, Law & Wat 2008, p. 548)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	teamwork	'Eleven critical factors were identified, such as ERP teamwork and composition, change management program and culture, top management support, business plan and vision, business process reengineering (BPR) and minimum customisation, effective communications, project management, software development, testing and troubleshooting, monitoring and evaluating performance, project champion, and appropriate business and IT legacy systems.' (Rabaa'i 2009, p. 6)	Production
Team Knowledge, Skills & Competencies	teamwork	'Critical success factors identified in Turkish studies Author (s) Critical Success Factors Baskak& Cetisli (2003) Top management support, business plan and vision, ERP teamwork, ERP package selection, change management, user training and education, effective communication, project management, data integration, software testing and troubleshooting, appropriate legacy systems, monitoring and evaluation of performance.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 62)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Team Knowledge, Skills & Competencies	turnover rate of project team	'These factors include, but not limited to, poor consultant effectiveness, ERP software misfit, unrealistic expectations from top management concerning the ERP systems, over-reliance on heavy customization, poor quality of Business Process Reengineering (BPR), high turnover rate of project team members, poor IT Infrastructure, functionality problems with the system, unclear concept of the nature and use of the ERP system from the users perspective, too tight project schedule, lack of formal communication, part-time dedication, etc.' (Garg, P & Garg, A 2013, p. 498)	Production
Team Knowledge, Skills & Competencies	turnover rate of project team	'• IT infrastructure • System Training and knowledge transfer • Over-dependence on detailed and heavy customization • High turnover rate of project team members • Business process re-engineering • User's resistance to transform • ERP system misfit Considering these critical factors, specifically affecting the agricultural business sectors in Malaysia, there are a few possible suggestions proposed.' (Shukor, Sheikhi & Nashir 2020, p. 2055)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Technical Challenges	technical challenges	'Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline Organisational resistance Lack of organisational commitment Poor data accuracy Limited user involvement Mismatch between organisation requirements and functionalities offered Lack of readiness for integration Lack of focus on user education and training Excessive customisation Inadequate organisational analysis Costs Project duration Technical challenges Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.' (Ali & Miller 2017, p. 681)	Production
Technical Challenges	technical challenges	'The executives are required to have a complete understanding of the technical challenges involved in adopting a new enterprisewide system, and proposed three elements to consider a) network upgrade, b) hardware upgrade and c) providing a global support.' (Mahraz, Benabbou & Berrado 2020, p. 114)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Technical Challenges	technical issues	'They observe that vendor failure to adapt to local culture, BPR, managing local human resources, lack of information sharing, failure to understand cultural characteristics, lack of adaptability towards a changing business and economic environment, lack of cost control functions (i.e. adapting to changing costs), and failure to understand technical issues are the main causes of ERP implementation failure.' (Ali & Miller 2017, p. 681)	Production
Technical Challenges	technical issues	'In another country-specific study, Amid et al. (2012) examine critical failure factors in Iranian companies and identify and classify failure attributes as vendors and consultants, human resources, managerial, project management, processes, organisational, and technical issues (Table V).' (Ali & Miller 2017, p. 681)	Production
Technical Challenges	technical issues	'One of the main problems in ERP projects is focusing on technical and financial aspects of a project and neglecting to take into account the non-technical issues like people [70], while many ERP studies indicate that failure is largely due to human resources issues, rather than technical factors.' (Amid, Moalagh & Ravasan 2012, p. 232)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Technical Challenges	technical issues	'The last failure component relates to technical issues.' (Amid, Moalagh & Ravasan 2012, p. 233)	Production
Technical Challenges	technical issues	'It has been noted that one of the main problems in ERP projects, is focusing on technical and financial aspects of a project and neglecting to take into account the nontechnical issues like people [70], while many ERP studies indicate that failure is largely due to organizational and social, rather than technical factors.' (Amid, Moalagh & Ravasan 2012, p. 233)	Production
Technical Challenges	technical issues	'Technical issues like system architecture, language, data modeling and ERP integration with other systems like Supply Chain Management (SCM) systems are other branches that have made a contribution.' (Basoglu, Daim & Kerimoglu 2007, p. 79)	Production
Technical Challenges	technical issues	'Despite the benefits that can be achieved from a successful ERP implementation, project managers focus on the technical and financial aspects of a project and neglect to take into account the non-technical issues like people (Genoulaz & Millet, 2006).' (Basoglu, Daim & Kerimoglu 2007, p. 79)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Technical Challenges	technical issues	'About that issue, Xue et al. (2005) claimed that cultural, environmental and technical issues play an important role on leader brands' failure in Chinese companies.' (Basoglu, Daim & Kerimoglu 2007, p. 83)	Production
Technical Challenges	technical issues	'Project Team: The project team members must have acceptable knowledge in the business processes and technical issues of the software.' (Chan 2013, p. 108)	Production
Technical Challenges	technical issues	'The organization where the implementation went unsuccessful, the vendors played very limited and ineffective role as their response rate in rectifying the technical issues was also quite low.' (Khattak et al. 2013, p. 62)	Production
Technical Challenges	technical issues	'Therefore, the consultant should have multiple skills covering functional, technical issues and in-depth knowledge of the software[17]- [19] Additionally, project manager appointed should be experienced, mix of business and IT knowledge, strong leadership skills and have adequate authority to manage all aspects of the project.' (Osman & Sahraoui 2019, p. 37)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Technical Challenges	technical issues	'ERP failure factors and categories Failure Categories Failure Factors C4: Project Management F1: Conflicts between organization and consultants/ vendor C5: Technical F2: High rate of system customization C5: Technical F3: Data management issues C2: Human Resources F4: Inadequate education and training C2: Human Resources F5: Inadequate user involvement C2: Human Resources F6: Ineffective communications system C3: Organizational F7: Internal conflicts between departments C2: Human Resources F8: Inadequate change management C3: Organizational F9: Lack of performance measurement system C3: Organizational F10: Misfit between organization culture and ERP system C3: Organizational F11: Misfit between organization structure and ERP system C3: Organizational F12: Misfits between the IT and business strategies C1: Environmental F13: Environmental pressures C3: Organizational F14: Poor business process reengineering C1: Environmental F15: Poor consultant C4: Project Management F16: Poor project management C4: Project Management F17: Poor risk management C3: Organizational F18: Poor top management support C5: Technical F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...' (Ravasan & Mansouri 2014, p. 42)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Technical Challenges	technical issues	'One of the main problems in ERP projects is focusing on technical and financial aspects of a project and neglecting to take into account the non-technical issues like people (Amid, et al., 2012; Botta-Genoulaz & Millet, 2006), while many ERP studies indicate that failure is largely due to human resources issues, rather than technical factors.' (Ravasan & Mansouri 2014, p. 45)	Production
Technical Challenges	technical issues	'Then, we have scenario 5 or technical category (high rate of system customization, data management issues, IT technical issues, poor quality of testing) in the last order of effect size on failure modes.' (Ravasan & Mansouri 2014, p. 45)	Production
Technical Challenges	technical issues	'The reason often cited are the technical issues involved in implementing these systems.' (Seth, Goyal & Kiran 2015, p. 249)	Production
Test Automation	test automation	'Even though test automation tools for ERP systems are expensive and are often not able to cover individually developed parts of the system, test automation is a way to reach a high standardization of the testing process.' (Barth & Koch 2019, p. 665)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Testing	testing	'Important CSFs identified are: ERP team work and composition, top management support, business plan and vision, effective communication, project management, project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and evaluation of performance.' (Ali & Miller 2017, p. 675)	Production
Testing	testing	'Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) identify several other attributes associated with implementation failures, including approaching ERP implementation from an excessively functional perspective, inappropriately cutting the scope of the project, eliminating user training, inadequate testing, not improving business processes initially, underestimating data quality problems, fragile human capital, and data migration problems.' (Ali & Miller 2017, p. 680)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Testing	testing	'Lesser, but still important CSFs are, having a good business plan, vision, having a project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and the evaluation of performance (Markus, Axline, Petrie and Tanis, 2000; Bancroft et al., 1998; Bingi et al., 1999; Nah et al., 2001; Umble et al., 2003; Ehie and Madsen, 2005; Sarkar and Lee, 2003; Umble et al., 2003; Kim et al., 2005; Motwani et al., 2005; Nah and Delgado, 2006; Maguire et al., 2010).' (Ali & Miller 2017, p. 682)	Production
Testing	testing	'Two researchers conducted a research study on the success issues of ERP which identified ten successive issues through investigate ten selective articles which are: effective decision making, Business Plan and vision, project management, effective communication, testing and troubleshooting, appropriate business and legacy system, ERP teamwork and composition, top management support and software development (Nah and Lau, 2001).' (Anjum & Khan 2015, p. 628)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Testing	testing	'The Big Bang implementation strategy needs synchronized implementation of manifold modules of ERP systems, whereas, phased implementation includes developing, testing, designing and installing dissimilar modules of the similar ERP package.' (Anjum & Khan 2015, p. 629)	Production
Testing	testing	'The respective ERP software upgrade phase consists of 11 sub-phases, namely design of an upgrade project methodology, research of upgrade options, develop a business case, full assessment of modifications in the current version and technical environment, full assessments of the new functionality and technical requirements in each (potential) upgrade option, impact analysis between the new upgrade version and the existing version, install the new version onto the development system, construct the new system, thorough testing of the upgrade system, trial upgrades, and conversion or go live.' (Barth & Koch 2019, p. 661)	Production
Testing	testing	'(5) System testing: system testing is one of the most important tasks to ensure an unobstructed operation of the ERP system after the upgrade procedure (L).' (Barth & Koch 2019, p. 665)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Testing	testing	'Even though test automation tools for ERP systems are expensive and are often not able to cover individually developed parts of the system, test automation is a way to reach a high standardization of the testing process.' (Barth & Koch 2019, p. 665)	Production
Testing	testing	'System testing should not only focus on functional testing, but non-functional factors, such as performance and reliability, have to be part of the process.' (Barth & Koch 2019, p. 665)	Production
Testing	testing	'H proposes to integrate key users not only in the planning phase but also in the testing phase as they are able to deliver valuable input for the definition of test scenarios and test cases (B).' (Barth & Koch 2019, p. 666)	Production
Testing	testing	'This leads to the next success factor, system testing, which should not only be executed by IT staff but rather by key users and process owners, who bring along process knowledge and therefore, can guarantee correct functionality.' (Barth & Koch 2019, p. 669)	Production
Testing	testing	'Many factors, such as project management, team composition, communication, system testing and external support, are crucial for ERP implementation projects as well as for upgrade projects.' (Barth & Koch 2019, p. 670)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Testing	testing	'Lack of management support, poor organizational culture, communication problems, financial management problems, lack of clarity on scope, project management problems, poor project team, ERP software misfit, poor solution implementer performance, poor quality of testing, outdated it infrastructure, lack of training, highly customized ERP, poor process design, lack of user involvement, resistance to change, unrealistic expectations are the main failure factors that need to be analyzed in detail.' (Coşkun et al. 2022, p. 3)	Production
Testing	testing	'During the final stages of the implementation process, the project team should consider the inclusion of testing exercises (Kumar et al., 2002; Nah et al., 2001; Al-Mashari et al., 2003) as well as simulation exercises before the system "goes live" (Yusuf et al., 2004).' (Finney & Corbett 2007, p. 339)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Testing	testing	'Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.' (Finney & Corbett 2007, p. 340)	Production
Testing	testing	'Testing and troubleshooting of the ERP implementation process is important due to ERP's critical role and complexity.' (Garg, P & Garg, A 2014, p. 441)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Testing	testing	'In contrast, except for a few papers e.g., Peng and Nunes [8] Hasan, Miah [9], limited research has been reported to examine the post- implementation issues of Cloud ERP including critical processes such as testing and checking reliability of systems, or evaluating the benefits of system implementations.' (Huang et al. 2021, p. 4683)	Production
Testing	testing	'Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) • Communication within the company • Organization resistance • Project budget • Project management • Implementation strategy • Strategic goals and objectives • Business process reengineering • organizational culture • knowledge base of the company • Project planning and control • Facilitating conditions • Organization size • The vision of the organization • Readiness of organizations • Clarity of potential cost • User involvement • Selection of vendor/consult ant • Project team • Top management support • Training of user • Trust on vendor • Performance expectancy • Effort expectancy • Social influence • Age • Gender • Highest degree attained • Selection of ERP package • IT infrastructure • Data integrity and system testing.' (Huang et al. 2021, p. 4686)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Testing	testing	'The findings of our study reveal that 'appropriate business and IT legacy systems', 'business plan/vision/goals/justification', 'business process reengineering', 'change management culture and programme', 'communication', 'ERP teamwork and composition', 'monitoring and evaluation of performance', 'project champion', 'project management', 'software/system development, testing and troubleshooting', 'top management support', 'data management', 'ERP strategy and implementation methodology', 'ERP vendor', 'organizational characteristics', 'fit between ERP and business/process', 'national culture' and 'country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.' (Ngai, Law & Wat 2008, p. 548)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Testing	testing	'Eleven critical factors were identified, such as ERP teamwork and composition, change management program and culture, top management support, business plan and vision, business process reengineering (BPR) and minimum customisation, effective communications, project management, software development, testing and troubleshooting, monitoring and evaluating performance, project champion, and appropriate business and IT legacy systems.' (Rabaa'i 2009, p. 6)	Production
Testing	testing	'The factors identified were management and leadership, visioning and planning, ERP package selection, communication process management, training and education, project management, legacy systems management, system integration, system testing, cultural and structural changes, and performance evaluation and management.' (Rabaa'i 2009, p. 6)	Production
Testing	testing	'3 Note: Other critical success factors were found in the reviewed articles, such as: system testing, building a business case, and empowered decision makers.' (Rabaa'i 2009, p. 7)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Testing	testing	'Similarly, on technical aspects, testing and system integration were perceived as generally effective, though there were substantial minorities in each sector who did not consider that departments had been integrated by the ERP.' (Rabaa'i & AlJamal 2015, p. 97)	Production
Testing	testing	'Critical success factors identified in Turkish studies Author (s) Critical Success Factors Baskak& Cetisli (2003) Top management support, business plan and vision, ERP teamwork, ERP package selection, change management, user training and education, effective communication, project management, data integration, software testing and troubleshooting, appropriate legacy systems, monitoring and evaluation of performance.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 62)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Testing	testing	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Time	milestone	'Therefore, it involves not only the planning stages, but also the allocating of responsibilities to various players, the definition of milestones and critical paths, training and human resource planning, and finally the determination of measures of success (Nah et al., 2001).' (Finney & Corbett 2007, p. 336)	Production
Time	milestone	'In addition, the project team should be empowered to define a clear program and required resources, set realistic milestones, and ensure interdepartmental cooperation.' (Shaul & Tauber 2013, p. 19)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Time	project duration	'Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline Organisational resistance Lack of organisational commitment Poor data accuracy Limited user involvement Mismatch between organisation requirements and functionalities offered Lack of readiness for integration Lack of focus on user education and training Excessive customisation Inadequate organisational analysis Costs Project duration Technical challenges Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.' (Ali & Miller 2017, p. 681)	Production
Time	schedule	'The authors report risk factors such as loss of qualified IT experts after implementation, inaccurate master production schedules, user resistance, loss of ERP-related know-how, lack of vendor support, failure to produce an appropriate material requirement plan, and inefficient integration between modules are primary risk factors that can affect the viability of ERP projects.' (Ali & Miller 2017, p. 678)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Time	schedule	'These factors include, but not limited to, poor consultant effectiveness, ERP software misfit, unrealistic expectations from top management concerning the ERP systems, over-reliance on heavy customization, poor quality of Business Process Reengineering (BPR), high turnover rate of project team members, poor IT Infrastructure, functionality problems with the system, unclear concept of the nature and use of the ERP system from the users perspective, too tight project schedule, lack of formal communication, part-time dedication, etc.' (Garg, P & Garg, A 2013, p. 498)	Production
Time	schedule	'Developing software systems is an expensive, and often a difficult process as software development projects are affected by a series of problems, such as poor project management, cost and schedule overruns, poor quality software and under-motivated developers.' (Garg, P & Garg, A 2013, p. 500)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Time	schedule	'As Bradley (2008) argued that a project could be said successful only if it is got to be completed within the scheduled time, allocated budget and bringing positive impact on the entire organization therefore, on the basis of the same criteria cases 1,2,3,4.5,6,8,9,10 & 12 were classed as successful and cases 7 & 11 were termed as unsuccessful.' (Khattak et al. 2013, p. 53)	Production
Time	schedule	'For ERP implementation, a clear and welldefined project plan, including the goals, objectives, strategy, scope, and schedule of the project, are significant issues in project management.' (Ngai, Law & Wat 2008, p. 557)	Production
Time	schedule	'Such difficulties can be more than pain or inconvenience: reports consistently note that the majority of ERP implementations fail, with cost and schedule overruns, non-realisation of benefits, failure to recoup costs, and satisfaction below 502013).' (Rabaa'i & AlJamal 2015, p. 86)	Production
Time	schedule	'Customisation increases project time, ruins schedules, introduce new bugs into the system, and make the upgrade to new release harder (Shehab et al. 2004).' (Rabaa'i & AlJamal 2015, p. 98)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Time	scheduling	'Findings - Results suggest that 9 critical failure items namely Inadequate resources, Poor User involvement, Users' resistance to change, High Attrition rate of project team members, Lack of top management commitment, Poor project management, Inadequate project team composition, Ineffective organizational change management and Unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.' (Garg, P & Garg, A 2013, p. 496)	Production
Time	scheduling	'Pareto chart per factors for ERP failure Pareto analysis suggest that nine critical failure items namely inadequate resources, poor user involvement, users' resistance to change, higher attrition rate of project team members, Lack of top management commitment, Poor project management, inadequate project team composition, ineffective organizational change management, unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.' (Garg, P & Garg, A 2013, p. 507)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Time	time	'Summarising, Velcu (2010), using an analytical approach to investigate ERP system implementations, reports that when ERP system implementation strategies are aligned with business strategy, it is more likely that ERP implementation will be completed on budget and on time.' (Ali & Miller 2017, p. 678)	Production
Time	time	'C states: "Projects have to meet time, budget and scope targets to be called successful." H, on the other hand, thinks time is not the main priority in ERP upgrade projects, as long as there is a usable system in place and productivity is not endangered.' (Barth & Koch 2019, p. 663)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Time	time	'Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.' (Finney & Corbett 2007, p. 340)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Time	time	'These factors include, but not limited to, poor consultant effectiveness, ERP software misfit, unrealistic expectations from top management concerning the ERP systems, over-reliance on heavy customization, poor quality of Business Process Reengineering (BPR), high turnover rate of project team members, poor IT Infrastructure, functionality problems with the system, unclear concept of the nature and use of the ERP system from the users perspective, too tight project schedule, lack of formal communication, part-time dedication, etc.' (Garg, P & Garg, A 2013, p. 498)	Production
Time	time	'Several essential CSFs have been turned into valid and measurable constructs covering both technical and organisational factors (Bhatti, 2005), Many studies around this time detailed other specific CSFs applicable in implementation, but lacked attention to stakeholder perspective and change management aspects (Finney and Corbett, 2007).' (Rabaa'i & AlJamal 2015, p. 87)	Production
Time	time	'Both sectors also showed a similar profile on implementation time with only 11up to 6 months late and 44(Rabaa'i & AlJamal 2015, p. 92)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Time	time	'Customisation increases project time, ruins schedules, introduce new bugs into the system, and make the upgrade to new release harder (Shehab et al. 2004).' (Rabaa'i & AlJamal 2015, p. 98)	Production
Time	time	'Public organisations have more rigid hierarchies and structures, as well as more bureaucracy generally, and with consensus decision-making also delaying the process considerably, the deep culture of public sector organisations affects timely implementation.' (Rabaa'i & AlJamal 2015, p. 98)	Production
Time	time	'Generally, it is believed that the project is partially failed because it is not completed within time and/or budget (process failure), the ERP systems do not live up to user expectations (expectation failure), and there is no match between ERP systems and the planned objectives (correspondence failure).' (Ravasan & Mansouri 2014, p. 40)	Production
Time	time	'...mentation evaluation 22 implementation time 46 national culture 23 management of expectations 47 country related functional requirements 24 project management 48 centralization' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Time	time	'Fourth, deploy supporting tools to control the data quality process by monitoring all dimensions, that is, amount, accuracy, timeliness, completeness, consistency, accessibility, and multiple sources of the same data.' (Shaul & Tauber 2013, p. 19)	Production
Tools	tool	'They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.' (Ali & Miller 2017, p. 674)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Tools	tool	'A strategic partnership with the software vendor enables using implementation tools such as process modeling, templates for specific business practices or packages of software, services and support, as well as bestpractices (Somers and Nelson, 2004).' (Barth & Koch 2019, p. 659)	Production
Tools	tool	'Even though test automation tools for ERP systems are expensive and are often not able to cover individually developed parts of the system, test automation is a way to reach a high standardization of the testing process.' (Barth & Koch 2019, p. 665)	Production
Tools	tool	'This stage might involve business process change techniques such as business process modeling (Al-Mudimigh et al., 2001; Holland and Light, 1999) or other vendor development tools (Somers and Nelson, 2001, 2004).' (Finney & Corbett 2007, p. 338)	Production
Tools	tool	'As such, strategies, policies, security tools and mechanisms to ensure security play an important role in the successful adoption and implementation of Cloud ERP [15].' (Huang et al. 2021, p. 4685)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Tools	tool	'In addition, an organization can reduce the cost of implementation, gain other benefits from partnerships with the vendor, and use the vendor's customization tools [69].' (Ngai, Law & Wat 2008, p. 555)	Production
Tools	tool	'Organizations should provide a customized training and education programme that provides employees with tools and practical experience needed to integrate new processes, roles, and responsibilities; along with training in the differences between the new technology and the old technology to ensure a successful transition [12].' (Ngai, Law & Wat 2008, p. 558)	Production
Tools	tool	'A business process is "comprised of the people who conduct it, the tools they use to assist them, the procedures they follow and the flows of material and information between the various people, groups and subactivities".' (Osman & Sahraoui 2019, p. 38)	Production
Tools	tool	'Reduce trouble shooting and project risk risk management which involves developing proper troubleshooting tools, adequate skills and techniques and in relation to the CSF use of consultants, working closely with vendors and consultants when something is wrong in the system [4].' (Osman & Sahraoui 2019, p. 38)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Tools	tool	'We've bought a product called Constaller Hub; it's a tool that you can run nightly, hourly or every five minutes, to achieve that kind of integration, we have been using this product for more than five years" (The associate IT director at QUT, Personal Communication, 3rd of March, 2009).' (Rabaa'i, Bandara & Gable 2009, p. 464)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Tools	tool	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Tools	tool	'Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Production

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Tools	tool	'Sub-factors designated pertaining to vendors are ongoing vendor support, ERP vendor relations and support of vendors' development tools.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 68)	Production
Tools	tool	'Fourth, deploy supporting tools to control the data quality process by monitoring all dimensions, that is, amount, accuracy, timeliness, completeness, consistency, accessibility, and multiple sources of the same data.' (Shaul & Tauber 2013, p. 19)	Production
Top Management Support	top management	'The authors find that top management support, good project management teams, and good communications are the top three most important critical successful factors during implementation.' (Ali & Miller 2017, p. 666)	Management
Top Management Support	top management	'Surprisingly, the role of top management support is found to be less important than that provided by users (Maditinos et al., 2011).' (Ali & Miller 2017, p. 673)	Management
Top Management Support	top management	'CSFs for successful ERP implementation are identified as top management support, presence of a champion, good communication with stakeholders, effective project planning, business process re-engineering (BPR), and using a business analyst on the project team (Bancroft et al., 1998; Bingi et al., 1999).' (Ali & Miller 2017, p. 674)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Top Management Support	top management	'They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.' (Ali & Miller 2017, p. 674)	Management
Top Management Support	top management	'Important CSFs identified are: ERP team work and composition, top management support, business plan and vision, effective communication, project management, project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and evaluation of performance.' (Ali & Miller 2017, p. 675)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Top Management Support	top management	'CSFs identified for successful implementation are: a clear understanding of strategic goals, top management commitment and support, organisational change management strategy, good implementation team, data accuracy, extensive education and training, focussed performance measures, and multi-site issues.' (Ali & Miller 2017, p. 675)	Management
Top Management Support	top management	'They identify causes of ERP implementation failure as excessive customisation, dilemma of internal integration, poor understanding of business implications and requirements, lack of change management strategy, poor data quality, misalignment of IT with business, hidden costs, limited training, and lack of top management support.' (Ali & Miller 2017, p. 681)	Management
Top Management Support	top management	'The most common causes of ERP implementation failures are a combination of poor planning and high software customisation (Scheer and Habbermann, 2000), lack of top management commitment; ineffective communication; insufficient training; lack of user support, poor project management, relying on legacy systems, inter-departmental conflicts, poor composition of project teams, failure in redesigning business processes and, lack of clarity about required changes.' (Ali & Miller 2017, p. 682)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Top Management Support	top management	'The study founds a significant association of technological, strategic, project management, people, top management support and communication factor with ERP implementation.' (Anjum & Khan 2015, p. 628)	Management
Top Management Support	top management	'Strategic: Top management support, business plan and vision have been frequently recognized as the most significant and critical success factors in ERP system execution projects (Somers and Nelson, 2001).' (Anjum & Khan 2015, p. 629)	Management
Top Management Support	top management	'Top management support is the level of obligation by senior staff in the organization of the project in terms of their own association and the motivation to distribute important managerial resources (Slevin and Pinto, 1987).' (Anjum & Khan 2015, p. 629)	Management
Top Management Support	top management	'Work practices, poor data quality, BPR activities, customization of the ERP system, internal staff adequacy, training, top management support, quality of consultants are the main problems (Genoulaz & Millet, 2006).' (Basoglu, Daim & Kerimoglu 2007, p. 89)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Top Management Support	top management	'The results of this study show that "Managers and employees readiness to change", "Top management Support", "Business Process Reengineering", "Software and user interface development" and "Change management" are five top critical success factors.' (Chan 2013, p. 109)	Management
Top Management Support	top management	'In this study, the dimension of "internal environment" includes four factors (top management support, business process reengineering, organizational culture, change management).' (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1255)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Top Management Support	top management	'Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.' (Finney & Corbett 2007, p. 340)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Top Management Support	top management	'Findings - Results suggest that 9 critical failure items namely Inadequate resources, Poor User involvement, Users' resistance to change, High Attrition rate of project team members, Lack of top management commitment, Poor project management, Inadequate project team composition, Ineffective organizational change management and Unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.' (Garg, P & Garg, A 2013, p. 496)	Management
Top Management Support	top management	'These factors include, but not limited to, poor consultant effectiveness, ERP software misfit, unrealistic expectations from top management concerning the ERP systems, over-reliance on heavy customization, poor quality of Business Process Reengineering (BPR), high turnover rate of project team members, poor IT Infrastructure, functionality problems with the system, unclear concept of the nature and use of the ERP system from the users perspective, too tight project schedule, lack of formal communication, part-time dedication, etc.' (Garg, P & Garg, A 2013, p. 498)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Top Management Support	top management	'Pareto chart per factors for ERP failure Pareto analysis suggest that nine critical failure items namely inadequate resources, poor user involvement, users' resistance to change, higher attrition rate of project team members, Lack of top management commitment, Poor project management, inadequate project team composition, ineffective organizational change management, unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.' (Garg, P & Garg, A 2013, p. 507)	Management
Top Management Support	top management	'(1) The "Organizational" factor in this study is defined by business plan and vision, top management support, business process reengineering, ERP product selection, selection of implementation partner/consultants and enterprise wide communication plan items which may affect the success of ERP implementation in Indian retail sector.' (Garg, P & Chauhan 2015, p. 1327)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Top Management Support	top management	'Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) • Communication within the company • Organization resistance • Project budget • Project management • Implementation strategy • Strategic goals and objectives • Business process reengineering • organizational culture • knowledge base of the company • Project planning and control • Facilitating conditions • Organization size • The vision of the organization • Readiness of organizations • Clarity of potential cost • User involvement • Selection of vendor/consult ant • Project team • Top management support • Training of user • Trust on vendor • Performance expectancy • Effort expectancy • Social influence • Age • Gender • Highest degree attained • Selection of ERP package • IT infrastructure • Data integrity and system testing.' (Huang et al. 2021, p. 4686)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Top Management Support	top management	'The research concludes that: (1) Quality (adequacy) and quantity of training and education of personnel/users, role and effectiveness of management in reducing the users' resistance, use of steering committee for control purpose, top management support or involvement, clearly specified goals/objectives/scope regarding ERP system, ease of system's use and users' acceptance, vendor's support, project management, effective communication among the organizational members and a balanced team for ERP implementation are practically considered by the successful enterprises in China while planning and going for the implementation of the ERP system and are thus critical for the success of ERP systems implementation projects, ignoring of which may cause implementation failure in the Chinese organizations; (2) Some of the factors deemed imperative for ERP systems implementation success in the literature like; selection of a right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role of consultant, change management strategy and programs, competency in use of IT and IT infrastructure, business...' (Khattak et al. 2013, p. 68)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Top Management Support	top management	'According to the literature, the most studied factors were: Top Management Support, Effective Communication, Training, and Education, Business plan and vision, Project Management, BPR management, Change Management, Project team Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation, Technological Infrastructure, Legacy systems consideration.' (Mahraz, Benabbou & Berrado 2020, p. 112)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Top Management Support	top management	'The findings of our study reveal that 'appropriate business and IT legacy systems', 'business plan/vision/goals/justification', 'business process reengineering', 'change management culture and programme', 'communication', 'ERP teamwork and composition', 'monitoring and evaluation of performance', 'project champion', 'project management', 'software/system development, testing and troubleshooting', 'top management support', 'data management', 'ERP strategy and implementation methodology', 'ERP vendor', 'organizational characteristics', 'fit between ERP and business/process', 'national culture' and 'country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.' (Ngai, Law & Wat 2008, p. 548)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Top Management Support	top management	'Eleven critical factors were identified, such as ERP teamwork and composition, change management program and culture, top management support, business plan and vision, business process reengineering (BPR) and minimum customisation, effective communications, project management, software development, testing and troubleshooting, monitoring and evaluating performance, project champion, and appropriate business and IT legacy systems.' (Rabaa'i 2009, p. 6)	Management
Top Management Support	top management	'Based on the work by Markus and Tanis (2000), Nah and Delgado organised these factors into seven main categories: (1) Business plan and vision; (2) Change management; (3) Communication; (4) ERP team composition, skills, and compensation; (5) Project management; (6) Top management support and championship; and (7) System analysis, selection, and technical implementation.' (Rabaa'i 2009, p. 6)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Top Management Support	top management	'The critical success factors consistently identified in the literature include top management support, the presence of a champion, good communication with all stakeholders, effective project management, reengineering of business processes, an understanding of corporate cultural change, and the use of business analysts on the project team.' (Rabaa'i & AlJamal 2015, p. 88)	Management
Top Management Support	top management	'In Jordan, and indeed most Arabic countries, this may be explained by the convention that top management consider themselves to have more important obligations, responsibilities, and meetings.' (Rabaa'i & AlJamal 2015, p. 98)	Management
Top Management Support	top management	'Consequently, top management often develop report mechanisms to keep them informed of a project's progress without any actual and deep involvement in the project.' (Rabaa'i & AlJamal 2015, p. 98)	Management
Top Management Support	top management	'In Jordan, critical decisions and approvals are only taken by top management, thus, project managers do not have access or control over financial resources without approval from top management.' (Rabaa'i & AlJamal 2015, p. 98)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Top Management Support	top management	'ERP failure factors and categories Failure Categories Failure Factors C4: Project Management F1: Conflicts between organization and consultants/ vendor C5: Technical F2: High rate of system customization C5: Technical F3: Data management issues C2: Human Resources F4: Inadequate education and training C2: Human Resources F5: Inadequate user involvement C2: Human Resources F6: Ineffective communications system C3: Organizational F7: Internal conflicts between departments C2: Human Resources F8: Inadequate change management C3: Organizational F9: Lack of performance measurement system C3: Organizational F10: Misfit between organization culture and ERP system C3: Organizational F11: Misfit between organization structure and ERP system C3: Organizational F12: Misfits between the IT and business strategies C1: Environmental F13: Environmental pressures C3: Organizational F14: Poor business process reengineering C1: Environmental F15: Poor consultant C4: Project Management F16: Poor project management C4: Project Management F17: Poor risk management C3: Organizational F18: Poor top management support C5: Technical F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...' (Ravasan & Mansouri 2014, p. 42)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Top Management Support	top management	'Critical success factors identified in Turkish studies Author (s) Critical Success Factors Baskak& Cetisli (2003) Top management support, business plan and vision, ERP teamwork, ERP package selection, change management, user training and education, effective communication, project management, data integration, software testing and troubleshooting, appropriate legacy systems, monitoring and evaluation of performance.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 62)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Top Management Support	top management	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale- motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Top Management Support	top management	'Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Top Management Support	top management	'The proposed model confirms that following factors play a significant role during implementation of SCMIS—top management support, user involvement, pre-implementation analysis, user training, change management, data accuracy and communication.' (Seth, Goyal & Kiran 2015, p. 248)	Management
Top Management Support	top management	'Organizations where top management is committed for IOS and relationship are bound to be more successful as they will allocate more financial and human resources.' (Seth, Goyal & Kiran 2015, p. 250)	Management
Top Management Support	top management	'According to the regression analysis on the successful implementation of SCMIS, as shown in Table 8, factors that have significant impact at 5 per cent or higher level include top management support, user support and involvement, training and education, change management, pre-implementation analysis, communication and data Table 7.' (Seth, Goyal & Kiran 2015, p. 256)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Top Management Support	top management	'Note: Numbers are the beta weight and **p ¡ 0.05. confirms that these CSVs has a significant impact, and in order to have a successful implementation of SCMIS, top management support, user support and involvement, preimplementation analysis, training, change management, data accuracy and communication are critical.' (Seth, Goyal & Kiran 2015, p. 257)	Management
Top Management Support	top management	'The findings of this study support the proposed hypothesis that top management support has a positive impact on SCMIS implementation success (H1c), so an increase in support of top management will lead to more successful implementation.' (Seth, Goyal & Kiran 2015, p. 258)	Management
Top Management Support	top management	'Such consequences can be avoided by open communication with top management, vendors, and consultants through the establishment of senior and professional steering committees, a balanced project team, and a "responsible" definition of success measures.' (Shaul & Tauber 2013, p. 19)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Uncertainty Avoidance (-)	uncertainty avoidance	'Examining ERP acceptance challenges from a Saudi Arabian cultural perspective, Alhirz and Sajeev (2015) find power distance and individualism have no significant impact on acceptance, however, uncertainty avoidance have a significant influence.' (Ali & Miller 2017, p. 673)	Management
User Involvement	client	'Al-Mashari et al. (2003) and Al Mudimigh et al. (2001) mention the need for communication and consultation with various key stakeholders, but in particular with the client.' (Finney & Corbett 2007, p. 338)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
User Involvement	client	'Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.' (Finney & Corbett 2007, p. 340)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
User Involvement	customer	'On the other hand, according to Wagner and Newell (2004), best practices of ERP systems may be designed with a software company working in a partnering relationship with a key industry customer to develop a package to meet the unique requirements of a particular industry.' (Basoglu, Daim & Kerimoglu 2007, p. 74)	Collection, Use
User Involvement	customer	'Similarly, Skok and Legge (2002, p. 82) have argued that there is a need to "increase the multiplicity of relevant stakeholders" to include groups such as customers, suppliers, wholesalers, etc.' (Finney & Corbett 2007, p. 343)	Collection, Use
User Involvement	user involvement	'In addition, user involvement and satisfaction has a positive influence on ERP systems, leading to system acceptance.' (Ali & Miller 2017, p. 673)	Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
User Involvement	user involvement	'Wilson et al. (1994) Sun et al. (1997) Soh et al. (2000) Langenwalter (2000) Markus, Tanis and Fenema (2000) and Markus, Axline, Petrie and Tanis (2000) Motwani et al. (2002) Sammons and Adam (2005) Kamhawi (2008) Changes in personnel Lack of discipline Organisational resistance Lack of organisational commitment Poor data accuracy Limited user involvement Mismatch between organisation requirements and functionalities offered Lack of readiness for integration Lack of focus on user education and training Excessive customisation Inadequate organisational analysis Costs Project duration Technical challenges Management changes Table V. Implementation failure attributes JEIM 30,4 682 8.' (Ali & Miller 2017, p. 681)	Collection, Use
User Involvement	user involvement	'In this study, the dimension of "end- users" includes three factors (user involvement, training and education, employee skills).' (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1256)	Collection, Use
User Involvement	user involvement	'User involvement is one of the most cited critical success factors in ERP implementation projects [14] [33].' (Chatzoglou, Chatzoudes & Apostolopoulou 2016, p. 1256)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
User Involvement	user involvement	'Lack of management support, poor organizational culture, communication problems, financial management problems, lack of clarity on scope, project management problems, poor project team, ERP software misfit, poor solution implementer performance, poor quality of testing, outdated it infrastructure, lack of training, highly customized ERP, poor process design, lack of user involvement, resistance to change, unrealistic expectations are the main failure factors that need to be analyzed in detail.' (Coşkun et al. 2022, p. 3)	Collection, Use
User Involvement	user involvement	'For example, "Lack of User Involvement" causes "Customer & Employee Dissatisfaction".' (Coşkun et al. 2022, p. 13)	Collection, Use
User Involvement	user involvement	'Findings - Results suggest that 9 critical failure items namely Inadequate resources, Poor User involvement, Users' resistance to change, High Attrition rate of project team members, Lack of top management commitment, Poor project management, Inadequate project team composition, Ineffective organizational change management and Unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.' (Garg, P & Garg, A 2013, p. 496)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
User Involvement	user involvement	'Pareto chart per factors for ERP failure Pareto analysis suggest that nine critical failure items namely inadequate resources, poor user involvement, users' resistance to change, higher attrition rate of project team members, Lack of top management commitment, Poor project management, inadequate project team composition, ineffective organizational change management, unrealistic project scheduling have a high impact on ERP implementation and therefore deserve serious attention in the process of ERP implementation.' (Garg, P & Garg, A 2013, p. 507)	Collection, Use
User Involvement	user involvement	'On the similar fashion Rasmy and Esteves also described that user involvement in defining ERP systems needs and user involvement in the implementation of ERP systems are important aspects, The user involvement in ERP systems will be helpful to get user requirements, better quality of the system and increase system usage (Rasmy et al., 2005; Esteves et al., 2003) (People).' (Garg, P & Garg, A 2013, p. 508)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
User Involvement	user involvement	'It is reported that factor 1 could be labeled as "Top management commitment," factor 2 could be labeled as "User involvement," factor 3 could be labeled as "Business process reengineering," factor 4 could be labeled as "Project management" and while the last factor could be labeled as "ERP teamwork and composition." The 24 items are further employed in order to perform reliability test, bivariate correlation and multiple regression analysis.' (Garg, P & Agarwal 2014, p. 411)	Collection, Use
User Involvement	user involvement	'User involvement is essential because it improves perceived control through participating in the whole project plan.' (Garg, P & Garg, A 2014, p. 433)	Collection, Use
User Involvement	user involvement	'User involvement is one of the most cited critical success factors in ERP implementation projects (Zhang et al., 2005).' (Garg, P & Garg, A 2014, p. 433)	Collection, Use
User Involvement	user involvement	'User involvement increase user satisfaction and acceptance by developing realistic expectations about system capabilities (Esteves and Casanovas, 2003): H3.' (Garg, P & Garg, A 2014, p. 433)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
User Involvement	user involvement	'Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) • Communication within the company • Organization resistance • Project budget • Project management • Implementation strategy • Strategic goals and objectives • Business process reengineering • organizational culture • knowledge base of the company • Project planning and control • Facilitating conditions • Organization size • The vision of the organization • Readiness of organizations • Clarity of potential cost • User involvement • Selection of vendor/consult ant • Project team • Top management support • Training of user • Trust on vendor • Performance expectancy • Effort expectancy • Social influence • Age • Gender • Highest degree attained • Selection of ERP package • IT infrastructure • Data integrity and system testing.' (Huang et al. 2021, p. 4686)	Collection, Use
User Involvement	user involvement	'For example, according to Gupta and Misra [14], user involvement refers to employees of organizations who should be involved during the implementation stage to be familiar with Cloud ERP systems.' (Huang et al. 2021, p. 4687)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
User Involvement	user involvement	'Problems in companies under study include poor communication, lack of support from department heads, poor training services from vendor, and low user involvement.' (Ngai, Law & Wat 2008, p. 559)	Collection, Use
User Involvement	user involvement	'Other problems reported are lack of BPR [87], poor communications, lack of support from management, limited level of user involvement, poor training from vendors [90], and weakness in existing IT infrastructure [41].' (Ngai, Law & Wat 2008, p. 559)	Collection, Use
User Involvement	user involvement	'[13] Change program should cover end user involvement and training in the implementation stage and they must be regularly supported from top management or implementation team.' (Osman & Sahraoui 2019, p. 38)	Collection, Use
User Involvement	user involvement	'User involvement It is definitely essential for the success of ERP adoption.' (Osman & Sahraoui 2019, p. 38)	Collection, Use
User Involvement	user involvement	'The user involvement can hence, be referred to a psychological state of the individual as the importance and personal relevance of the system to the user [28].' (Osman & Sahraoui 2019, p. 38)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
User Involvement	user involvement	'Therefore, the user involvement and participation are considered critical success factors as they will result in a better fit of user requirements and enhancing a better system quality, use and acceptance 2.2.8.' (Osman & Sahraoui 2019, p. 38)	Collection, Use
User Involvement	user involvement	'Low ease of use could be due to the complexity and unfamiliarity of the interfaces, ineffective end-user education and training, inadequate user involvement and participation in the implementation, or simply user rejection of the technology.' (Rabaa'i & AlJamal 2015, p. 97)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
User Involvement	user involvement	'ERP failure factors and categories Failure Categories Failure Factors C4: Project Management F1: Conflicts between organization and consultants/ vendor C5: Technical F2: High rate of system customization C5: Technical F3: Data management issues C2: Human Resources F4: Inadequate education and training C2: Human Resources F5: Inadequate user involvement C2: Human Resources F6: Ineffective communications system C3: Organizational F7: Internal conflicts between departments C2: Human Resources F8: Inadequate change management C3: Organizational F9: Lack of performance measurement system C3: Organizational F10: Misfit between organization culture and ERP system C3: Organizational F11: Misfit between organization structure and ERP system C3: Organizational F12: Misfits between the IT and business strategies C1: Environmental F13: Environmental pressures C3: Organizational F14: Poor business process reengineering C1: Environmental F15: Poor consultant C4: Project Management F16: Poor project management C4: Project Management F17: Poor risk management C3: Organizational F18: Poor top management support C5: Technical F19: IT Technical issues C2: Human Resources F20: Language barriers C4:...' (Ravasan & Mansouri 2014, p. 42)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
User Involvement	user involvement	'The proposed model confirms that following factors play a significant role during implementation of SCMIS—top management support, user involvement, pre-implementation analysis, user training, change management, data accuracy and communication.' (Seth, Goyal & Kiran 2015, p. 248)	Collection, Use
User Involvement	user involvement	'Human Dimension These factors are among the most important (critical) as the system being implemented is for the employees; therefore, the user involvement and participation should start much before the implementation takes place as has been emphasized by various studies (Bingi et al., 1999; Holland et al., 1999).' (Seth, Goyal & Kiran 2015, p. 251)	Collection, Use
User Involvement	user involvement	'Next, the study supported the proposed hypothesis that user involvement and support has a positive impact on SCMIS implementation success (H1e), so an increase in user involvement will lead to more successful implementation.' (Seth, Goyal & Kiran 2015, p. 258)	Collection, Use

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vendor Support	partnership with vendor	'They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.' (Ali & Miller 2017, p. 674)	Management
Vendor Support	software vendor	'A strategic partnership with the software vendor enables using implementation tools such as process modeling, templates for specific business practices or packages of software, services and support, as well as bestpractices (Somers and Nelson, 2004).' (Barth & Koch 2019, p. 659)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vendor Support	software vendor	'The project team can eventually be equipped with comprehensive and useful information on the current business processes and how information is accessed and flows across divisions or systems since most ERP software vendors make assumptions about management philosophy and business practices.' (Shaul & Tauber 2013, p. 18)	Management
Vendor Support	software vendor	'Thus, buying an enterprise application means much more than purchasing software and involves buying into the software vendor's view of best practices for many of the company's processes.' (Shaul & Tauber 2013, p. 18)	Management
Vendor Support	software vendor	'However, King and Burgess [2008] found similarities between ERP and CRM implementations and between their respective CSFs as they both are large-scale integration technologies, and often are packages supplied by large software vendors.' (Shaul & Tauber 2013, p. 24)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vendor Support	use of vendor	'They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.' (Ali & Miller 2017, p. 674)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vendor Support	use of vendor	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vendor Support	vendor support	'The authors report risk factors such as loss of qualified IT experts after implementation, inaccurate master production schedules, user resistance, loss of ERP-related know-how, lack of vendor support, failure to produce an appropriate material requirement plan, and inefficient integration between modules are primary risk factors that can affect the viability of ERP projects.' (Ali & Miller 2017, p. 678)	Management
Vendor Support	vendor support	'According to a large-scale European multi- country survey the most important factor is the best fit with current business processes, respectively, organization (Hong and Kim, 2002; Ngai et al., 2008), followed by flexibility, cost, user-friendliness, scalability and vendor support (van Everdingen et al., 2000).' (Barth & Koch 2019, p. 659)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vendor Support	vendor support	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale-motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vendor Support	vendor support	'Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vendor Support	vendor support	'Sub-factors designated pertaining to vendors are ongoing vendor support, ERP vendor relations and support of vendors' development tools.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 68)	Management
Vendor Support	vendor support	'Provide ongoing vendor support including technical assistance, emergency maintenance, updates, and special user training.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 74)	Management
Vendor Support	vendor support	'The major upgrade phase typically requires a considerable amount of resources, both financial and human, and a need to keep pace with ERP vendor upgrades to guarantee vendor support for the system by providing upgrades to "fix" outstanding "bugs," current best practices, or design weaknesses [Agerfalk et al. 2009].' (Shaul & Tauber 2013, p. 22)	Management
Vision, Goals & Objectives	alignment	'They identify causes of ERP implementation failure as excessive customisation, dilemma of internal integration, poor understanding of business implications and requirements, lack of change management strategy, poor data quality, misalignment of IT with business, hidden costs, limited training, and lack of top management support.' (Ali & Miller 2017, p. 681)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	business plan	'Important CSFs identified are: ERP team work and composition, top management support, business plan and vision, effective communication, project management, project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and evaluation of performance.' (Ali & Miller 2017, p. 675)	Management
Vision, Goals & Objectives	business plan	'Lesser, but still important CSFs are, having a good business plan, vision, having a project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and the evaluation of performance (Markus, Axline, Petrie and Tanis, 2000; Bancroft et al., 1998; Bingi et al., 1999; Nah et al., 2001; Umble et al., 2003; Ehie and Madsen, 2005; Sarkar and Lee, 2003; Umble et al., 2003; Kim et al., 2005; Motwani et al., 2005; Nah and Delgado, 2006; Maguire et al., 2010).' (Ali & Miller 2017, p. 682)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	business plan	'Strategic: Top management support, business plan and vision have been frequently recognized as the most significant and critical success factors in ERP system execution projects (Somers and Nelson, 2001).' (Anjum & Khan 2015, p. 629)	Management
Vision, Goals & Objectives	business plan	'P7: The level of integration of business planning with IT or ERP planning is positively related to project implementation success.' (Khattak et al. 2013, p. 48)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	business plan	'The research concludes that: (1) Quality (adequacy) and quantity of training and education of personnel/users, role and effectiveness of management in reducing the users' resistance, use of steering committee for control purpose, top management support or involvement, clearly specified goals/objectives/scope regarding ERP system, ease of system's use and users' acceptance, vendor's support, project management, effective communication among the organizational members and a balanced team for ERP implementation are practically considered by the successful enterprises in China while planning and going for the implementation of the ERP system and are thus critical for the success of ERP systems implementation projects, ignoring of which may cause implementation failure in the Chinese organizations; (2) Some of the factors deemed imperative for ERP systems implementation success in the literature like; selection of a right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role of consultant, change management strategy and programs, competency in use of IT and IT infrastructure, business...' (Khattak et al. 2013, p. 68)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	business plan	'According to the literature, the most studied factors were: Top Management Support, Effective Communication, Training, and Education, Business plan and vision, Project Management, BPR management, Change Management, Project team Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation, Technological Infrastructure, Legacy systems consideration.' (Mahraz, Benabbou & Berrado 2020, p. 112)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	business plan	'The findings of our study reveal that 'appropriate business and IT legacy systems', 'business plan/vision/goals/justification', 'business process reengineering', 'change management culture and programme', 'communication', 'ERP teamwork and composition', 'monitoring and evaluation of performance', 'project champion', 'project management', 'software/system development, testing and troubleshooting', 'top management support', 'data management', 'ERP strategy and implementation methodology', 'ERP vendor', 'organizational characteristics', 'fit between ERP and business/process', 'national culture' and 'country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.' (Ngai, Law & Wat 2008, p. 548)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	business plan	'Eleven critical factors were identified, such as ERP teamwork and composition, change management program and culture, top management support, business plan and vision, business process reengineering (BPR) and minimum customisation, effective communications, project management, software development, testing and troubleshooting, monitoring and evaluating performance, project champion, and appropriate business and IT legacy systems.' (Rabaa'i 2009, p. 6)	Management
Vision, Goals & Objectives	business plan	'Based on the work by Markus and Tanis (2000), Nah and Delgado organised these factors into seven main categories: (1) Business plan and vision; (2) Change management; (3) Communication; (4) ERP team composition, skills, and compensation; (5) Project management; (6) Top management support and championship; and (7) System analysis, selection, and technical implementation.' (Rabaa'i 2009, p. 6)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	business plan	'Critical success factors identified in Turkish studies Author (s) Critical Success Factors Baskak& Cetisli (2003) Top management support, business plan and vision, ERP teamwork, ERP package selection, change management, user training and education, effective communication, project management, data integration, software testing and troubleshooting, appropriate legacy systems, monitoring and evaluation of performance.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 62)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	business plan	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale- motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	business plan	'Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	business strategy	'Summarising, Velcu (2010), using an analytical approach to investigate ERP system implementations, reports that when ERP system implementation strategies are aligned with business strategy, it is more likely that ERP implementation will be completed on budget and on time.' (Ali & Miller 2017, p. 678)	Management
Vision, Goals & Objectives	goals	'They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.' (Ali & Miller 2017, p. 674)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	goals	'CSFs identified for successful implementation are: a clear understanding of strategic goals, top management commitment and support, organisational change management strategy, good implementation team, data accuracy, extensive education and training, focussed performance measures, and multi-site issues.' (Ali & Miller 2017, p. 675)	Management
Vision, Goals & Objectives	goals	'Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) • Communication within the company • Organization resistance • Project budget • Project management • Implementation strategy • Strategic goals and objectives • Business process reengineering • organizational culture • knowledge base of the company • Project planning and control • Facilitating conditions • Organization size • The vision of the organization • Readiness of organizations • Clarity of potential cost • User involvement • Selection of vendor/consult ant • Project team • Top management support • Training of user • Trust on vendor • Performance expectancy • Effort expectancy • Social influence • Age • Gender • Highest degree attained • Selection of ERP package • IT infrastructure • Data integrity and system testing.' (Huang et al. 2021, p. 4686)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	goals	'The research concludes that: (1) Quality (adequacy) and quantity of training and education of personnel/users, role and effectiveness of management in reducing the users' resistance, use of steering committee for control purpose, top management support or involvement, clearly specified goals/objectives/scope regarding ERP system, ease of system's use and users' acceptance, vendor's support, project management, effective communication among the organizational members and a balanced team for ERP implementation are practically considered by the successful enterprises in China while planning and going for the implementation of the ERP system and are thus critical for the success of ERP systems implementation projects, ignoring of which may cause implementation failure in the Chinese organizations; (2) Some of the factors deemed imperative for ERP systems implementation success in the literature like; selection of a right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role of consultant, change management strategy and programs, competency in use of IT and IT infrastructure, business...' (Khattak et al. 2013, p. 68)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	goals	'The findings of our study reveal that 'appropriate business and IT legacy systems', 'business plan/vision/goals/justification', 'business process reengineering', 'change management culture and programme', 'communication', 'ERP teamwork and composition', 'monitoring and evaluation of performance', 'project champion', 'project management', 'software/system development, testing and troubleshooting', 'top management support', 'data management', 'ERP strategy and implementation methodology', 'ERP vendor', 'organizational characteristics', 'fit between ERP and business/process', 'national culture' and 'country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.' (Ngai, Law & Wat 2008, p. 548)	Management
Vision, Goals & Objectives	goals	'Although the project communication planning was considered ineffective in both sectors, majorities in both sectors saw ERP implementations as fitting the organisation's vision and largely agreed the project goals and benefits were clear.' (Rabaa'i & AlJamal 2015, p. 97)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	goals	'Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	goals	'Educate and communicate management goals and long-term perspectives in implementations requiring new business process reengineering.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 74)	Management
Vision, Goals & Objectives	goals	'Chang [2004] indicates that: (a) 90ERP implementations are delivered late or are over budget, (b) enterprise initiatives show a 67considered negative or unsuccessful, (c) more than 40projects fail.' (Shaul & Tauber 2013, p. 2)	Management
Vision, Goals & Objectives	misalignment of IT with business	'They identify causes of ERP implementation failure as excessive customisation, dilemma of internal integration, poor understanding of business implications and requirements, lack of change management strategy, poor data quality, misalignment of IT with business, hidden costs, limited training, and lack of top management support.' (Ali & Miller 2017, p. 681)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	objectives	'They rate CSFs by a degree of importance during ERP implementation as follows: (1) top management support; (2) project team competence; (3) inter-departmental cooperation; (4) clear goals and objectives; (5) project management; (6) inter-departmental communication; (7) management of expectation; (8) project champion; (9) vendors' support; (10) careful package selection; (11) data analysis and conversion; (12) dedicated resources; (13) use of steering committee; (14) user training on software; (15) education on new business processes; (16) BPR; (17) minimal customisation; (18) architecture choices; (19) change management; (20) partnership with vendors; (21) use of vendors' tool; and (22) use of consultant.' (Ali & Miller 2017, p. 674)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	objectives	'Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) • Communication within the company • Organization resistance • Project budget • Project management • Implementation strategy • Strategic goals and objectives • Business process reengineering • organizational culture • knowledge base of the company • Project planning and control • Facilitating conditions • Organization size • The vision of the organization • Readiness of organizations • Clarity of potential cost • User involvement • Selection of vendor/consult ant • Project team • Top management support • Training of user • Trust on vendor • Performance expectancy • Effort expectancy • Social influence • Age • Gender • Highest degree attained • Selection of ERP package • IT infrastructure • Data integrity and system testing.' (Huang et al. 2021, p. 4686)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	objectives	'The research concludes that: (1) Quality (adequacy) and quantity of training and education of personnel/users, role and effectiveness of management in reducing the users' resistance, use of steering committee for control purpose, top management support or involvement, clearly specified goals/objectives/scope regarding ERP system, ease of system's use and users' acceptance, vendor's support, project management, effective communication among the organizational members and a balanced team for ERP implementation are practically considered by the successful enterprises in China while planning and going for the implementation of the ERP system and are thus critical for the success of ERP systems implementation projects, ignoring of which may cause implementation failure in the Chinese organizations; (2) Some of the factors deemed imperative for ERP systems implementation success in the literature like; selection of a right full time project manager with extensive experience, presence/existence of a champion, integration of business planning with IT/ERP planning, use and role of consultant, change management strategy and programs, competency in use of IT and IT infrastructure, business...' (Khattak et al. 2013, p. 68)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	objectives	'The whole organisation should be aware of the project scope, its objectives and activities as an effective communication plan will have a direct impact on the success of the change management program (Mendel, 1999).' (Rabaa'i 2009, p. 10)	Management
Vision, Goals & Objectives	objectives	'd) Correspondence failure, when there is no match between IT systems and the planned objectives.' (Ravasan & Mansouri 2014, p. 39)	Management
Vision, Goals & Objectives	objectives	'Generally, it is believed that the project is partially failed because it is not completed within time and/or budget (process failure), the ERP systems do not live up to user expectations (expectation failure), and there is no match between ERP systems and the planned objectives (correspondence failure).' (Ravasan & Mansouri 2014, p. 40)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	objectives	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale- motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	objectives	'Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	vision	'Important CSFs identified are: ERP team work and composition, top management support, business plan and vision, effective communication, project management, project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and evaluation of performance.' (Ali & Miller 2017, p. 675)	Management
Vision, Goals & Objectives	vision	'Lesser, but still important CSFs are, having a good business plan, vision, having a project champion, appropriate business and legacy systems, change management programmes, culture, BPR, minimum customisation, software development, testing, trouble shooting, monitoring, and the evaluation of performance (Markus, Axline, Petrie and Tanis, 2000; Bancroft et al., 1998; Bingi et al., 1999; Nah et al., 2001; Umble et al., 2003; Ehie and Madsen, 2005; Sarkar and Lee, 2003; Umble et al., 2003; Kim et al., 2005; Motwani et al., 2005; Nah and Delgado, 2006; Maguire et al., 2010).' (Ali & Miller 2017, p. 682)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	vision	'Strategic: Top management support, business plan and vision have been frequently recognized as the most significant and critical success factors in ERP system execution projects (Somers and Nelson, 2001).' (Anjum & Khan 2015, p. 629)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	vision	'Frequency analysis of CSFs in literature CSF category Top management commitment and support Change management BPR and software configuration Training and job redesign Project team: the best and brightest Implementation strategy and timeframe Consultant selection and relationship Visioning and planning Balanced team Project champion Communication plan IT infrastructure Managing cultural change Post-implementation evaluation Selection of ERP Team morale and motivation Vanilla ERP Project management Troubleshooting/crises management Legacy system consideration Data conversion and integrity System testing Client consultation Project cost planning and management Build a business case Empowered decision makers Number of instances cited in literature 25 25 23 23 21 17 16 15 12 10 10 8 7 7 7 6 6 6 6 5 5 5 4 4 3 3 Researchers have very often focused on only a specific aspect of the implementation process or a specific CSF.' (Finney & Corbett 2007, p. 340)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	vision	'Extrinsic(3) Organizational CSFs (15) People CSFs (12) Technological CSFs (5) • Communication within the company • Organization resistance • Project budget • Project management • Implementation strategy • Strategic goals and objectives • Business process reengineering • organizational culture • knowledge base of the company • Project planning and control • Facilitating conditions • Organization size • The vision of the organization • Readiness of organizations • Clarity of potential cost • User involvement • Selection of vendor/consult ant • Project team • Top management support • Training of user • Trust on vendor • Performance expectancy • Effort expectancy • Social influence • Age • Gender • Highest degree attained • Selection of ERP package • IT infrastructure • Data integrity and system testing.' (Huang et al. 2021, p. 4686)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	vision	'According to the literature, the most studied factors were: Top Management Support, Effective Communication, Training, and Education, Business plan and vision, Project Management, BPR management, Change Management, Project team Composition/ Teamwork, Project champion, ERP Choices, Technical Implementation, Technological Infrastructure, Legacy systems consideration.' (Mahraz, Benabbou & Berrado 2020, p. 112)	Management
Vision, Goals & Objectives	vision	'Organizations need to establish a long- term vision, while continually improving the ERP implementation process.' (Mahraz, Benabbou & Berrado 2020, p. 113)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	vision	'The findings of our study reveal that 'appropriate business and IT legacy systems', 'business plan/vision/goals/justification', 'business process reengineering', 'change management culture and programme', 'communication', 'ERP teamwork and composition', 'monitoring and evaluation of performance', 'project champion', 'project management', 'software/system development, testing and troubleshooting', 'top management support', 'data management', 'ERP strategy and implementation methodology', 'ERP vendor', 'organizational characteristics', 'fit between ERP and business/process', 'national culture' and 'country-related functional requirement' were the commonly extracted factors across these 10 countries/regions.' (Ngai, Law & Wat 2008, p. 548)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	vision	'Eleven critical factors were identified, such as ERP teamwork and composition, change management program and culture, top management support, business plan and vision, business process reengineering (BPR) and minimum customisation, effective communications, project management, software development, testing and troubleshooting, monitoring and evaluating performance, project champion, and appropriate business and IT legacy systems.' (Rabaa'i 2009, p. 6)	Management
Vision, Goals & Objectives	vision	'The factors identified were management and leadership, visioning and planning, ERP package selection, communication process management, training and education, project management, legacy systems management, system integration, system testing, cultural and structural changes, and performance evaluation and management.' (Rabaa'i 2009, p. 6)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	vision	'Based on the work by Markus and Tanis (2000), Nah and Delgado organised these factors into seven main categories: (1) Business plan and vision; (2) Change management; (3) Communication; (4) ERP team composition, skills, and compensation; (5) Project management; (6) Top management support and championship; and (7) System analysis, selection, and technical implementation.' (Rabaa'i 2009, p. 6)	Management
Vision, Goals & Objectives	vision	'Although the project communication planning was considered ineffective in both sectors, majorities in both sectors saw ERP implementations as fitting the organisation's vision and largely agreed the project goals and benefits were clear.' (Rabaa'i & AlJamal 2015, p. 97)	Management
Vision, Goals & Objectives	vision	'Critical success factors identified in Turkish studies Author (s) Critical Success Factors Baskak& Cetisli (2003) Top management support, business plan and vision, ERP teamwork, ERP package selection, change management, user training and education, effective communication, project management, data integration, software testing and troubleshooting, appropriate legacy systems, monitoring and evaluation of performance.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 62)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	vision	'Item Description 1 top management support 25 application project costs 2 effective communication 26 interdepartmental cooperation 3 interdepartmental communication 27 dedicated resources 4 clear goal and objectives 28 ERP vendor relations 5 business plan-vision 29 ongoing vendor support 6 change management 30 use of vendor's development tools 7 education on new business process 31 organizational characteristics 8 user training& education 32 employee / team morale- motivation 9 user acceptance 33 leadership of the project team 10 managing cultural change 34 project team competence- composition 11 business process reengineering 35 ERP team work 12 customization 36 steering committee 13 minimal customization 37 empowered decision makers 14 software configuration 38 use of consultants 15 data accuracy 39 obtain business analysts 16 data analysis- conversion 40 project champion 17 software development testing & troubleshooting 41 appropriate business-legacy systems 18 implementation strategies 42 data integration 19 ERP package selection 43 scope & vision based performance 20 feasible evaluation of ERP project 44 monitoring-evaluation of performance 21 IT infrastructure 45 post imple...' (Saygili, Ozturkoglu & Kocakulah 2017, p. 64)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	vision	'Related Sub-Factors 1 (11) Business project reengineering (18) Implementation strategies (23) Management of expectations (24) Project management (32) Employee / team morale & motivation (33) Leadership of the project team (34) Project team competence and composition 2 (14) Software configuration (21) IT infrastructure (28) ERP vendor relations (29) Ongoing vendor support (30) Support of vendor development tools (38) Use of consultants 3 (40) Project champion (46) National culture (47) Country related functional requirements (48) Centralization 4 (1) Top management support (2) Effective communication (3) Interdepartmental communication (4) Clear goals and objectives (5) Business plan & vision 5 (15) Data accuracy (16) Data integration (42) Data analysis and conversion 6 (7) Education on new business processes (8) User training and education (9) User acceptance (10) Managing cultural change this result maybe, end-users resist changing business processes instead they prefer customizations in ERP software.' (Saygili, Ozturkoglu & Kocakulah 2017, p. 67)	Management

Table L.1: *continued from previous page*

Critical Success Factor	Term	Sentence	Function
Vision, Goals & Objectives	vision	'Setting vision and direction for the business, harnessing employees' energy and creativity and implementing modern concepts A detailed examination and definition of business needs, company capabilities, constraints and modules of the core system to support critical business practices and partners.' (Shaul & Tauber 2013, p. 24)	Management

References

Ali, M & Miller, L 2017, 'ERP system implementation in large enterprises - a systematic literature review', *Journal of Enterprise Information Management*, vol. 30, no. 4, pp. 666–692.

Amid, A, Moalagh, M & Ravasan, AZ 2012, 'Identification and classification of ERP critical failure factors in Iranian industries', *Information Systems*, vol. 37, pp. 227–237.

Anjum, MJ & Khan, S 2015, 'Factors manipulate ERP implementation: an experiential study from Pakistan', *Research Journal of Applied Sciences, Engineering and Technology*, vol. 9, no. 8, pp. 628–636.

Barth, C & Koch, S 2019, 'Critical success factors in ERP upgrade projects', *Industrial Management & Data Systems*, vol. 119, no. 3, pp. 656–675.

Basoglu, N, Daim, T & Kerimoglu, O 2007, 'Organizational adoption of enterprise resource planning systems: a conceptual framework', *The Journal of High Technology Management Research*, vol. 18, pp. 73–97.

Bazhair, A & Sandhu, K 2015, 'Factors of change management and perceived ease of use affecting ERP acceptance and financial performance of Saudi Arabia listed companies', *European Journal of Computer Science Information Technology*, vol. 3, no. 2, pp. 41–55.

Chan, E 2013, 'Australian quantity surveyors utilize ICT and ERP system to improve efficiency', *Engineering Management Reviews*, vol. 2, no. 4, pp. 103–114.

Chatzoglou, P, Chatzoudes, D & Apostolopoulou, G 2016, 'Antecedents and outcomes of ERP implementation success', *2016 Federated Conference on Computer Science and Information Systems (FedCSIS)*, pp. 1253–1262.

Coşkun, E, Gezici, B, Aydos, M, Tarhan, A & Garousi, V 2022, 'ERP failure: a systematic mapping of the literature', *Data & Knowledge Engineering*, vol. 142, pp. 1–23.

Finney, S & Corbett, M 2007, 'ERP implementation: a compilation and analysis of critical success factors', *Business Process Management Journal*, vol. 13, no. 3, pp. 329–347.

Garg, P & Agarwal, D 2014, 'Critical success factors for ERP implementation in a Fortis hospital: an empirical investigation', *Journal of Enterprise Information Management*, vol. 27, no. 4, pp. 402–423.

Garg, P & Chauhan, A 2015, 'Factors affecting the ERP implementation in Indian retail sector: a structural equation modelling approach', *Benchmarking: An International Journal*, vol. 22, no. 7, pp. 1315–1340.

Garg, P & Garg, A 2013, 'An empirical study on critical failure factors for enterprise resource planning implementation in Indian retail sector', *Business Process Management Journal*, vol. 19, no. 3, pp. 496–514.

——2014, 'Factors influencing ERP implementation in retail sector: an empirical study from India', *Journal of Enterprise Information Management*, vol. 27, no. 4, pp. 424–448.

Huang, Q, Rahim, M, Foster, S & Anwar, M 2021, 'Critical success factors affecting implementation of cloud ERP systems: a systematic literature review with future research possibilities', *Proceedings of the 54th Hawaii International Conference on System Sciences*, pp. 4683–4692.

Khattak, MAO, She, Y, Memon, Z, Syed, N, Hussain, S & Irfan, M 2013, 'Investigating critical success factors affecting ERP implementation in Chinese and Pakistani enterprises', *International Journal of Enterprise Information Systems*, vol. 9, no. 3, pp. 39–76.

Mahraz, MI, Benabbou, L & Berrado, A 2020, 'A compilation and analysis of critical success factors for the ERP implementation', *International Journal of Enterprise Information Systems*, vol. 16, no. 2, pp. 107–133.

Ngai, E, Law, CCH & Wat, F 2008, 'Examining the critical success factors in the adoption of enterprise resource planning', *Computers in Industry*, vol. 59, pp. 548–564.

Osman, N & Sahraoui, A 2019, 'ERP critical success factors: software system engineering perspective', *International Journal of Computer Applications*, vol. 182, no. 42, pp. 35–42.

Rabaa'i, AA 2009, 'Identifying critical success factors of ERP systems at the higher education sector', *Third International Symposium on Innovation in Information & Communication Technology*, pp. 1–16.

Rabaa'i, AA & AlJamal, E 2015, 'Cultural perspectives on ERP implementation in Jordan: a comparison between public and private sectors', *International Journal of Intercultural Information Management*, vol. 5, pp. 83–102.

Rabaa'i, AA, Bandara, W & Gable, G 2009, 'ERP systems in the higher education sector: a descriptive case study', *Proceedings of the 20th Australasian Conference on Information Systems*, pp. 456–470.

Rabaa'i, AA & Gammack, J 2016, 'Success factors for enterprise systems in the higher education sector: a case study', *International Journal of Engineering Science Invention*, pp. 46–61.

Ravasan, AZ & Mansouri, T 2014, 'A FCM-based dynamic modeling of ERP implementation critical failure factors', *International Journal of Enterprise Information Systems*, vol. 10, pp. 32–52.

Saygili, EE, Ozturkoglu, Y & Kocakulah, MC 2017, 'End users' perceptions of critical success factors in ERP applications', *International Journal of Enterprise Information Systems*, vol. 13, no. 4, pp. 58–75.

Seth, M, Goyal, D & Kiran, R 2015, 'Development of a model for successful implementation of supply chain management information system in Indian automotive industry', *Vision*, vol. 19, no. 3, pp. 248–262.

Shaul, L & Tauber, D 2013, 'Critical success factors in enterprise resource planning systems: review of the last decade', *ACM Computing Surveys*, vol. 45, no. 4, pp. 1–39.

Shukor, SA, Sheikhi, A & Nashir, AHM 2020, 'Enterprise resource planning (ERP) adaptation in malaysia agricultural SME: issues and trends', *Journal of Theoretical and Applied Information Technology*, vol. 98, no. 12, pp. 2046–2062.