## University of Southern Queensland Faculty of Engineering and Surveying

#### Research Title

# Comparative Study of Engineering Leadership of Senior Engineers in Malaysia & Australia within the Construction Industry

A dissertation submitted by

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Course ENG4111 and 4112 Research Project

towards the degree of

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#### **ABSTRACT**

Aims: The leadership attributes of engineers have been deemed crucial lately and have reached to a point where the link between leadership and engineering is debatable. Hence, this project purports to survey on the leadership attributes of senior engineers within the construction industry in both Malaysia and Australia. The final outcome of this project would be to provide a comparative result of engineering leadership of these two countries as well as to see if the results support the literature review done on the leadership attributes.

Methodology: A survey research methodology was used to gather data from senior engineers in the construction industry. The samples incorporated a total of 14 individual senior engineers from Malaysia and 21 engineers from Australia. An analysis was done by basic statistical methods and then analysed both quantitative and qualitatively.

The outcome of this project would be obtained by quantitative survey and evaluation of the comparative study, which would depend on the aid of a questionnaire created. Analysis of the surveys relating to the leadership attributes found in the literature review would be conducted and the final results observed would then be extensively evaluated.

#### **DISCLAIMER PAGE**

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## ENG4111 Research Project Part 1 & ENG4112 Research Project Part 2

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## **ABBREVIATIONS**

**CEO** – Chief Executive Officer

**BRW** – Business Review Weekly

**MBTI** – Myers-Briggs Type Indicator

**T-F function** – "thinking" and "feeling" function

**A/V approach** – analytical/values ratio approach

#### **CHAPTER 1**

#### INTRODUCTION

#### 1.1 Project Aims

The leadership attributes of engineers have been deemed crucial lately and have reached to a point where the link between leadership and engineering is debatable. Hence, this project purports to survey on the leadership attributes of senior civil/environmental engineers within the construction industry in both Malaysia and Australia. The final outcome of this project would be to provide a comparative result of engineering leadership of these two countries as well as to see if the results support the literature review done on the leadership attributes.

#### 1.2 Background

As defined by R.J. House (2004), "leadership" is "the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and success of the organizations of which they are members". Discussion of leadership often brings to mind the word "management" and so there are often debates on the differences, if there are any, between the two words.

Mary Parker Follett defined "management" as "the art of getting things done through people". Generally, management is often classified as planning, organizing, leading/motivating and controlling. Management usually involves pushing and ordering people to complete tasks in comparison to leading.

According to John Falcioni (2005), leading differs from managing and thus are not interchangeable. To quote, "managers have subordinates and leaders have followers" (cited in Mechanical Engineering Magazine, 2005). This is supported by Ireland. et.al. (2003a) and O'Neill (2003b), both believing that leadership is something unique, involving shorter term and longer term approach in comparison to management which is more of a short term focus. Leaders are supposed to

accomplish tasks by leading their team members via example. Leaders inspire, motivate and are at the front of the team. Hal Walls thinks otherwise. He argues that too much differentiation has been made so far between leadership and management (cited in Industrial Engineer, 2003). In other words, he stresses that leadership is only a part of management, and that it is a vital component.

Many of the attributes that apply to the term "successful leadership" are similar to those of the term "successful management". Regardless, both these terms require an extensive amount of "soft skills" contrasting to the "hard sciences" required in the engineering profession. Thus, this brought about the debatable issues of whether or not an engineer, made up of technical skills, would make a good leader, which requires an entirely different set of skills.

One may show the best engineering skills, but is always wrongly assumed that he or she is able to pick up the necessary people management skills on the job, while forgoing leadership experience or training (cited in IEE Engineering Management, 2005). When this assumption is made, "sometimes...organizations lose their best technician and at the same time gain their worst leader" (quote from Kevin Johnson (2005). In the next section, the attributes, as per the literature review, would be further demonstrated.

#### **CHAPTER 2**

#### LITERATURE REVIEW

#### 2.1 Introduction

As project managers in the technical field, he or she is required to deal with people and client issues. Due to the smaller scale of the job, the engineering component is deemed larger. But when it comes to the job of managerial directors, they not only have to deal more with people issues but also with strategies and new business opportunities. When it comes to this point, the engineering component thus decreases.

"There are no poor engineers or scientists, only poor managers. If managers have excellent resources but manage them poorly, they will get nothing but poor results" (cited in Engineers Australia, 2006). From the quote above, it would have been noticed that leadership skills are crucial at the managerial level. Thus, partaking actively in the organization to ensure the strategy is linked to the overall business strategy is the first sign of the leadership attributes.

#### 2.2 Key Attributes of Leadership

#### 2.2.1 Interpersonal Skills

Cameron (2007) states that a leader brings people with them and a leader cannot lead alone. Mark Norton (2006) further reinforces this by stating that, leadership is all about working with the right people and getting all to be into one common goal. A more grounded view was provided by Dr Michael Badawy (2006) that interpersonal skills are probably the most crucial of the professional skills, and make up one of the components of the managerial competency. In situations where employees work in a very competitive industry and are likely to work for a competitor, strong interpersonal skills in a leader can instil much needed company loyalty. This ability to work with people, to communicate, motivate and influence them, would most likely determine if the organization would grow stronger or fail.

One of the common attributes cited in literature is the ability to empathise with employees. As Trevor D'Hoy (2005) aptly puts it, successful CFOs have developed high levels of empathy to deal with people issues and to motivate collaborative teams. Kokkong Chan (2005) also advises that successful leaders usually have developed high levels of empathy. This view is further supported by Nigel Robinson (2006) who says he cares about the people in the company, and that this has to be intrinsic in any successful management. When a leader or project manager and his team or employees are able to relate and understand each other better, the employees are much more likely to follow and work with their leader.

Peter Brecht of Abigroup Limited (2005) finds that maintaining interaction with staff on the personal level is one of his greatest challenges while in the company. He encourages his senior managers to keep up frequent communication between themselves and their staff as he believes this helps retain staff. Archie Johnston (2005) emphasizes this point when he mentioned that one of the challenges in his leadership approach has been finding a right balance between spending time in his office and time with his staff in the faculty. Regular lines of communication between leaders and their staff encourage interaction and feedback, providing a comforting and positive atmosphere akin to families, thus helping in

motivating employees and improving company efficiency. Happier employees are also very much unlikely to leave for possible jobs with competitors.

In order to manage and motivate people, and to deal with their issues, Michael Hawker (2005) specifies that absolute trust is also needed in terms of a good personal relationship. This quality is more often than not linked to integrity which is an integral part. As Dean Ireland (2007) accurately puts it, "Integrity has to be the number one criteria. If there is any question mark, it can destroy an organization." According to Warren Bennis (cited in The Antidote Issue 6, 1997), integrity is a basis for trust and consists of three parts: candour, self-knowledge and maturity. Candour, he feels, is the key to self-knowledge as it is based on honesty in thought and actions. Devotion to such honesty allows one to know oneself and both principles make a person trustworthy and reliable, giving them integrity. Maturity ensures that a leader has experience and will continue to learn from new ones, all the while being truthful, observant, dedicated and capable of working and learning from others.

Dr Michael Badawy (2006) lists several signs and symptoms of poor interpersonal skills which are to be recognised and avoided by managers and leaders. The first is the inability to get along where the leader is unable to interact and build harmonious relationships with their subordinates preventing teamwork and high performance by the team. The second is the failure to adapt and manage change. Constant changes made to organisations including strategic alliances, mergers, downsizing and corporate restructuring require changes to management styles as well. The ability to adapt and embrace such changes is an indication of good interpersonal skills. Leaders who are constantly preoccupied with their own personal recognition lead to managerial failures as well because they are unwilling to work with their team or are unable to share the rewards of successful endeavours with their subordinates.

The final two signs listed are leaders that fear action and leaders that are unable to rebound. Leaders that do well are usually action oriented and are able to put themselves on the line. Leaders that lack such conviction or refuse to act because of incomplete information tend to fail from such inaction. Subsequently,

leaders that learn from any such mistakes and correct such shortcomings are more likely to succeed instead of ones that try to cover up such weaknesses, leading to failure precisely because of such flaws.

#### 2.2.2 Attitude

Being a good leader is largely all about attitude. This more or less plays an important role in motivating employees or colleagues to move forward towards similar goals. Dr Michael Badawy (2006) affirms this by saying attitudes are basically a leader's value system and beliefs about himself, the task and others in the organization. He goes on to say attitudes must be considered because it shapes the way a leader learns new knowledge and skills as well as how he applies such new wisdom.

It takes courage to be a leader. Eileen L. Berman wrote, "if you don't have that quality, you will do things to please others at the expense of what you believe to be right". Decision making would all be up to the leader, regardless of whether the decision turns out to be right or wrong. Not every body is going to be pleased about the decisions and it would take courage for the leader to stand up to what he or she feels is right. Warren Bennis (1997) confirms this by saying leaders require curiosity and daringness.

A measure of curiosity and courage required in leadership is reinforced by Mike O'Neill of TEC (2007) who believes that leadership is about taking abstract decisions and trying something new, all the while recognizing what's happening in the market and looking at how to modify it in order to stay in front of the pack so to speak. He also states that a great leader is a person who is able to stand up and just say 'we stayed the course', further fortifying the position that courage is a fundamental attribute.

The leader must think and wonder about everything, and be willing to learn as much as he can while taking risks and experimenting with any new things. More often than not great risks result in great rewards hence a leader cannot be afraid of

fresh new innovative ideas and must learn and use them where necessary to improve on his company or organization. This ability to embrace changes ensures that a leader and his company do not become stagnant or redundant and are always up to date with current times.

When there are weaknesses present in the team or organization, it takes courage once again to correct them or build on them instead of just avoiding or covering them up. Nigel Robinson (2006) reveals that there is no 'right' answer to many management issues. There is only a series of options presented and you have to decide as a leader, which is the best option given a particular circumstance. A leader must be brave enough when given limited information, to consider the alternative solutions to a problem, settle on the best remedy, and go through with it after considering the risks it brings with it.

Eileen L. Berman also states that a high level of confidence is required to make a good leader as everyday, the leader is subjecting himself to other people's judgment and this confidence is what is needed to "firm up the foundation" when rebuilding the weaknesses of a person's character. A person with low self esteem or lacking in confidence can be easily discouraged, even by his own colleagues, and is therefore unable to fulfill the duties of a leader. Such confidence in a leader allows staff to believe a leader knows the way and is capable of getting them to their destination. This confidence often spreads from the leader to his teammates and is a great boost to work efficiency and team morale.

Dean Ireland (2007) further adds that a really good CEO maintains an attitude where he is always willing to listen to their team. This allows staff or team members to feel acknowledged and valued as valid contributing members, thus improving morale again and motivating them. The ability to listen has the added benefit of gaining different and useful perspectives on strategies and problems which may never have been thought of.

#### 2.2.3 Decision-making style

As James Kendrick (2003) said, a leader himself is unique and different leaders possess different strengths. But in his opinion, all great leaders "were shepherds rather than herders, were out in front leading rather than trying to push from behind. Marilyn Nyman (2006) supports, saying decision making style of a leader is very important.

In general, being a dictator will get a leader nowhere. Although the intentions might be to get things done, thinking that being bossy and dominating will just bring a leader to his or her downfall. "Nobody wants a dictator to succeed" (Marilyn Nyman, 2006). She added that smart leaders would be aware of that and try to avoid the consequences at any cost. One method to ensure the leaders earn the respect he or she deserves, is by being more persuasive and adopting a consultative decision-making style. Through this respect, it is undeniable that it would make it easier for a leader to manage his followers.

True enough that being an authoritarian might seem to make people shun a leader, but Leonard D. Schaeffer (2002) told of how he was acquainted with autocracy at the start of his career as a chief executive. A leader has to progress through different styles of management as he or she rises in career. This statement is supported by the Leadership Management Development Centre et.al. (1998) and Kenneth R. Brousseau (2006), saying that different decision making styles are adopted depending on the situation and on the level of management.

As per the former paragraph, leadership style is basically management style or simply decision making style (Mitch McCrimmon 1996). And to further reinforce the latter statement above, Mitch McCrimmon (1996) believed that good leaders vary their decision making style according to the situation.

#### 2.2.3.1 Types of Decision-making style

Generally, there are four types of decision making style –autocratic, democratic, collective-participative and consensus (Leadership Management Development Centre, 1998). Although elaborated in a different manner, the basics of decision making style agrees with the Rowe's Decision Style Inventory (1987), which gives four types as well –directive, behavioural, analytical and conceptual.

The autocratic style is what is deemed as the dictatorial style (directive). There is total control over the decision making by the leader without consultation for any ideas or from any outside sources, i.e. it uses very limited information. Regardless of the few solutions, the main target of this style is to come up with an effective solution fast and that would produce a satisfactory outcome. In times of urgency, this is usually no doubt the best choice. Of course, this decision making style is very least people oriented. Unless the decision would not affect the members of the organization directly, this style would cause displeasure. Hence, the saying that autocratic decision maker would usually lose credibility as a good leader.

Next, we have the democratic style. This style is more people oriented, and low in cognitive complexity (behavioural). The leaders would allow others to vote with the majority deciding the action. More focused on short term direction, the authority is vested equally among members of the organization.

The collective-participative style is a style that considers multiple solutions while enabling members to contribute in terms of ideas, knowledge and information (analytical), whilst the main decision is still up to the leader. Although this style is very time consuming, it considers member involvement and acknowledgement, and if members were to possibly be affected negatively by the outcome of the decision, the doubt towards the credibility of the leader is not amplified much. Also, this is because the members, being involved, are pre-informed of the implementation of the decision.

The final style is the consensus style (conceptual) which focuses completely on the members' decision. The leader gives up total control and the members share the control in making the decision. While in the planning stage, the decision making involves extensive information and sources. Every member in the organization contributes in knowledge and perception as well. But at the end of the day, this decision must be completely agreed by the whole organization before it can be implemented. If this agreement is not achieved, then the decision would become democratic.

In the research of Kenneth R. Brousseau, Michael J. Driver, Gary Hourihan, and Rikard Larsson (2006), the results obtained intricate that decision making styles often vary with the management hierarchy. At lower levels, the priority of the decision is to keep every member focused on immediate tasks and getting it done. This finding is similar to what was mentioned by Leonard D. Schaeffer (2002) about the most painful and least enjoyable duty as an autocratic leader in the early management level.

Moving on to higher levels, the style changes to a more understanding context rather than directing. This decision making style is more of collective-participative where leaders listen to the ideas and information from the members, yet the final decision is still his or hers. Another step further, a leader is usually required to be creative while accepting all ideas from a range of sources to be considered. But when things move beyond the highest level, a leader is to go back to the analytical approach and only rely on limited reliable sources to aid in his or her decision making.

To conclude, shifting styles accordingly to each new challenges has been extremely effective (Leonard D. Schaeffer, 2002).

#### 2.2.4 Diversity and Viewing the wider picture

"Progress to the top functional leadership role requires quite a different mind-set" (quote from Kokkong Chan, 2005). Boston Consulting Group (2006) states that, there is a need for flexible work environments which attract a broader range of quality staff and which cater to a wider variety of interests. Both technical skills and the ability to tackle the combined talents of a management team dealing with such a broad range of interest is what they look for when hiring a manager.

These ideas are further reinforced by what Ian Maxwell (2006) said, that the greatest challenge in leadership is to understand the diversity of business conditions and the need to tackle the way the business is done depending on the suitability of the options available. Nigel Robinson of Maunsell (2006) adds that he undertook a master's in economics and sociology, which were unusual for engineers at the time, in order to gain a broader view of his work. An understanding of the differing aspects of the other departments in a company facilitates the leader's ability to understand and relate to his subordinates. This position is strengthened by Prof Archie Johnston (2005) who says an awareness of cultural differences is increasingly crucial as majority of engineers will spend some time in overseas companies.

According to Margot Cairnes, leadership is about context. Meaning, leadership requires one to think outside his or her own realm and to see things with an open mind thus ensuring better understanding and improving wisdom and creativity. An open mind and the ability to understand different cultures within a company, allows the leader to determine the methods of motivating and influencing his staff. This, in effect, increases the staff's willingness to follow and achieve with their leader. With an extensive picture of the inner workings of a company, a leader is also better able to anticipate and resolve problems which may arise particularly between departments. Such diversity also allows a business the most opportunities to continue growing as there will be a bigger pool of talent and ideas to draw from.

To get an opportunity to experience this diversity, or to pick up the skills of viewing the wider picture of an organization, Anthony Pascoe (2006) deems that

getting tasks outside his areas of expertise were priceless. Moving away from concentration on details to the concentration of concepts and strategy is a big leap for technical experts, but it is important if one were to be a great leader. As cited in BRW, 2006, leadership is about being able to talk and deliver at all levels of the business. An engineer normally starts out being highly specialized in a technical field and therefore not very diversified. As he moves up the management chain, he begins to lose specialization and gain more generalized management skills, thus gaining skills to broaden ones horizons can significantly aid in the development of a leader.

#### 2.2.5 Learning and Self-knowledge

A leader should challenge and outdo himself, and to understand what makes him lack effectiveness. By conquering the "current context of life", one learns about the habits and practices that could help oneself develop the leadership attributes. A suggestion by Dr. Denis Waitley is to be inspired to learn as much as possible, to find a cause that benefits humankind, and one will be sought after for the quality of service and dedication to excellence (cited in Reader's Digest, 1998).

Cited in the Harvard Business Review (2001), leadership is defined by Professor Richard Tedlow as a personal quest, one that can produce great victory even as it engulfs the leader into the darkest, most mysterious reaches of the self. Exploring "breakthrough leadership", authors Daniel Goleman, Richard Boyatzis and Annie McKee (2001) concurs by strongly stating that no tool can help a leader who lacks self-knowledge, and hence, it is personal quest.

From the above, one can agree that the process of learning and knowing oneself is as crucial when talking in terms of becoming an outstanding leader. But when self-knowledge is weaved together with skill-knowledge, a fine line is visible between a successful leader and a successful skills person.

For Nigel Robinson et.al. (2006a) and Peter Brecht (2006b), they both went through a transition from engineering into management and both received

leadership training on the job. As mentioned by Warren Bennis (cited in The Antidote Issue 6, 1997), a leader is not born a leader but is made a leader. The attributes of a leader is something that could be taught and moulded.

As a technical person, training and learning of leadership qualities could be done at the expense of the individual. One advice is that always accept a client complain and get actively involved. Through that, learn how to manage and resolve the problem (cited in BRW, 2007). Also, by gaining international experience, one would be exposed more to the different cultures and working styles of the countries abroad. Thus, this could be considered a process of training and learning, a step into the capability of leading a group of different culture.

Although Daniel Meiland (2003), executive chairman of the Egon Zehnder International states that many companies still believe that to put managers in positions in other countries is the best method to help develop a global mindset, there is a downside to it. He argues that this method has been ineffectual. The company places an employee abroad but eventually forgets about him or her. In this case, it complicates matters for the employee when he returns, missing out on the chances and opportunities to keep in contact with the top executives.

To expose oneself to the global network to pick up global attitudes is deemed to be crucial in aiding one to become a successful leader. As suggested, to have a global attitude is to be able to show interest and openness while being oneself (Fred Hassan, 2003). By picking up the cultural sensitivity, a leader can learn much both in enhancing his or her attitude as well as being able to handle a diverse range of matters without too much hassle. Of course, it has to be done with much concern and care in order to make things happen.

Nevertheless, it is undeniable that learning can be made happen in many ways. Although one is not born a natural leader, by training and development one can be moulded. But in order to make oneself a powerful leader, one must firstly have the will and passion to learn and improve. Without this willingness to look within and discover oneself, it would be difficult even if one wants to succeed in the leadership context.

#### 2.2.6 Motivating, Inspiring and Influencing

A leader is like a role model. Generally, a leader possesses strong strategic and cause-and-effect thinking. Mike O'Neill (2007) recommends a leader to create a mindset for the employees to follow. To be able to lead, of course, there must be adequate motivation and inspiration to the people before the influencing could be done smoothly. Nevertheless, not all technical professionals can be the best leaders as they might lack the tools to motivate and empower others (cited in IEE Engineering Management, 2005). The Executive Connection CEO Leadership Study finds that successful leaders are energy creators. They make positive and charismatic impressions on others, thereby creating energy and motivating subordinates to achieve goals.

Motivation is a very strong driver in bringing about increased work efficiency and thus a leader who can motivate his staff members is highly prized. When subordinates have a good reason to carry out a certain task, whether it be for personal recognition or material rewards, the task can be completed with excellence. A good leader is able to identify and provide such incentives for the different types of subordinates he may have, inspiring them and resulting in the production of works of quality.

According to Lucinda Chan (2006), she believes that good managers are those who give chances in providing opportunity for the employee to further excel in his or her career. Without a doubt, this would motivate employees as they would feel that they are actually of importance in the organization and not "just another employee" of the whole organization. Hence, being more inspired and motivated, they would carry out their job with greater passion and interest, benefiting both the organization and the employee. Some leaders are also able to inspire through leading by example. They are able to illustrate to their subordinates, where they could end up in their careers should they work as hard and as well as their current leader. Such leaders are able to provide a positive role model inspiring and influencing their followers to do a good job.

Egon Zehnder (2007) lists collaboration and influencing as must haves on their list of criteria for leaders. Jack Welch (2007) verifies these points by stating that leaders must have a personal energy or charisma, and be able to transfer such energy to their team or board. Jennie Cameron (2007) concurs with her statement, "An outstanding CEO is inspirational and can paint a vision of what can be and convey it to staff so it leads to desired results." An inspirational leader can motivate their team with a clear picture of their destination and the details of the journey to such a destination, producing outstanding results and improving work efficiency.

James Kendrick (2003) offers a rather fitting description where leaders are often shepherds instead of herders. They were always out in front, leading, motivating, inspiring and influencing, in contrast to trying to push from behind. John Maxwell (1998) adds that leadership is about influence, nothing more, nothing less. Leadership is the ability to influence and help others, drawing a team together to move forward on a task or a central cause. This makes the subordinates feel like they are integral and at the heart of matters, giving their work meaning and improving its quality.

#### 2.2.7 Technical skills vs. Soft skills

Technical skills are what we deem as the "hard sciences". These are the cases where logic, argument, analysis and structure are required. Thus, the engineering profession has been known to revolve just around technical skills with no soft skills involved at all. Soft skills are basically the skills that involve people, culture, and management, inclusive of leadership as well. This is usually displayed in chief executives, and managers of all levels.

Dr Michael Badawy (2006) confirms the view about technical skills and soft skills by stating that technical skills are greatest at lower levels of management and decreases with each higher level of management. This indicates that leaders usually start out highly specialised before he adopts more and more important administrative skills while neglecting more and more technical skills as he moves up the management ladder.

Prof Archie Johnston (2005) provides the view that engineering graduates by and large require more people or soft skills to enable them to succeed in leadership roles. One thing a technical engineer must do to become a great leader is to let go of some technical responsibilities and pick up on their administrative and interpersonal skills (cited in Engineers Australia, 2006). A leader usually starts as specialists with excellent knowledge of the technical skills, but once they step into the managerial or leadership position, the soft skills have to be developed by putting all knowledge into action. This is a skill that can be practiced and made. If a technical person simply takes orders rather than playing an active role in the company strategy, he or she will never achieve the qualities of being a good leader.

The advantages of having such soft skills are demonstrated by Lucinda Chan (2006) whose language skills in Cantonese, Malay, Hainanese, Hokkien and Indonesian allowed her to build valuable client relationships outside of Macquarie's base in Hong Kong.

Kokkong Chan (2005) follows up by saying many of their CFO's are regarded as indecisive or lacking boldness because they concentrate too much on strategic thinking, numbers and detailed concepts. This portrays the officers as ineffectual leaders and so they must move away from this frame of mind and develop their soft skills. These officers have to deal with clients and shareholders on a daily basis and the right soft skills allow them to persuade such clients or shareholders, or allow them to inspire and motivate their co-workers or staff.

Some of the soft skills listed by Marilyn Nyman (2006) include ambiguity, relationship building, decision making, executive presence, and humour. Ambiguity is the ability to make important decisions and take risks without all the relevant information present. This is related to decision making in a sense that leaders must make decisions and the method by which they implement such a decision is important as well. A leader must be persuasive or charismatic, and must be willing to listen to a variety of suggestions with an open mind. This earns them respect and helps motivate and influence their team members.

Relationship building is associated with interpersonal skills where the leader must endeavour to establish a rapport with their subordinates or work mates in order to accomplish tasks better and advance business agendas. Executive presence is a quality in certain leaders that consist of conviction, confidence and credibility. A leader with all these qualities is better able to convince their audience and fellow colleagues to follow their plans of action. A sense of humour is something that everyone can appreciate and reveals the humanity of a leader. It helps people empathise and relate with the leader, forming close bonds that provide a boost to work quality and efficiency.

#### 2.2.8 Values approach

Values as will be discussed in this topic will not be talking in terms of quantity, amount or mathematics, but with regards to personal and cultural values. To introduce, many of the technical professions these days still hung on to the typical analytical approach, as opposed to the values approach. These two approaches can be said as a direct opposite of one another. Leaders tend to choose a specific method to make judgments and decisions and this choice is pretty much dependent on his or her personality.

As published in the Psychological Types (Carl Gustav Jung, 1921), people are different in similar ways defining "analytical" and "values-based" in simpler terms; "thinking" and "feeling" respectively. Expanding Jung's eight categories of people's personalities into 16, Briggs and Myers (1942) created the Myers-Briggs Type Indicator, also known today as the MBTI. This indicator revolves around the four pairs of dichotomies as shown in the table below:

<b>Dichotomies / Preferences</b>		
Extraversion	Introversion	
Sensing	iNtuition	
Thinking	Feeling	
Judging	Perceiving	

Figure 1.1

As noted, this MBTI involves the Thinking and Feeling (T-F) function, which are decision making functions. Although both types are similar – to make rational and valid choices, the A and V approach (analytical and values) produces very different outcomes. Given an example in the Engineers Australia, 2006, the difference between the two approaches is illustrated below:

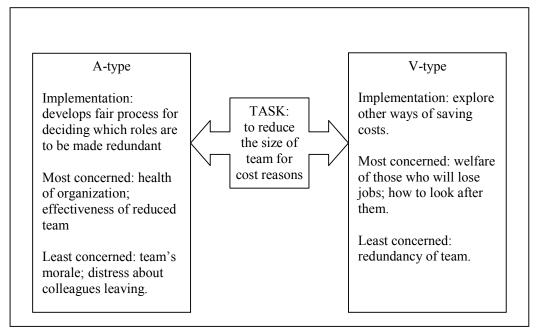


Figure 1.2

Many management concepts these days have been placing an emphasis on the value-based leadership, focusing on adding values to the entire process. Value-based leadership adopts making decisions with empathy and association. Leaders look at matters from the inside and makes decision considering the needs of people involved while trying to achieve harmony, consensus and fit. Whereas, in the analytical leadership, decision is measured by sense of reason, logic, cause and consistency, and usually goes by the book.

In the field of engineering, Mark Toner (2006) supported that more of human values approach needs to be adopted rather than the analytical approach which has so far been over-presented. Instead of resolving all matters just by details and facts, and making decisions in a logical manner, engineers should do more thinking in terms of ideas and opportunities, make decisions from personal values, and planning with flexibility.

Regardless of the emphasis on the value-based leadership in the technical industry, this does not necessarily mean that leaders who adopt the "feeling" function will be more "feeling" or emotional than those who adopt the "thinking" function. Likewise, those who adopt the "thinking" function will not necessarily "think better" than the former. Thus, it would be stronger if there are both types (cited in Engineers Australia, 2006). By having both the qualities in a leader, generating a diversity of approaches for handling problems or finding new solutions would be made possible.

But in general terms, leaders who are more value-based are deemed those who hold strongly to moral and ethics, which is vital as perceived by Lawrence Kohlberg et.al (1958) and Carol Gilligan (1982). True enough that just being analytical without values of morality and ethics is not favourable in today's world of leadership. Sadly, Dario Amara (2005) saw a decline in customer service ethic in the engineering sector. Some of the engineers these days are carried away by his or her own personal advancement, thus leaving behind the values and integrity in being devoted to making the best of the organization. As per Douglas Partners' (2007), they believe in keeping staffs happy and ensuring the customer-service ethic is maintained just as Robinson (2006) holds on strongly to the values that he does not entertain corruption at all.

#### 2.2.9 Passion

#### 2.2.9.1 Be passionate

As believed by Michele Payn-Knoper (2005), passion is the light of the leadership torch that will help guide the way now and in the future. Leaders display a passion for, and have a strong conviction of, what they regard as the moral correctness of their vision (House and Podsakoff, 1994). They added that leaders engage in outstanding or extraordinary behaviour and make extraordinary self-sacrifices in the interest of their vision and mission.

Having great excitement and interest in one's career or a mode of action are fundamentals in the ingredients of successful leadership. This enthusiasm is what makes a leader have really strong passion towards his profession. As viewed by Warren Bennis (1997), the leader loves what he does and loves doing it.

This is supported by Mike O' Neill (2007), stating that a leader has to be enjoying what he/she is doing at the same time. He also added that in order to create a mindset for people to follow, not only it is essential that a leader is passionate, a leader must also be committed in the long term and be alert to the marketplace.

Unfortunately, the passion that supports leadership has its pros and cons, depending on how it is moulded. "...they will focus on areas they are passionate about, rather than on what is good for the business", according to Jacky Carter (2005). This statement was made when Carter was commenting about the "learning and development" remedy that some companies deemed crucial to further improve. Some employees have been specialized in certain areas for quite some time and to make the switch to look at other areas makes the employees feel uncomfortable; hence, the concentration on their passion only and the reluctance to venture into other prospects.

#### 2.2.9.2 Instil passion

Defined in the Wikipedia (2007), a leader, one who can instil passion and direction to an individual or group of individuals, will be using psychology to affect that group either consciously or unconsciously.

Not only is there a need for passion in a leader, but this passion should also be incorporated into members of the organization. According to a study by Philadelphia-based consultants, PeopleMetrics (Brian Amble, 2007), employees who are passionate about their companies are the best performers, regardless of industry, tenure or gender. To provide a more grounded view, Kate Feather (2007) identified that the concept of feeling love or passion for one's company is gaining ground because a passionately engaged workforce is becoming an important differentiator in the marketplace.

Of course, to instil this passion, a leader is the one to lead, motivate and influence fellow employees to feel the same enthusiasm in their profession and vision. And to do that, John Maxwell (1998) quoted Warren Bennis, that good leaders make people feel that they're at the very heart of things, not at the periphery. When employees feel centered, i.e. feel that they actually make a difference being a part of the organization, this gives their work meaning.

This "meaning" is essential to the happiness of an individual, whether they are working for a large corporation, volunteering for a non-profit, or developing their own business (John Maxwell, 1998). And with this "happiness" an employee would naturally be more passionate in his or her work. This motivation is what drives employees into going towards the same goal and towards the vision of a leader, impacting both on the present and future of the organization.

In general terms, passion can cause one to be unaware of quitting time and help one to pull through until the end of one's workday. And as Dr. Denis Waitley says, "Chase your passion, not your pension!" adding that one will wake up every morning with the passion of pursuit, but not the pursuit of money (cited in Reader's Digest, 1998).

#### 2.2.10 Vision

"The view and vision is much clearer in front. Obstacles and hazards can be spotted better, which leads to better planning and greater success", quoted James Kendrick (2003).

As per the quote above, it is without a doubt that vision is vital in the effectiveness of a role as a leader. A successful leader asks questions that unsuccessful ones do not, i.e. what does the future look like? One sees beyond the horizon that other people want to share and follow – a vision. Leaders have vision, and it is a duty of a leader to create one that people believe in and live in.

A vision is not just a written organizational mission statement, but it is something that helps a leader see tomorrow so powerfully that it shapes today. People need vision to help with planning around a mission. Of course, with better planning for what is to come further ahead, things would be more organized and hassles would be kept to a minimum.

To be effective, James Kendrick (2003) states that a leader must know where he/she wants to go and most importantly, know where he/she currently is. This tally with the citation in The Antidote Issue 6 (1997) that a leader has a clear idea of what he wants to do, a strongly defined sense of purpose –both in his professional and personal life – and the strength to persist despite setbacks or failures.

Regardless, with the vision created, a leader must fully take responsible for it as vision is contagious and leads to people beginning to stand alongside the leader in the mission. As written by Walter Wright in the Relational Leadership (2001), articulating the vision may be the single most important responsibility that a leader has. A leader must be reliable and dependable enough to regularly communicate and share the vision with members of the organization.

With this vision, a leader could clearly set the organizational direction and purpose. And with this direction and purpose, a leader could create a well-paved path from the present to the future of the organization. Of course, this vision is deemed powerful in the sense that people would live in this vision every single day at work.

A word of advice from Huy Truong of Jurlique International (2005), although it is good to have a vision, a leader has to be pragmatic at some point. No matter how great a leader's vision can be, execution of the vision becomes increasingly important. This is due to the fact that eventually, all this still relies on the real things that are happening, and real people and real markets are needed to realize the growth of the vision.

Different vision works differently for different missions. Hence, a leader must be able to give rise to a vision that reflects the unique strengths, culture, values, and beliefs of the organization as well as display the direction and goals of the company.

Also, through this vision, it is necessary to not only inspire enthusiasm, belief and excitement in employees, but also to inspire loyalty and caring through the participation of all members of the organization. In other words, this would help employees in believing that they have a role in something bigger than themselves and their daily work.

As described by James Kouzes and Barry Posner (2002), "There's nothing more demoralizing than a leader who can't clearly articulate why we're doing what we're doing" (James Kouzes and Barry Posner, 2002). Not everyone is born to be able to have a vision in all matters. Hence, it takes a great leader to have the capability of being visionary.

#### **CHAPTER 3**

#### **METHODOLOGY**

#### 3.1 Introduction

This research employed a quantitative analysis within the key attributes of leadership as reviewed. The selection of the research methodology was influenced by the many existing methods used to quantify leadership values nowadays – a survey. Other methods were considered, such as interviews or the use of other mathematical model but this method of survey shows to be the most convenient method in the case of this research. A questionnaire could be more easily distributed to a wider scope of participants unlike interviews which is selective and cannot be done where a large scale of data is required.

#### 3.2 Questionnaire

The questionnaire was created with a few questions catered to a specific leadership attribute that were presented in the previous chapter of literature review resulting in a total of 36 questions over 10 attributes. Each of the questions requires the participant to choose from a scale of 0 to 5 (0 being "Almost Never" and 5 being "Always).

The questionnaire was done in Microsoft Word Document format where forms of checkboxes were enabled for the convenience of answering the questionnaire "on-screen" without having to print them out for distribution. Furthermore, the questionnaires were all sent by email as a time-saving measure.

#### 3.3 Sample size and limitations

The participants gathered from Malaysia and Australia in this comparative research are senior engineers who are currently in the construction industry. Initially, the questionnaire was meant to target a sample size of 25 from each country; after considering the limitations of the circle of contacts available. Unfortunately, not all questionnaires were returned. There were only 14 and 21 feedbacks from Malaysia and Australia respectively. Hence, due to this limitation, 14 questionnaires were randomly selected from the Australia pile with the rest discarded into the database for future use.

#### 3.4 Data Analysis

All data analysis works were done using spreadsheet. The scale of 0-5 on each question of the survey form was given a rating of 1-9 on each of the numbers on the scale depending on the question. With a few questions that were focused on one attribute, the ratings of that attribute were grouped together to obtain an average value. This was taking into consideration that not all questions were answered perfectly, hence the averaging to obtain a value for that particular attribute. The higher the value shows more inclination towards the indicated attributes.

These average values were tabulated again into spreadsheet, and statistical formulae were used on the data. Firstly, to obtain the mean value of each attribute and finally to obtain the standard deviation to that value. The standard deviation is essential to check the reliability of the data. The smaller the deviation is, the better as this shows that everyone on the survey seems to agree on the same point, i.e. the attribute.

# **CHAPTER 4**

# **EXPECTATIONS**

On the whole, it is presumed that the senior engineers within the construction industry from Australia would show greater of the leadership attributes as compared to the engineers from Malaysia. The theory is that engineers from Australia would personally adopt more of the key attributes required in successful engineering leadership.

The expectations of the outcome based on the individual attributes are summarized here. The following expectations are selective on the attributes that have major points of interest:

- The engineers from Malaysia are very much more technical and analytical compared to the engineers from Australia, although generally all engineers are typically technical.
- The engineers in Australia are more enthusiastic and aware of the importance of on-going learning and development, and are especially concerned with selfknowledge.
- There is a higher level of confidence and courage in the Australians as per the quality of "attitude" in the leadership context.
- The engineers from Australia are able to view the wider picture better due to sufficient exposure to diversity in the workforce.
- The engineers from Australia are more value-based whereas the engineers from Malaysia are more analytical-based.
- The decision-making style of engineers from Australia is less autocratic than the style adopted by the engineers from Malaysia.

# **CHAPTER 5**

## DATA ANALYSIS

#### 5.1 Introduction

This project aiming to comparatively study the key attributes of engineering leadership between the countries Australia and Malaysia employs both quantitative and qualitative research analysis. With the data obtained by means of the survey questionnaire, the data are quantitatively analysed by simple mathematical formulae done on spreadsheet. The availability of this quantified data then enables the qualitative analysis to be carried out. The qualitative analysis generally uses the concept of deduction and reasoning, with the aid of the literature review. The final outcome of this analysis would be to see if the findings and data obtained support the expectations and hypothesis.

## 5.2 Overview of Participants' Profile

Of the 14 sample sizes selected from each country, the following are the general information of the senior engineers who participated in this survey whilst retaining complete confidentiality:

- All of the participants from Malaysia are based in a local company.
- Six participants from Australia are based in a local company with the rest in global company (8).
- There are two female participants from Malaysia and only one female participant from Australia, with all the rest being male engineers.
- All senior engineers who participated are from a whole range of age group.
- Most participants are Bachelor's Degree holder, with a handful who obtained a
  Master's Degree, except one with Diploma and one with Doctorate from
  Australia.

 All senior engineers who answered the questionnaires had at least 6 years of experience in the engineering industry with one from Australia who had more than 40 years of experience.

#### 5.3 Comparative Analysis of results data

### 5.3.1 By attribute

This section would discuss the data quantitative and qualitatively. The values of concern in this context are the mean  $(\mu)$  and the standard deviation  $(\sigma)$ . The standard mean (average) is taken to be 5, as derived from the rating of 1 to 9 given. The tabulation of the results data can be seen in Table 1.1 of the Appendix 1C.

#### 5.3.1.1 Interpersonal skills

As seen in the tabulated data [Table 1.1], both the mean values for the interpersonal skills attribute are above the standard mean value of 5. This is an indication that both engineers in Australia and Malaysia do, in fact, place the importance of people-skills in mind. Without a doubt, it can also be seen these days that most engineers, wherever the engineers may come from, try to be as trustworthy as possible. The value from Malaysia being slightly higher than the standard mean (5.86) and the value from Australia being even higher (6.39) shows that engineers in both countries do practice the necessary skills in maintaining a relationship, be it between client or with other members of the company.

These values also demonstrate the likelihood of the engineers in Australia who could be more people-oriented, and could be more concerned about maintaining good relationships, i.e. less self-centred, better in communication and holds greater deal of empathy. And of course, with possibly less cases of corruption heard within the construction sector in Australia, the higher value of Australia in terms of the interpersonal skills attribute supports that Australian engineers believe more strongly in integrity as compared to those in Malaysia.

#### **Summary:**

- The higher mean value (μ), the more favourable, to show greater adoptability of the attribute.
- Both mean values (μ) from the two countries are above the standard mean value of 5 (μ-standard).
- $\mu$ -Australia (6.39) >  $\mu$ -Malaysia (5.86)
- Engineers from both countries do practice interpersonal skills in maintaining relationship.
- Australian engineers more people-oriented; better in communication, holds greater deal of empathy and integrity.

### 5.3.1.2 Value-based vs. analytical-based

A mean value of 5.34, above the standard mean value, is acquired for the "values" attribute of engineers in Australia as opposed to 4.63 from Malaysia which is slightly below the standard value of 5. Generally, in terms of this particular attribute, it means that the Australian engineers are more of a V-type (value-based) whereas the Malaysian engineers are more of an A-type (analytical).

As mentioned, it would be favourable to have both the qualities, i.e. a favourable value of 5, but in the context of comparison, the result shows the dissimilarity. Malaysians are categorized as Asian, and most likely due to culture or heritage, the Asian people have been universally deemed as more analytical when compared to westerners and Australasian/Australians. Hence, when distinguished, the Australians are considered to adopt more "feeling" when handling matters rather than the so-called typical Asians who are more analytical-based.

- Favourable value at μ-standard of 5 in order to have balance between the two functions.
- μ-Australia (5.34) above μ-standard; μ-Malaysia (4.63) below.
- $\mu$ -Australia (5.34) >  $\mu$ -Malaysia (4.63)

• Australian engineers more of a V-type ("feeling"/value-based) whereas Malaysian engineers more of an A-type (analytical-based).

#### 5.3.1.3 Soft skills vs. Technical skills

There is not much distinction between the engineers from the two countries when it comes to soft skills and technical skills. The mean values 4.14 and 4.21, for Australia and Malaysia respectively, are well below the favourable standard mean value. Similar to the A/V approach, to have a balance of both technical skills and soft skills are what good leaders should have, although the latter is seen to be lacking in most engineers. Hence, the importance of picking up soft skills has been emphasized especially in the typical world of engineering which in majority is all about technicality. The obtained values undoubtedly reinforced the statement above that engineers are, in fact, soft-skill deficient and displaying the known technical qualities an engineer is deemed to have in excess.

#### **Summary:**

- Favourable value at  $\mu$ -standard of 5 in order to have balance between the two functions.
- Both μ-Australia (4.14) and μ-Malaysia (4.21) below μ-standard.
- Of all the engineers surveyed within Australia and Malaysia, the  $\mu$  for this attribute is the lowest  $\mu$  value amongst other attributes for both countries (4.14 and 4.21 respectively). [Table 1.1]
- Indicates that all the engineers are typically technical people; i.e. soft-skill deficient.

#### 5.3.1.4 Learning and Self-knowledge

Be it for self development or out of curiosity, to acquire knowledge of everything else and to acquire knowledge about oneself are the keys to becoming a successful leader. Australian engineers do not seem to have a problem with this attribute, as can be seen by the mean value of 5.36. As for Malaysian engineers, though the value is very close to the average value of 5, it is still considered as below the "requirement" to excel as a leader.

Although the standard mean value is taken to be 5, in terms of this attribute, the higher the value (from 1 to 9, 9 being most favourable) shows that one is more willing to learn and discover something unknown to him or her. Hence, at a mean value of 4.96, Malaysian engineers seem to be contented with own current achievement and did not seem to make much effort in learning even more. Australian engineers (shown with value of 5.36) would be deemed just a little above average in having this attribute but is still not yet up to a level where they are all-out to discover.

#### **Summary:**

- The higher u, the more favourable, to show greater adoptability of the attribute.
- μ-Australia (5.36) above μ-standard; μ-Malaysia (4.96) below
- $\mu$ -Australia (5.36) >  $\mu$ -Malaysia (4.96).
- Indicates the willingness of Australian engineers to pursue further knowledge; although not to the level where they go all-out to discover and learn.
- Shows that most Malaysian engineers are contented with own current achievement; are less likely to make an effort in further venturing into other unfamiliar expertise for learning purposes.

#### 5.3.1.5 Motivating, Inspiring and Influencing

The mean results for this section are above the standard mean value at 6.34 and 5.80 for Australia and Malaysia respectively. Not exactly what is deemed satisfactory but the data do show that the engineers in both these countries have the leadership attribute in them. It is a requirement that when dealing with subordinates or clients, a lot of communication and "pleasing" must be involved in the life of an engineer. Hence, consciously or unconsciously, it would be natural that these

engineers have their ways of motivating, inspiring and influencing subordinates to move towards the same common organizational goal.

Notice that the mean value for those in Malaysia is generally lower. Possibly, due to culture, Asian are characterized as being industrious (mayhap due to passion, responsibility or due to the monetary gain) leading to the tendency of getting too "self-preoccupied". And as unpleasant as it may become, some are lead into being too self-centred and cares more about personal advancement. Not to imply that Australasian are not diligent, but Australasian are usually deemed as more carefree and sharing when it comes to certain matters.

## **Summary:**

- The higher  $\mu$ , the more favourable, to show greater adoptability of the attribute.
- Both  $\mu$ -Australia (6.34) and  $\mu$ -Malaysia (5.80) above  $\mu$ -standard.
- $\mu$ -Australia (6.34) >  $\mu$ -Malaysia (5.80).
- Engineers in both countries adopt this attribute by nature through the necessity of communication and interaction to attain company goal.
- Most Malaysian engineers get too industrious and self-preoccupied; i.e. due to passion, responsibility or monetary gain.
- Implication that Australian engineers deemed more carefree, sharing and less self-centred.

#### *5.3.1.6 Attitude*

The data obtained in this section is some what similar to the data in the previous section. Both engineers in Australia and Malaysia show the attributes of having good attitude by displaying a mean value of 6.54 and 5.64 respectively (6.54 is highest value amongst the other attributes of the Australians surveyed). Again, not entirely satisfactory, but the values are good enough to be inclined towards the better side of the scale. Part of the minor attributes of good attitude is the courage, curiosity to learn, confidence and being a good listener.

Australasian people are brought up differently compared to Asian. Most Australasian people are brought up more independent than most "spoon-fed" Asian. This is likely to bring about the higher level of courage and confidence in Australasian. As for the "listener" quality, it can be concluded that the reasons are pretty much similar to the "self-preoccupied" or "self-centred" factor mentioned in the section above. With these unfavourable factors within oneself, this could be the reason why Asian are less patient at times when it comes to listening.

## **Summary:**

- The higher  $\mu$ , the more favourable, to show greater adoptability of the attribute.
- Both  $\mu$ -Australia (6.54) and  $\mu$ -Malaysia (5.64) above  $\mu$ -standard.
- Within the Australians surveyed,  $\mu$ -Australia highest for this attribute  $\mu$  value amongst other attributes (6.34). [Table 1.2]
- $\mu$ -Australia (6.34) >  $\mu$ -Malaysia (5.64).
- Implication that most Australasian brought up to be more independent rather than "spoon-fed"; i.e. more courageous and confident than Asian.
- The self-preoccupied Asian likely to be less patient when it comes to being a listener.

#### *5.3.1.7 Diversity*

After all the previous sections, this section shows a turn in the data between the two countries. Although the mean values are similar (5.46 for Australia; 5.55 for Malaysia), it displays a higher value of the attribute in Malaysia than the one in Australia. Bear in mind that Malaysia is a country of various cultures and this generates an advantage for Malaysians in terms of diversity. As for the Australian engineers, in this case that most of the participants are in a global company, it can be expected that the exposure gained are most likely from the training and development provided.

Referring to all those discussed in the previous sections, it can generally be concluded that mayhap Australasian are more open minded that Asian due to the distinct Western and Eastern culture. But because of this "advantage" Malaysians

have to be living amongst different races, this could be an explanation to the higher mean value and the explanation as to how Malaysian engineers are in par with the Australian engineers in the context of diversity and open-mindedness.

## **Summary:**

- The higher  $\mu$ , the more favourable, to show greater adoptability of the attribute.
- Both  $\mu$ -Australia (5.46) and  $\mu$ -Malaysia (5.55) similar and above  $\mu$ -standard.
- $\mu$ -Australia (5.46) <  $\mu$ -Malaysia (5.55).
- The variety in cultures and heritage in Malaysia signifies diversity.
- Australians likely to have to gain the exposure to culture diversity with training and development abroad.
- Open-mindedness of Australasian versus the "advantage" of Malaysians living in a diverse culture indicates the similarity of the two μ values.

## 5.3.1.8 Decision-making style

The side upon which the value falls on the scale of 1 to 9 determines whether the decision-maker is more or less autocratic. The mean value of 5.20 for Australian engineers falls on the higher end of the scale (above standard mean of 5); indicating that the engineers are less autocratic in decision-making style. In comparison to the mean value acquired for Malaysian engineers, the value of 4.27 seems to negatively further away quite a bit from the standard mean value; hence, displaying more autocracy.

In other words, Australian engineers tend to adopt more of a persuasive style of decision-making and Malaysian engineers are adopting the more directive style. Being directive does not necessarily imply that the decision-maker is entirely dictatorial and is usually shunned. These values are just values of comparison, and 4.27 is not a value too close to 1. Therefore, it can be concluded that Malaysian engineers display a more directive style as compared to the Australian engineers that are more consultative.

Also, with relevance to the profile of the survey participants [Table 1.3], there are three considerably high individual values for this attribute for the engineers from Australia – profile 3, 5 and 10. This high value is again, the indication of the decision-making style that is less autocratic. Note that these participants who are above 41 years old, either are currently in managerial positions or have substantially many years of experience in the engineering industry (21 to 30 years, and above 40 years).

As for the ones from Malaysia, the two highest individual values are from profile 5 and 6. The connection to the current position held could not be made as the participants did not fill that out. But the point to note here is that both the participants are in the last two ranges of the number of "years in engineering". Whereas the lowest individual values for Malaysia are from profile 4, 10, 11 and 12, noting that two of them are senior design engineers.

- The higher  $\mu$ , shows a lesser autocratic decision-making style.
- μ-Australia (5.20) above μ-standard; μ-Malaysia (4.27) below.
- Point to note on the profiles with the highest individual value; i.e. less autocratic style
  - (Australia) 2/3 currently in managerial position; 3/3 with substantial number of years in engineering profession.
  - (Malaysia) within the range of least years in the engineering profession.
- Point to note on the profiles with the lowest individual value; i.e. more autocratic style
  - (Australia) unable to deduce from the lack of information.
  - (Malaysia) 2/4 are senior design engineers, with the other 2 not stating the position held.
- Indicates that Malaysian engineers adopt a more directive decision-making style (autocratic); Australian engineers adopt a more persuasive/consultative style (less autocratic).
- Display of higher autocracy does not imply dictatorship.

#### 5.3.1.9 Passion

Based on the data tabulated, it appears that Malaysian engineers are very passionate about their job. In fact, this is the highest value amongst all the other attributes within the Malaysian participants' group (mean value of 6.71). As for Australia, the mean value for the attribute "passion" is 5.82 which is also quite well above the average standard mean value.

Take note that this would be the second switch in the results, where the value for Malaysia is higher than the value for Australia but this time, the gap difference is more significant. Looking at the individual data of each profile to note the trend, the majority of the data shows a high value as compared to those of Australia where fluctuations are noticeable, but generally at lower values. Malaysian engineers are seen to have greater passion than the Australian engineers, and this is in terms of being passionate about the job as well as being able to instil passion.

- The higher  $\mu$ , the more favourable, to show greater adoptability of the attribute.
- Both  $\mu$ -Australia (5.82) and  $\mu$ -Malaysia (6.71) above  $\mu$ -standard.
- $\mu$ -Australia (5.46) <  $\mu$ -Malaysia (5.55).
- Within the Malaysians surveyed,  $\mu$ -Malaysia for this attribute highest  $\mu$  value amongst other attributes (6.71). [Table 1.2]
- Trend in individual profile data fluctuates but those obtained from Australia fluctuates at lower values.
- Implicates greater passion/greater capability in instilling passion in the profession of Malaysian engineers compared to the Australian engineers.

#### 5.3.1.10 Vision

In this final section, there is a wide gap in the two mean values for the "vision" attribute; Australia with a value of 4.71 and Malaysia with a value of 6.14. Briefly, it could be considered that the engineers surveyed from Malaysia are generally very visionary and able to "look far into the future" whereas those from Australia could be considered to have much less vision, hence affecting the capability of planning better far ahead.

Unfortunately, this finding could be deemed inaccurate. Note the standard deviation obtained for this particular attribute of the two countries. The deviation for the "vision" attribute of Malaysia is still acceptable (1.51); therefore, the finding could still be valid. But the deviation for that of Australia is at a very high value of 2.70 which leaves a question mark to the reliability of the data analysed.

The questionnaire is structured such that each attribute is assigned a number of statements, proceeding to the derivation of the average value for the attribute before being analysed. To ensure rectification of human errors which could be brought about by misunderstanding of the statement read or the errors made in the answering process. Due to the insufficient statements with relevance to this attribute, the scale values of the answers ticked fluctuates creating a fairly large deviation. Hence, this attribute in this research could be partially deemed void.

- The higher  $\mu$ , the more favourable, to show greater adoptability of the attribute.
- μ-Malaysia (6.14) above μ-standard; μ-Malaysia (4.71) below.
- $\mu$ -Australia (4.71) <  $\mu$ -Malaysia (6.14).
- Implication that Australian engineers could be considered to be less visionary and less capable in planning better for future.
- Result for this attribute could be deemed void:
  - ineffectiveness due to the insufficiency of statements created in the questionnaire for this attribute.

- causes big gap and fluctuation in the questionnaire answers; i.e. a considerably large standard deviation for that of Australia (2.70).
- to conclude, the reliability of the result data obtained is questionable.

#### 5.3.2 Comparative Analysis of results data (of the two countries)

This simple analysis would look at each country as a whole by adding up the mean value of each attribute acquired and then averaging the values. The average value of Australia stands at 5.53 and the average value of Malaysia at 5.38. The two values are not very strayed from one another, but it generally indicates that the engineers from Australia have a slightly better inclination towards the attributes required in successful leadership as compared those from Malaysia. This analysis would be further discussed in the discussion chapter.

#### **Summary:**

- The higher the average, the more favourable, to show greater tendency towards successful leadership.
- Both Ave-Australia (5.53) and Ave-Malaysia (5.38) above value of 5.
- Ave-Australia (5.53) > Ave-Malaysia (5.38).
- Indicates that Australian engineers have slightly better inclination towards the attributes required in successful leadership.

## 5.4 Reliability of Data Analysed

The tabulated results also show the standard deviation acquired for each of the attributes of the separate countries, with the lowest being 0.79 and highest being 2.70. All the deviations with decimals in addition to 1 are considered to be of acceptable limits. The only odd one out is the standard deviation of the "vision" attribute of Australian engineers. With such a considerable value of 2.70, the data for this particular attribute can be regarded as unreliable.

## **Summary:**

- Standard deviation  $(\sigma)$  implicates reliability of data.
- $\sigma$ -lowest = 0.79;  $\sigma$ -highest = 2.70.
- All  $\sigma$ -Malaysia are within acceptable limits.
- All  $\sigma$ -Australia are within acceptable limits, except  $\sigma$ -Australia for the "vision" attribute (2.70).
- In conclusion, the data for the "vision" attribute regarded as unreliable.

## 5.5 Discussion of combined mean in general

To briefly to state the values of interest in the combined mean for each attribute of both the countries together, note that the lowest mean value is indicated on the "soft skills" attribute (4.17) and the highest mean value is on the "passion" attribute (6.27) [Table 1.1]. This generally shows that there is a deficiency in soft skills and a favourable presence of passion in engineers for both countries.

# **CHAPTER 6**

# DISCUSSION

#### 6.1 Introduction

This chapter provides continuance to the preceding chapter of data analysis. Aiming to further discuss the analysis of the results data, this chapter would be an elaboration of the previous chapter colligating all of the results, analysis and the hypothesis of this research project. Implicating the findings comparatively, the discussion would be with reference and relevance to the literature review but there would not be a straight link bringing these two chapters together.

The literature review chapter of this project purports to introduce and provide an insight into the research matter, i.e. leadership and the key attributes, whereas the project as a whole aims to provide an outcome by analysis and comparison of the subject matter between the two countries, Australia and Malaysia. Hence, the direct association between the literature review and the discussion of the results data would be at minimal.

#### 6.2 Discussion (by attributes)

#### 6.2.1 Interpersonal skills

The area and culture sometimes bring an impact on the people, i.e. character-wise. In the construction field, there exists a broad range of people with various levels of profession, for example from labourers to project manager. In this case, it would be presumed that the characteristics of the lower level subordinates could affect or influence the higher level manager, vice versa. With such a diverse organization, it can be expected that, for the worse, negativity side of things prevails. The situation would then be deemed tainted or corrupted.

The above provides an illustration of what sometimes happens in the construction industry in Malaysia. Mayhap, this would generally explain the lower interpersonal skills found in the Malaysian engineers as compared to those in Australia; most likely in terms of integrity, preoccupancy and the egotism in covering up weaknesses rather than learning from it.

The importance of leadership qualities have yet to expand much in Malaysia, as compared to Australia but the data results have shown that the correlation between engineers and the interpersonal skills exists. The obligation of an engineer to always meet people and maintain the interaction among those in the company is likely an importance in the workplace or a "requirement" as a leadership requirement. Hence, the mingling with this attribute to keep the interpersonal skills going, consciously or unconsciously.

As an engineer progresses, moving away from his desk to management and communication factor, he or she picks up the necessary skill to keep everyone around him contented, making all feel pleased with the job and the organization. Also probably by nature, it is known that to displease someone will just make one difficult to carry out tasks without benefiting any member. Thus, the "innate" attribute within most engineers, and that this interpersonal skills attribute is favourable in successful leadership.

## 6.2.2 Value-based vs. analytical-based

For decades or centuries now, the Asian people have been stereotyped as being more analytical rather than value-based. In the case of Malaysia, the Malays, Chinese and Indians (the three largest ethnic groups) are considered Asian. As for Australians, these people are classified as westerners who are stereotyped as adopting more of the "feeling" and emotional factors. These presumptions could more or less already been justified in the result data acquired.

It has pretty much been established that by adopting either the "feeling" or the "thinking" function, the case does not prove the capability of one to perform better than the other. The emphasis of more value-based engineers needed in the field is mainly due to the lack of such people within the construction industry. In other words, this does not mean that one function should prevail the other in order for an engineer to become a successful leader.

The results have been encouraging in the sense that they show quite a favoured value just around the standard mean. This displays the qualities of a balance required in both these attribute in ensuring that an engineer could progress as a leader effectively.

## 6.2.3 Soft skills vs. Technical skills

The grounded view that engineers generally possess more technicality than "soft skills" is reinforced by the results obtained. This is no doubt, the reason why so much emphasis has been placed on the criticalness of more soft skills in the engineering profession. Soft skills mingle about the subjects of management, people and culture. Of course, a major part of this revolves around communication, interpersonal skills and decision making. Generalizing, to know people is to know the organization. By concentrating on technical skills alone, it is deemed difficult to succeed in leadership roles.

Engineering jobs undeniably rely heavily on technical skills. Mathematical and analytical approaches as well as logical thinking are crucial in this profession to produce the required outcome of a project. But as an engineer steps up to higher levels, he or she is required to be involved in levels of management. Then, the technicality of the profession diminishes and the heavier intervening of soft skills are required.

The lack of soft skills within engineers in Australia and Malaysia should be made a point of concern. To conclude, steps to ensure amplification of these skills would be necessary to lead to the enhancement of surety to accomplish the essence of leadership.

### 6.2.4 Learning and Self-knowledge

The satisfaction with current achievements is a good characteristic, but this creates a barrier between oneself and one self's possible advancement. This is a point seen in the analysis, that Malaysian engineers generally have the tendency to be contented with the present as compared to the Australian engineers who are likely to strive for more knowledge. To have the idea that reaching a certain level of the profession is "good enough" is to hinder one's further learning and development.

Lacking boldness of an engineer to step out of the comfort zone to pursue a different subject and knowledge could be one reason leading to the reluctance of further learning and development. The lack of boldness to face and discover the weaknesses of oneself could also be a major obstruction to the attribute of self-knowledge. Perhaps these are the basis to the lower value of the results acquired from Malaysia for this particular attribute.

With respect to the demographics of the sample surveyed, the majority of the Australian engineers who participated come from global companies. It is presumed that most global companies provide training and development programmes within the organization. In fact, to generalize, Australian companies are more active in providing on-job training as compared to Malaysian companies. Therefore, with this training, Australian engineers are more likely to be aware of the importance of development with open-mindedness, hence the greater willingness to pursue further and on-going learning.

#### 6.2.5 Motivating, Inspiring and Influencing

To influence, guide and move subordinates towards an organizational goal is part of leadership roles. When comparing these attributes between the engineers from Australia and Malaysia, although both shows encouraging values in the result, the lesser value is shown on the data of the Malaysians surveyed. As mentioned briefly in the data analysis, the concept "culture" is used as a major indication of the results and would be contributing to elaboration of this section of the chapter.

The term "role model" has been extensively used in the context of leadership and to create a mindset for subordinates to follow is deemed to be the part of a role model. This leads to the subject of responsibility, sharing and the ability to generate an approach that is capable of motivating and influencing. Influencing by motivation and inspiration has been considered a very effective way to get subordinates to follow willingly.

Self-preoccupancy or self-centredness is a big obstruction when it comes to telling a leader to share and inspire with good intentions. Being too engrossed in personal advancement without recognizing a subordinate's achievement and help provide chances for their advancement would only discourage the subordinates. This would in fact be a hindrance to carry out the art of these attributes well, as a requirement of successful leadership.

#### 6.2.6 Diversity and viewing the wider picture

Open-mindedness and diversity are the catalysts to enable one to view all matters in a wider picture. These characteristics also plays a crucial part in aiding an

engineer or leader to logically think of better solutions and be able to be visionary, consequently enhancing better prospects.

Malaysia is a country consisting of many races, hence, the diversified cultures and heritage. Different cultures living different lives and values are exists under the same roof. This already is considered to be at the advantage of Malaysians in terms of diversity. Although there is the likelihood that the Australian engineers could have been provided with some exposure through company training and the presumption that the western culture of Australian creates the natural ability to be more open minded, Malaysians could be said to have equivalent exposure to diversity as well by means of the diversified cultures.

This of course, is without having to actually experience them abroad unlike the Australian engineers who probably have acquired this kind of exposure with adequate training and development in order to stimulate the mind and instil the qualities of being able to view the wider picture. Thus, the ample exposure to such diversity enables the ability of Malaysian engineers to "think out of the box" in the long run.

#### 6.2.7 Decision-making style

The main subject matters covered for this attribute is extensively discussed in the literature review chapter. This section would only briefly elaborate on the results acquired from the data analysis in the previous chapter in fulfilling the discussion of data from the two countries comparatively.

In general, the comparison of the profiles of engineers surveyed could support the literature review that the decision-making styles very much depend on the management hierarchy. All the Australian engineers surveyed are seen as being in the higher range of "years in engineering" as compared to those from Malaysia, displaying that the autocratic decision-making style is usually used in the early stages of management but as an engineer progresses to higher levels of the profession (a more managerial-focussed position), autocracy diminishes and are replaced with a less autocratic style.

The previous statements are also supported by the profiles obtained from Malaysia - two of the most autocratic decision-makers are design engineers where decision-making styles for these engineers are presumed to be very much analytical rather than managerial. But opposing to the review and the statements concluded above, the two least autocratic decision makers are those with least years in the engineering profession. Unfortunately, the positions held were not indicated so further grounds could not be made.

A presumption can only be made for this point (with relevance to their seniority in age), that these engineers were perhaps in less "years in engineering" but then progresses to managerial positions that they do not consider themselves as engineers anymore. This opinion of course, is presuming that the engineers were understanding the term "years in engineering' literally.

#### 6.2.8. Passion

It is deemed that before an engineer decides to take up engineering, interest in the field or profession should at least be present. Hence, this shows the probable presence of "passion" in an engineer even at the slightest. Naturally of course, if an engineer is still passionate about what he or she is doing after years of experience and exposure to the industry, this attribute is most likely to build up with time. Of course, it is only advisable that passion should develop and be adopted in a good way. Excessive passion towards a focused area leads to the concentration of the particular interest and this would contradict the attribute of positive learning and developing due to the possibility of the reluctance to venture into other prospects.

In terms of being able to instil passion into others, i.e. subordinates or colleagues, it can be expressed that this ability can be indirectly linked to self passion. With the passion in oneself, he or she is presumed to know the subject matter well and thus, is able to present this knowledge to others with more ease and also the willingness to spread this passion to those in the organization. An example would be the willingness to explain the details of a subject matter to the

subordinates who wish to know, and ultimately passing the knowledge to him or her.

## 6.2.9 Vision

Following the data analysis for this attribute, further elaboration of this subject matter in this section is deemed needless due to the void of reliable data in hand.

The reason is that the standard deviation for this attribute in the Australian group surveyed is deemed too high, hence the unreliability of the data. This is most likely due to the realization of an error in the statements, thus making the change to the number of statements allocated to each attribute at the last moment, causing the "vision" attribute to have insufficient statements to support. This led to the great fluctuations in the individual values obtained from the questionnaire answers.

## **CHAPTER 7**

# **CONCLUSION & RECOMMENDATIONS**

#### 7.1 Introduction

This project researched into the many attributes relative to leadership singling out the key attributes to be reviewed in depth, consequently documenting the attributes into the literature review chapter. After consideration was given into the methodology, the decision was to come up with a questionnaire as a means of research and analysis. The questionnaire created was based entirely on the key attributes as per the reviews done.

For a start, the research aims to look into the requirements pertaining to effective and successful leadership. This is followed by the data analysis to generate the outcome of this research. Apart from reviewing the attributes of leadership, the other aim of this project is to analyse and correlate the attributes to senior engineers. Finally, the main outcome would be to comparatively study these correlations between the two countries, Australia and Malaysia.

#### 7.2 Limitations and Difficulties involved

In the literature review chapter, a lot of reading had to be done and examined to pick out key attributes deemed appropriate in the context of this research project. But the majority of the difficulties involved where in the methodology of this project. The limitations of the methodology and data (refer to Chapter 3) was a major concern.

Due to the lack of contacts in Australia and the difficulty to contact the engineers in Malaysia, the sample size acquired for the survey was considerably small. This has constrained much of the reliability and validity of the analysis, hence, the results of the analysis could be questionable at some points although the data might seem to support the hypothesis and expectations.

The questionnaire created to aid in the research project centres on the attributes with a few statements allocated to each attribute. The statements were reexamined and there was a change to one of statements with relation to the attribute allocated. Unfortunately, this was discovered after the recollection of the questionnaires, hence, the inconsistency in the number of statements per attribute. The reliability of the data for the particular attribute (vision) was voided.

#### 7.3 Conclusion & Recommendation (by attributes)

This section follows the previous chapters of data analysis and discussion.

## 7.3.1 Interpersonal skills

The results showed quite encouraging values implicating the presence of interpersonal skills in the engineer from both countries. Both the values from Australia and Malaysia are considered well above the expected standard mean value but the former still prevails supporting the hypothesis that Australian engineers would generally have higher adoptability of this attribute than the Malaysian engineers.

#### 7.3.2 Value-based vs. Analytical-based

The hypothesis is accepted stating that Australian engineers are more "feeling" type than the Malaysian engineers, i.e. more value-based than analytical-based, although being more value-based does not necessarily mean that an engineer would make a better leader. The literature provides further ground to the satisfactory of both the results data which only strays a little from the standard mean value. This is the indication that while the distinction is there between the attributes from these two countries, the favourable balance between the value-based type and the analytical-based type shows in the engineers of both Australia and Malaysia.

#### 7.3.3 Soft skills vs. Technical skills

In this section theory stated in the expectations is only half correct. Typically, all engineers are more inclined towards technicality whether they are from Malaysia or Australia. The other half of the theory that is proved wrong is that Australian engineers adopt more soft skills (more people-oriented) than Malaysian engineers. But the results show otherwise with only a slight gap in the value between these two countries.

In general, the mean values for both the countries are of the lowest value among the other attributes. This calls for the crucial emphasis for soft skills, and training and development could be a way to enhance the soft skills undiscovered in a leader. As long as an engineer is within the level of the industry, it can be expected that the technicality will remain unless the engineer progressively move towards managerial level and pick up the soft skills on-the-job.

#### 7.3.4 Learning and Self-Knowledge

The adoptability of this attribute is only at an average level with the value from Australia higher than the standard mean and the value from Malaysia slightly lower. The expectation that Australian engineers are more enthusiastic in learning and self discovery is further grounded. Also, it could be a possibility that due to lack of boldness, this creates the unwillingness of an engineer to venture out of his "comfort zone" to learn. Nevertheless, methods of instilling the awareness of the importance of on-going learning and the development of self-knowledge should be considered in order to increase the embrace of this attribute. Engineers should have a global mindset to ensure the effectiveness of successful leadership, and could do so by going abroad as a process of learning.

## 7.3.5 Motivating, Inspiring and Influencing

The ability to motivate, inspire and influence requires a leader to remove all sense of self-centeredness and self-preoccupancy. Although the results showing that the engineers from both countries adopting this characteristic are satisfactory, the present value could still be amplified for the better. The lower value from the Malaysian engineers is possibly due to the culture factor as discussed, i.e. self-preoccupancy, and in order to become a good role model of leadership, the willingness to recognize the advancement of others rather than personal advancement is crucial.

#### 7.3.6 Attitude

Attitude plays a major role in leadership. The prediction that the engineers from Australia have better attitude in terms of courage, confidence and the ability to listen, than the engineers from Malaysia is true based on the results obtained from the analysis. In fact, among all the other attributes surveyed, the "attitude" quality presents the highest value within the Australian group. The reasoning was generalized to the independently brought up of children in the Australian culture as compared to the brought up of Malaysians, sometimes with "too much care".

### 7.3.7 Diversity

A diversified mindset plus open-mindedness are important in the initiation of a great leader. The results obtain for this attribute did not seem to concur with the expectations that the Australian engineers have a wider perspective of things when compared to the Malaysian engineers. The values show otherwise, that the Malaysian engineers have a higher value in terms of diversity. It has been concluded that although the Australians have been stereotyped to be more openminded than Malaysians (Asians), it is a possibility that the results could be due to the fact that Malaysians, made up of three main races, live amongst a variety of cultures and heritage.

#### 7.3.8 Passion

The analysis of the data shows that the attribute "passion" is on top of the list (highest adoptability) of the other attributes as surveyed in Malaysia. Also, the results implicate Malaysian engineers as being more passionate and better able to instill passion in others compared to the results obtained from the Australian group.

All the same, the data for this attribute for Australian engineers is not at a disappointing value. Hence, the deduction that the engineers are most likely to have the interest in the field then, before actually making a decision to commit oneself to this profession.

#### 7.3.9 Vision

Due to the incompetent results obtained, the analysis and discussion of this attribute is voided. The standard deviation for the mean value of the attribute is high and at an unacceptable value, which indicates the unreliability of the data in hand. The cause of this big deviation is due to great fluctuation in the Australian group surveyed. This error is caused by the insufficient number of statements allocated to this attribute in the questionnaire created.

#### 7.4 Summary:

- Comparatively speaking between leadership among the Australian engineers and
  the Malaysian engineers, although there appears to be the generalization that the
  Australian culture would probably generate better leadership attributes in the
  Australian engineers, there exists other factors that proves otherwise.
- The research of the subject leadership covers a very extensive range and there is much to learn about leadership due to the subjective topics within the matter itself. Hence, the research into leadership could be endless.

#### • Recommendation for future works:

- a research with more in-depth review with more key attributes that is required in leadership.
- a different approach to the methodology of the research, such as interviews or the usage of the available leadership models with relevance to the research topic.
- if a survey questionnaire is used, a bigger number of statements allocated to the attributes would help generate a more reliable data. Also, perhaps a more detailed questionnaire with different styles of questions could be created for a more in-depth and accurate results.
- improve on the sample size of the survey to ensure the validity and reliability of the data for analysis.
- the research data could be further analyzed with statistical models or other mathematical formulae to show a more extensive and detailed results, which would provide better understanding of the subject matter of leadership.

# **APPENDICES**

# $APPENDIX\ 1\ A-Project\ Specification$

	University of Southern Queensland Faculty of Engineering and Surveying
	ENG 4111/4112 Research Project PROJECT SPECIFICATION
FOR:	PoLyn H'NG
TOPIC:	Comparative Study of Engineering Leadership of Senior Engineers in Malaysia and Australia within the Construction Industry
SUPERVISOR:	Mr. Steven Goh
ENROLMENT:	ENG 4111 (S1) & ENG 4112 (S2), D, 2007
PROJECT AIM:	This project purports to survey on the leadership attributes of senior civil engineers within the construction industry in both Malaysia and Australia
PROGRAMME: Issue A	, 14 <sup>th</sup> March 2007
1) Look up for pote	ential engineers in the construction industry in Malaysia and Australia.
2) Start on literature	e review by identifying key attributes in leadership.
3) Identify the list of	of potential engineers and contact them.
4) Conduct further of senior engineer	research on the leadership qualities and with relevance to the characteristic ers.
5) Search for releva	ant available questionnaires and have a look at them.
6) Design own ques	stionnaire to enable quantifying for the leadership attributes.
7) Distribute the qu	estionnaires to the engineers to conduct the survey.
8) Evaluate and ana	alyze to see if the result from questionnaire supports the literature review.
9) Prepare and com	plete the dissertation.
As time permits:	
10) Redesign or com	ne up with a new questionnaire to refine the research.
AGREED: (St	tudent) (Supervisor)
PoLyn	H'ng Mr. Steven Goh

## APPENDIX 1B QUESTIONNAIRE

#### Introduction

The leadership attributes of engineers have been deemed crucial lately and have reached a point where the link between leadership and engineering is debatable. Hence, this project purports to survey on the leadership attributes of senior civil/environmental engineers within the construction industry in both Malaysia and Australia.

The outcome of this project would be obtained by quantitative survey and evaluation of the comparative study, which would greatly depend on the aid of this questionnaire. Analysis of the surveys relating to the leadership attributes found in the literature review would be conducted. The final results observed would then be extensively evaluated in terms of a comparative study between those attributes and between the senior engineers of Malaysia and Australia.

# Part A: Profile

Please mark ⊠ into the box provided.
1) Gender:  Male Female
2) Age:
3) Qualification:  Elementary school  High school  Certificate / Diploma  Bachelor's Degree  Master's Degree  Doctorate / PhD  Others (please specify)
4) Years in engineering:
5) Company:  Local Global

# Part B

In the following, please indicate the number on the rating scale that best applies to each statement with  $\boxtimes$ . In selecting each response, please be as truthful as possible.

Almost never	Once while	in a	Sometimes	Fairly often	Frequently	Always
0	1		2	3	4	5

Sect	ion 1	0	1	2	3	4	5
1.	I take action quickly because nothing is more important than accomplishing a goal or task.						
2.	I map out detailed plans and work my plan, knowing all essentials.						
3.	When seeing a complex task through completion, I ensure that every detail is accounted for.						
4.	I enjoy analysing problems and thinking on the solutions.						
5.	I prefer to stay with the tried and true and minimize risk.						
6.	I am happy with my present status and situation.						
7.	I take the initiative in seizing the opportunity to lead and taking charge of the unit.						
8.	I run disciplined meetings where everything goes by the book.						
9.	I push my subordinates from behind and get things to go accordingly.						
10.	I tell my subordinates what to do and expect them to follow.						
11.	I am not able to let go and empower my subordinate to entirely run a unit.						
12.	I set personal examples of what I expect of others.						
13.	I pay attention to details having a finger on the pulse of day-to-day activities.						
14.	I am comfortable at my level of expertise and not particularly keen on delivering at levels of business.						
15.	I do not worry about jeopardizing relationships when it comes to correcting mistakes.						
16.	I believe that every subordinate is capable enough to fend for themselves.						
17.	I feel intimidated when constantly subjected to other people's judgement.						
18.	I am comfortable with taking orders than playing an active role in the company strategies.						

# Part B (Cont'd)

Almost never	Once while	in	a	Sometimes	Fairly often	Frequently	Always
0	1			2	3	4	5

Sect	ion 2	0	1	2	3	4	5
19.	I am curious to know everything about each task and do not mind if I have to stretch the deadline.						
20.	I emphasize on how the work is completed by looking at future trends.						
21.	I enjoy explaining intricacies and details of a complex project to my subordinates.						
22.	I know what is happening in the administrative sector at my workplace.						
23.	If there is any change, I embrace it and go with the flow.						
24.	If I get the chance, I do not mind getting tasks outside my area of expertise.						
25.	I encourage my team to participate when it comes to decision making time, and I try to implement their ideas and suggestions.						
26.	I encourage my subordinates to be creative about their jobs.						
27.	I try to be persuasive in getting my subordinates to carry out the tasks, i.e. when our ideas contradict.						
28.	It is my second nature to be around whenever my subordinates need to consult.						
29.	I give my subordinates plenty of space to show initiative and I honour their boundaries.						
30.	I set personal examples for others to follow.						
31.	I am never overly worried about where I am going to be and just concentrate on doing my present job competently.						
32.	I understand the diversity of all business conditions.						
33.	I am compassionate / responsive to others' needs and feelings.						
34.	I develop cooperative relationship among people I work with and try to share as much as I can. $ \\$						
35.	I stand up for what I feel is right, regardless of it being right or wrong.						
36.	I listen attentively to all of my subordinates' ramblings.						

~END OF QUESTIONNAIRE~

 $APPENDIX\ IC-Tabulation\ of\ Results\ Data$ 

# <u>AUSTRALIA</u>

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Mean	SD
Int. skills	7.00	7.00	5.00	4.33	7.67	7.33	6.17	6.33	6.67	7.33	7.67	5.67	6.33	5.00	6.3929	1.0579
Values	6.00	5.50	5.67	5.67	6.83	4.00	6.25	4.33	4.17	6.83	5.50	4.83	4.22	5.00	5.3429	0.9522
Soft skills	6.33	4.17	5.67	3.33	3.00	4.33	5.67	2.33	4.33	4.00	5.67	2.33	5.00	1.67	4.1307	1.4480
Learning	6.00	8.25	5.50	5.00	5.25	4.50	6.00	6.00	4.50	5.00	4.50	5.50	3.00	6.00	5.3571	1.1796
Mot, Inf	7.20	7.40	6.40	7.00	7.20	6.20	6.20	6.20	6.40	6.20	6.00	6.40	4.20	5.80	6.3429	0.7900
Attitude	6.75	7.50	6.75	6.00	5.00	6.75	8.75	6.50	7.25	4.25	7.00	6.25	7.25	5.50	6.5357	1.1174
Diversity	6.50	6.75	6.25	5.50	6.50	3.25	5.00	7.00	3.75	4.50	6.00	5.50	5.75	4.25	5.4643	1.1638
Dec-making	5.50	5.25	6.25	4.50	6.75	4.00	6.00	3.00	4.50	6.00	5.50	5.50	5.00	5.00	5.1964	0.9765
Passion	2.00	8.00	4.50	6.00	6.00	6.00	6.00	8.00	3.50	5.00	4.50	8.00	6.00	8.00	5.8214	1.8251
Vision	7.00	9.00	1.00	5.00	3.00	3.00	1.00	9.00	3.00	3.00	3.00	5.00	7.00	7.00	4.7143	2.7012
															5.5299	

# **MALAYSIA**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Mean	SD
Int. skills	4.33	7.00	7.00	5.00	4.33	5.00	8.00	6.67	7.00	6.33	4.33	5.67	5.00	6.33	5.8564	1.2043
Values	4.50	4.33	4.50	4.00	6.00	5.83	3.67	5.00	6.33	4.33	4.67	4.00	4.33	3.33	4.6300	0.8794
Soft skills	5.67	3.67	4.00	2.33	5.00	3.67	5.00	3.00	4.33	4.33	5.00	4.33	4.33	4.33	4.2136	0.8639
Learning	7.50	5.50	4.50	4.50	5.50	6.50	3.75	4.75	7.00	5.50	3.25	2.00	4.50	4.75	4.9643	1.4606
Mot, Inf	5.00	6.00	4.60	6.20	6.20	7.40	6.20	5.00	7.60	4.20	5.40	6.60	6.20	4.60	5.8000	1.0377
Attitude	5.00	7.50	5.00	8.50	4.50	4.00	6.25	5.00	6.50	4.50	6.00	5.00	6.50	4.75	5.6429	1.2812
Diversity	6.75	5.50	6.00	6.00	6.00	6.00	3.50	4.50	7.00	5.00	4.50	4.00	5.00	8.00	5.5536	1.2333
Dec-making	5.25	3.50	5.00	3.00	6.50	5.75	4.00	4.50	4.50	3.00	3.00	3.00	3.50	5.25	4.2679	1.1580
Passion	6.00	7.00	7.00	8.00	5.00	7.00	9.00	4.00	8.00	7.00	7.00	7.00	9.00	3.00	6.7143	1.7289
Vision	5.00	7.00	5.00	5.00	5.00	9.00	3.00	7.00	5.00	7.00	7.00	7.00	7.00	7.00	6.1429	1.5119
															5.3786	

Table 1.1

# General Mean of each Attribute

	Mean
Int. skills	6.12
Values	4.99
Soft skills	4.17
Learning	5.16
Mot, Inf	6.07
Attitude	6.09
Diversity	5.51
Dec-making	4.73
Passion	6.27
Vision	5.43

Table 1.2

# APPENDIX 1D – Tabulation of Profile of the Participants'

# **AUSTRALIA**

Profile	Gender	Age	Qualification	Years in engineering	Company demographic	Current position held
1	М	> 50	Bachelor's Deg	31 - 40	Local	-
2	М	> 50	Master's Deg	11 - 20	Local	CEO
		41 -				
3	M	50	Bachelor's Deg	21 - 30	Local	Manager (Energy & Infrastructure)
4	М	> 50	Doctorate / PhD	21 - 30	Local	Strategist
5	M	41 - 50	Bachelor's Deg	21 - 30	Local	Manager Operations Integration
6	F	< 30	Bachelor's Deg	6 - 10	Global	Environmental Scientist/Project Manager
7	М	> 50	Bachelor's Deg	21 - 30	Global	-
8	М	> 50	Bachelor's Deg	31 - 40	Global	-
9	M	41 - 50	Master's Deg	21 - 30	Local	-
10	M	> 50	Certificate/Diploma	> 40	Global	Principal structural engineer
11	М	> 50	Bachelor's Deg	31 - 40	Global	-
12	М	> 50	Master's Deg	31 - 40	Global	Principal design manager
		41 -				
13	М	50	Bachelor's Deg	21 - 30	Global	-
14	М	> 50	Master's Deg	31 - 40	Global	-

# <u>MALAYSIA</u>

Duefile	Condon	A	Ovalification	Years in	Company	Command manifold
Profile	Gender	Age	Qualification	engineering	demographic	Current position held
1	M	> 50	Master's Deg	21 - 30	Local	Principal engineer
2	М	> 50	Master's Deg	31 - 40	Local	-
		31 -				
3	M	40	Bachelor's Deg	6 - 10	Local	-
		31 -				
4	M	40	Bachelor's Deg	11 - 20	Local	-
		31 -				
5	M	40	Bachelor's Deg	6 - 10	Local	-
		41 -				
6	M	50	Bachelor's Deg	11 - 20	Local	-
		31 -				
7	M	40	Bachelor's Deg	6 -10	Local	Senior engineer
		41 -				
8	M	50	Master's Deg	11 - 20	Local	Project Manager
9	М	> 50	Bachelor's Deg	21 - 30	Local	-
10	F	< 30	Bachelor's Deg	6 - 10	Local	Senior design engineer
		31 -				
11	M	40	Bachelor's Deg	11 - 20	Local	Senior design engineer
		31 -				
12	F	40	Master's Deg	6 - 10	Local	-
						General manager (property
13	М	> 50	Bachelor's Deg	21 - 30	Local	development)
14	М	< 30	Bachelor's Deg	6 - 10	Local	Project manager

Table 1.3

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# THE UNIVERSITY OF SOUTHERN QUEENSLAND FACULTY OF ENGINEERING & SURVEYING

#### **BACHELOR OF ENGINEERING (CIVIL)**

#### Research Topic:

# COMPARATIVE STUDY OF ENGINEERING LEADERSHIP OF SENIOR ENGINEERS IN MALAYSIA & AUSTRALIA WITHIN THE CONSTRUCTION INDUSTRY

I would like to seek your kind cooperation and assistance to participate in this academic research project which is part of the Bachelor of Engineering degree programme managed by the University of Southern Queensland, Australia.

This research is undertaken in partial fulfilment of the requirements for the bachelor's degree and is purely for academic purposes only. Respondents are rest assured that all replies will be treated with full confidentiality.

This questionnaire will only take approximately 10 - 15 minutes to complete. I would like to thank you in advance for sparing a little of your valuable time to aid in this research project. Your help, honesty and frank opinion in this questionnaire would be greatly appreciated.

For your convenience, the questionnaire could be electronically completed in this Word Document. If there are any doubts or questions concerning the questionnaire or the research, please do not hesitate to contact me at <a href="mailto:lyneet@hotmail.com">lyneet@hotmail.com</a>.

Sincerely, PoLyn H'ng

BEng Civil (ID: 0050043783) Contact no.: +61 (04) 2329 0426

#### Introduction

The leadership attributes of engineers have been deemed crucial lately and have reached a point where the link between leadership and engineering is debatable. Hence, this project purports to survey on the leadership attributes of senior civil/environmental engineers within the construction industry in both Malaysia and Australia.

The outcome of this project would be obtained by quantitative survey and evaluation of the comparative study, which would greatly depend on the aid of this questionnaire. Analysis of the surveys relating to the leadership attributes found in the literature review would be conducted. The final results observed would then be extensively evaluated in terms of a comparative study between those attributes and between the senior engineers of Malaysia and Australia.

# Part A: Profile Please click into the box provided $\boxtimes$ to mark or type into where relevant. 1) Gender: Male Male Female 2) Age: 31-40 years $\boxed{\phantom{0}}$ 41 – 50 years $\boxtimes$ > 50 years 3) Qualification: Elementary school ☐ High school Certificate / Diploma Bachelor's Degree Master's Degree Doctorate / PhD Others (please specify) 4) Years in engineering: <5 years</p> $\Box$ 6 – 10 years $\square$ 11 – 20 years $\boxtimes$ 21 – 30 years 31-40 years $\square > 40$ years (Please state current position held) Principal Engineer 5) Company: □ Local Global

In the following, please indicate the number on the rating scale that best applies to each statement with  $\boxtimes$ . In selecting each response, please be as truthful as possible.

Almost never	Once in a while	Sometimes	Fairly often	Frequently	Always
0	1	2	3	4	5

	Section 1	0	1	2	3	4	5
1.	I take action quickly because nothing is more important than accomplishing a goal or task.						
2.	I map out detailed plans and work my plan, knowing all essentials.					$\boxtimes$	
3.	When seeing a complex task through completion, I ensure that every detail is accounted for.			$\boxtimes$			
4.	I enjoy analysing problems and thinking on the solutions.						$\boxtimes$
5.	I prefer to stay with the tried and true and minimize risk.						
6.	I am happy with my present status and situation.						
7.	I take the initiative in seizing the opportunity to lead and taking charge of the unit.				$\boxtimes$		
8.	I run disciplined meetings where everything goes by the book.		$\boxtimes$				
9.	I push my subordinates from behind and get things to go accordingly.						
10.	I tell my subordinates what to do and expect them to follow.						
11.	I am not able to let go and empower my subordinate to entirely run a unit.			$\boxtimes$			
12.	I set personal examples of what I expect of others.					$\boxtimes$	
13.	I pay attention to details having a finger on the pulse of day-to-day activities.		$\boxtimes$				
14.	I am comfortable at my level of expertise and not particularly keen on delivering at levels of business.						
15.	I do not worry about jeopardizing relationships when it comes to correcting mistakes.				$\boxtimes$		
16.	I believe that every subordinate is capable enough to fend for themselves.					$\boxtimes$	
17.	I feel intimidated when constantly subjected to other people's judgement.					$\boxtimes$	
18.	I am comfortable with taking orders than playing an active role in the company strategies.			$\boxtimes$			

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	Section 2	0	1	2	3	4	5
19.	I am curious to know everything about each task and do not mind if I have to stretch the deadline.						
20.	I emphasize on how the work is completed by looking at future trends.				$\boxtimes$		
21.	I enjoy explaining intricacies and details of a complex project to my subordinates.					$\boxtimes$	
22.	I know what is happening in the administrative sector at my workplace.						$\boxtimes$
23.	If there is any change, I embrace it and go with the flow.						$\boxtimes$
24.	If I get the change, I do not mind getting tasks outside my area of expertise.						$\boxtimes$
25.	I encourage my team to participate when it comes to decision making time, and I try to implement their ideas and suggestions.						
26.	I encourage my subordinates to be creative about their jobs.					$\boxtimes$	
27.	I try to be persuasive in getting my subordinates to carry out the tasks, i.e. when our ideas contradict.				$\boxtimes$		
28.	It is my second nature to be around whenever my subordinates need to consult.				$\boxtimes$		
29.	I give my subordinates plenty of space to show initiative and I honour their boundaries.			$\boxtimes$			
30.	I set personal examples for others to follow.				$\boxtimes$		
31.	I am never overly worried about where I am going to be and just concentrate on doing my present job competently.						$\boxtimes$
32.	I understand the diversity of all business conditions.					$\boxtimes$	
33.	I am compassionate / responsive to others' needs and feelings.						
34.	I develop cooperative relationship among people I work with and try to share as much as I can.				$\boxtimes$		
35.	I stand up for what I feel is right, regardless of it being right or wrong.				$\boxtimes$		
36.	I listen attentively to all of my subordinates' ramblings.				$\boxtimes$		

~END OF QUESTIONNAIRE~
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	Section 1	0	1	2	3	4	5
1.	I take action quickly because nothing is more important than accomplishing a goal or task.						$\boxtimes$
2.	I map out detailed plans and work my plan, knowing all essentials.						$\boxtimes$
3.	When seeing a complex task through completion, I ensure that every detail is accounted for.					$\boxtimes$	
4.	I enjoy analysing problems and thinking on the solutions.						
5.	I prefer to stay with the tried and true and minimize risk.						
6.	I am happy with my present status and situation.						
7.	I take the initiative in seizing the opportunity to lead and taking charge of the unit.					$\boxtimes$	
8.	I run disciplined meetings where everything goes by the book.					$\boxtimes$	
9.	I push my subordinates from behind and get things to go accordingly.						
10.	I tell my subordinates what to do and expect them to follow.					$\boxtimes$	
11.	I am not able to let go and empower my subordinate to entirely run a unit.			$\boxtimes$			
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13.	I pay attention to details having a finger on the pulse of day-to-day activities.						$\boxtimes$
14.	I am comfortable at my level of expertise and not particularly keen on delivering at levels of business.						
15.	I do not worry about jeopardizing relationships when it comes to correcting mistakes.						
16.	I believe that every subordinate is capable enough to fend for themselves.			$\boxtimes$			
17.	I feel intimidated when constantly subjected to other people's judgement.			$\boxtimes$			
18.	I am comfortable with taking orders than playing an active role in the company strategies.	$\boxtimes$					

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20.	I emphasize on how the work is completed by looking at future trends.					$\boxtimes$	
21.	I enjoy explaining intricacies and details of a complex project to my subordinates.				$\boxtimes$		
22.	I know what is happening in the administrative sector at my workplace.				$\boxtimes$		
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25.	I encourage my team to participate when it comes to decision making time, and I try to implement their ideas and suggestions.					$\boxtimes$	
26.	I encourage my subordinates to be creative about their jobs.						$\boxtimes$
27.	I try to be persuasive in getting my subordinates to carry out the tasks, i.e. when our ideas contradict.					$\boxtimes$	
28.	It is my second nature to be around whenever my subordinates need to consult.						$\boxtimes$
29.	I give my subordinates plenty of space to show initiative and I honour their boundaries.					$\boxtimes$	
30.	I set personal examples for others to follow.						$\boxtimes$
31.	I am never overly worried about where I am going to be and just concentrate on doing my present job competently.						$\boxtimes$
32.	I understand the diversity of all business conditions.						$\boxtimes$
33.	I am compassionate / responsive to others' needs and feelings.						
34.	I develop cooperative relationship among people I work with and try to share as much as I can.					$\boxtimes$	
35.	I stand up for what I feel is right, regardless of it being right or wrong.						
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19) Years in engineering:
20) Company:

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12.	I set personal examples of what I expect of others.						$\boxtimes$
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22.	I know what is happening in the administrative sector at my workplace.				$\boxtimes$		
23.	If there is any change, I embrace it and go with the flow.					$\boxtimes$	
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25.	I encourage my team to participate when it comes to decision making time, and I try to implement their ideas and suggestions.						$\boxtimes$
26.	I encourage my subordinates to be creative about their jobs.						$\boxtimes$
27.	I try to be persuasive in getting my subordinates to carry out the tasks, i.e. when our ideas contradict.					$\boxtimes$	
28.	It is my second nature to be around whenever my subordinates need to consult.						$\boxtimes$
29.	I give my subordinates plenty of space to show initiative and I honour their boundaries.						$\boxtimes$
30.	I set personal examples for others to follow.						$\boxtimes$
31.	I am never overly worried about where I am going to be and just concentrate on doing my present job competently.						$\boxtimes$
32.	I understand the diversity of all business conditions.						$\boxtimes$
33.	I am compassionate / responsive to others' needs and feelings.						$\boxtimes$
34.	I develop cooperative relationship among people I work with and try to share as much as I can.						$\boxtimes$
35.	I stand up for what I feel is right, regardless of it being right or wrong.						$\boxtimes$
36.	I listen attentively to all of my subordinates' ramblings.						$\boxtimes$

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# Part A: Profile Please click into the box provided $\boxtimes$ to mark or type into where relevant. 21) Gender: Male Male Female 22) Age: ☐ <30 years $\boxtimes$ 31 – 40 years $\square$ 41 – 50 years $\square > 50$ years 23) Qualification: Elementary school ☐ High school Certificate / Diploma Bachelor's Degree Master's Degree Doctorate / PhD ☐ Others (*please specify*) 24) Years in engineering: <5 years</p> $\boxtimes$ 6 – 10 years $\square$ 11 – 20 years $\square$ 21 – 30 years 31-40 years $\square > 40$ years (Please state current position held) 7 25) Company: □ Local Global

In the following, please indicate the number on the rating scale that best applies to each statement with  $\boxtimes$ . In selecting each response, please be as truthful as possible.

Almost never	Once in a while	Sometimes	Fairly often	Fairly often Frequently	
0	1	2	3	4	5

	Section 1	0	1	2	3	4	5
1.	I take action quickly because nothing is more important than accomplishing a goal or task.				$\boxtimes$		
2.	I map out detailed plans and work my plan, knowing all essentials.					$\boxtimes$	
3.	When seeing a complex task through completion, I ensure that every detail is accounted for.				$\boxtimes$		
4.	I enjoy analysing problems and thinking on the solutions.					$\boxtimes$	
5.	I prefer to stay with the tried and true and minimize risk.				$\boxtimes$		
6.	I am happy with my present status and situation.			$\boxtimes$			
7.	I take the initiative in seizing the opportunity to lead and taking charge of the unit.			$\boxtimes$			
8.	I run disciplined meetings where everything goes by the book.				$\boxtimes$		
9.	I push my subordinates from behind and get things to go accordingly.						
10.	I tell my subordinates what to do and expect them to follow.			$\boxtimes$			
11.	I am not able to let go and empower my subordinate to entirely run a unit.			$\boxtimes$			
12.	I set personal examples of what I expect of others.						$\boxtimes$
13.	I pay attention to details having a finger on the pulse of day-to-day activities.				$\boxtimes$		
14.	I am comfortable at my level of expertise and not particularly keen on delivering at levels of business.			$\boxtimes$			
15.	I do not worry about jeopardizing relationships when it comes to correcting mistakes.						
16.	I believe that every subordinate is capable enough to fend for themselves.				$\boxtimes$		
17.	I feel intimidated when constantly subjected to other people's judgement.				$\boxtimes$		
18.	I am comfortable with taking orders than playing an active role in the company strategies.						$\boxtimes$

In the following, please indicate the number on the rating scale that best applies to each statement with  $\boxtimes$ . In selecting each response, please be as truthful as possible.

Almost never	Once in a while	Sometimes	Fairly often	Frequently	Always
0	1	2	3	4	5

	Section 2	0	1	2	3	4	5
19.	I am curious to know everything about each task and do not mind if I have to stretch the deadline.					$\boxtimes$	
20.	I emphasize on how the work is completed by looking at future trends.				$\boxtimes$		
21.	I enjoy explaining intricacies and details of a complex project to my subordinates.				$\boxtimes$		
22.	I know what is happening in the administrative sector at my workplace.						
23.	If there is any change, I embrace it and go with the flow.						
24.	If I get the change, I do not mind getting tasks outside my area of expertise.				$\boxtimes$		
25.	I encourage my team to participate when it comes to decision making time, and I try to implement their ideas and suggestions.						$\boxtimes$
26.	I encourage my subordinates to be creative about their jobs.					$\boxtimes$	
27.	I try to be persuasive in getting my subordinates to carry out the tasks, i.e. when our ideas contradict.					$\boxtimes$	
28.	It is my second nature to be around whenever my subordinates need to consult.				$\boxtimes$		
29.	I give my subordinates plenty of space to show initiative and I honour their boundaries.						$\boxtimes$
30.	I set personal examples for others to follow.					$\boxtimes$	
31.	I am never overly worried about where I am going to be and just concentrate on doing my present job competently.					$\boxtimes$	
32.	I understand the diversity of all business conditions.				$\boxtimes$		
33.	I am compassionate / responsive to others' needs and feelings.				$\boxtimes$		
34.	I develop cooperative relationship among people I work with and try to share as much as I can.				$\boxtimes$		
35.	I stand up for what I feel is right, regardless of it being right or wrong.					$\boxtimes$	
36.	I listen attentively to all of my subordinates' ramblings.				$\boxtimes$		

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n / h n ei
Part A: Profile
Please click into the box provided $\boxtimes$ to mark or type into where relevant.
26) Gender:
27) Age:
28) Qualification:  ☐ Elementary school ☐ High school ☐ Certificate / Diploma ☐ Bachelor's Degree ☐ Master's Degree ☐ Doctorate / PhD ☐ Others (please specify)
29) Years in engineering:
30) Company:  Local Global

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3.	When seeing a complex task through completion, I ensure that every detail is accounted for.						$\boxtimes$
4.	I enjoy analysing problems and thinking on the solutions.						$\boxtimes$
5.	I prefer to stay with the tried and true and minimize risk.						
6.	I am happy with my present status and situation.						
7.	I take the initiative in seizing the opportunity to lead and taking charge of the unit.						$\boxtimes$
8.	I run disciplined meetings where everything goes by the book.		$\boxtimes$				
9.	I push my subordinates from behind and get things to go accordingly.						
10.	I tell my subordinates what to do and expect them to follow.		$\boxtimes$				
11.	I am not able to let go and empower my subordinate to entirely run a unit.	$\boxtimes$					
12.	I set personal examples of what I expect of others.						
13.	I pay attention to details having a finger on the pulse of day-to-day activities.						
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15.	I do not worry about jeopardizing relationships when it comes to correcting mistakes.				$\boxtimes$		
16.	I believe that every subordinate is capable enough to fend for themselves.						$\boxtimes$
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22.	I know what is happening in the administrative sector at my workplace.						$\boxtimes$
23.	If there is any change, I embrace it and go with the flow.						$\boxtimes$
24.	If I get the change, I do not mind getting tasks outside my area of expertise.						$\boxtimes$
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26.	I encourage my subordinates to be creative about their jobs.						$\boxtimes$
27.	I try to be persuasive in getting my subordinates to carry out the tasks, i.e. when our ideas contradict.					$\boxtimes$	
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34.	I develop cooperative relationship among people I work with and try to share as much as I can.						$\boxtimes$
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Please click into the box provided \( \sum to mark or type into \) where relevant.
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31.	I am never overly worried about where I am going to be and just concentrate on doing my present job competently.			$\boxtimes$			
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34.	I develop cooperative relationship among people I work with and try to share as much as I can.						
35.	I stand up for what I feel is right, regardless of it being right or wrong.			$\boxtimes$			
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	Section 1	0	1	2	3	4	5
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	Section 2	0	1	2	3	4	5
19.	I am curious to know everything about each task and do not mind if I have to stretch the deadline.					$\boxtimes$	
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24.	If I get the change, I do not mind getting tasks outside my area of expertise.					$\boxtimes$	
25.	I encourage my team to participate when it comes to decision making time, and I try to implement their ideas and suggestions.						
26.	I encourage my subordinates to be creative about their jobs.			$\boxtimes$			
27.	I try to be persuasive in getting my subordinates to carry out the tasks, i.e. when our ideas contradict.			$\boxtimes$			
28.	It is my second nature to be around whenever my subordinates need to consult.					$\boxtimes$	
29.	I give my subordinates plenty of space to show initiative and I honour their boundaries.				$\boxtimes$		
30.	I set personal examples for others to follow.				$\boxtimes$		
31.	I am never overly worried about where I am going to be and just concentrate on doing my present job competently.				$\boxtimes$		
32.	I understand the diversity of all business conditions.				$\boxtimes$		
33.	I am compassionate / responsive to others' needs and feelings.						
34.	I develop cooperative relationship among people I work with and try to share as much as I can.				$\boxtimes$		
35.	I stand up for what I feel is right, regardless of it being right or wrong.			$\boxtimes$			
36.	I listen attentively to all of my subordinates' ramblings.				$\boxtimes$		

~END OF QUESTIONNAIRE~
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#### Introduction

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Part A: Profile
Please click into the box provided 🛛 to mark or type into where relevant.
51) Gender:
52) Age:
53) Qualification:  ☐ Elementary school ☐ High school ☐ Certificate / Diploma ☐ Bachelor's Degree ☐ Master's Degree ☐ Doctorate / PhD ☐ Others (please specify)
54) Years in engineering:
( F
55) Company:    Local   Global

In the following, please indicate the number on the rating scale that best applies to each statement with  $\boxtimes$ . In selecting each response, please be as truthful as possible.

Almost never	Once in a while	Sometimes	Fairly often	Frequently	Always
0	1	2	3	4	5

	Section 1	0	1	2	3	4	5
1.	I take action quickly because nothing is more important than accomplishing a goal or task.						$\boxtimes$
2.	I map out detailed plans and work my plan, knowing all essentials.					$\boxtimes$	
3.	When seeing a complex task through completion, I ensure that every detail is accounted for.						
4.	I enjoy analysing problems and thinking on the solutions.						
5.	I prefer to stay with the tried and true and minimize risk.						
6.	I am happy with my present status and situation.					$\boxtimes$	
7.	I take the initiative in seizing the opportunity to lead and taking charge of the unit.						$\boxtimes$
8.	I run disciplined meetings where everything goes by the book.					$\boxtimes$	
9.	I push my subordinates from behind and get things to go accordingly.						
10.	I tell my subordinates what to do and expect them to follow.						$\boxtimes$
11.	I am not able to let go and empower my subordinate to entirely run a unit.				$\boxtimes$		
12.	I set personal examples of what I expect of others.						
13.	I pay attention to details having a finger on the pulse of day-to-day activities.						$\boxtimes$
14.	I am comfortable at my level of expertise and not particularly keen on delivering at levels of business.					$\boxtimes$	
15.	I do not worry about jeopardizing relationships when it comes to correcting mistakes.						$\boxtimes$
16.	I believe that every subordinate is capable enough to fend for themselves.					$\boxtimes$	
17.	I feel intimidated when constantly subjected to other people's judgement.					$\boxtimes$	
18.	I am comfortable with taking orders than playing an active role in the company strategies.			$\boxtimes$			

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Almost never	Once in a while	Sometimes	Fairly often	Frequently	Always
0	1	2	3	4	5

	Section 2	0	1	2	3	4	5
19.	I am curious to know everything about each task and do not mind if I have to stretch the deadline.				$\boxtimes$		
20.	I emphasize on how the work is completed by looking at future trends.					$\boxtimes$	
21.	I enjoy explaining intricacies and details of a complex project to my subordinates.					$\boxtimes$	
22.	I know what is happening in the administrative sector at my workplace.						$\boxtimes$
23.	If there is any change, I embrace it and go with the flow.				$\boxtimes$		
24.	If I get the change, I do not mind getting tasks outside my area of expertise.						
25.	I encourage my team to participate when it comes to decision making time, and I try to implement their ideas and suggestions.						$\boxtimes$
26.	I encourage my subordinates to be creative about their jobs.					$\boxtimes$	
27.	I try to be persuasive in getting my subordinates to carry out the tasks, i.e. when our ideas contradict.					$\boxtimes$	
28.	It is my second nature to be around whenever my subordinates need to consult.					$\boxtimes$	
29.	I give my subordinates plenty of space to show initiative and I honour their boundaries.					$\boxtimes$	
30.	I set personal examples for others to follow.					$\boxtimes$	
31.	I am never overly worried about where I am going to be and just concentrate on doing my present job competently.					$\boxtimes$	
32.	I understand the diversity of all business conditions.					$\boxtimes$	
33.	I am compassionate / responsive to others' needs and feelings.						
34.	I develop cooperative relationship among people I work with and try to share as much as I can.						$\boxtimes$
35.	I stand up for what I feel is right, regardless of it being right or wrong.					$\boxtimes$	
36.	I listen attentively to all of my subordinates' ramblings.					$\boxtimes$	

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Doub A. Dus Cla
Part A: Profile
Please click into the box provided $\boxtimes$ to mark or type into where relevant.
56) Gender:  ☐ Male ☐ Female
57) Age:
58) Qualification:  ☐ Elementary school ☐ High school ☐ Certificate / Diploma ☐ Bachelor's Degree ☐ Master's Degree ☐ Doctorate / PhD ☐ Others (please specify)
59) Years in engineering:
60) Company:    Local   Global

In the following, please indicate the number on the rating scale that best applies to each statement with  $\boxtimes$ . In selecting each response, please be as truthful as possible.

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	Section 1	0	1	2	3	4	5
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2.	I map out detailed plans and work my plan, knowing all essentials.						$\boxtimes$
3.	When seeing a complex task through completion, I ensure that every detail is accounted for.					$\boxtimes$	
4.	I enjoy analysing problems and thinking on the solutions.						
5.	I prefer to stay with the tried and true and minimize risk.						
6.	I am happy with my present status and situation.						
7.	I take the initiative in seizing the opportunity to lead and taking charge of the unit.					$\boxtimes$	
8.	I run disciplined meetings where everything goes by the book.					$\boxtimes$	
9.	I push my subordinates from behind and get things to go accordingly.						
10.	I tell my subordinates what to do and expect them to follow.						$\boxtimes$
11.	I am not able to let go and empower my subordinate to entirely run a unit.			$\boxtimes$			
12.	I set personal examples of what I expect of others.						
13.	I pay attention to details having a finger on the pulse of day-to-day activities.						$\boxtimes$
14.	I am comfortable at my level of expertise and not particularly keen on delivering at levels of business.					$\boxtimes$	
15.	I do not worry about jeopardizing relationships when it comes to correcting mistakes.					$\boxtimes$	
16.	I believe that every subordinate is capable enough to fend for themselves.			$\boxtimes$			
17.	I feel intimidated when constantly subjected to other people's judgement.		$\boxtimes$				
18.	I am comfortable with taking orders than playing an active role in the company strategies.						

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	Section 2	0	1	2	3	4	5
19.	I am curious to know everything about each task and do not mind if I have to stretch the deadline.						
20.	I emphasize on how the work is completed by looking at future trends.					$\boxtimes$	
21.	I enjoy explaining intricacies and details of a complex project to my subordinates.				$\boxtimes$		
22.	I know what is happening in the administrative sector at my workplace.						$\boxtimes$
23.	If there is any change, I embrace it and go with the flow.						
24.	If I get the change, I do not mind getting tasks outside my area of expertise.			$\boxtimes$			
25.	I encourage my team to participate when it comes to decision making time, and I try to implement their ideas and suggestions.						
26.	I encourage my subordinates to be creative about their jobs.						$\boxtimes$
27.	I try to be persuasive in getting my subordinates to carry out the tasks, i.e. when our ideas contradict.					$\boxtimes$	
28.	It is my second nature to be around whenever my subordinates need to consult.						$\boxtimes$
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31.	I am never overly worried about where I am going to be and just concentrate on doing my present job competently.			$\boxtimes$			
32.	I understand the diversity of all business conditions.						$\boxtimes$
33.	I am compassionate / responsive to others' needs and feelings.						
34.	I develop cooperative relationship among people I work with and try to share as much as I can.					$\boxtimes$	
35.	I stand up for what I feel is right, regardless of it being right or wrong.		$\boxtimes$				
36.	I listen attentively to all of my subordinates' ramblings.		$\boxtimes$				

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Part A: Profile
Please click into the box provided 🛛 to mark or type into where relevant.
61) Gender:
62) Age:
63) Qualification:  Elementary school High school Certificate / Diploma Bachelor's Degree Master's Degree Doctorate / PhD Others (please specify)
64) Years in engineering:
65) Company:    Local   Global

In the following, please indicate the number on the rating scale that best applies to each statement with  $\boxtimes$ . In selecting each response, please be as truthful as possible.

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		_		_	_		_
	Section 1	0	1	2	3	4	5
1.	I take action quickly because nothing is more important than accomplishing a goal or task.					$\boxtimes$	
2.	I map out detailed plans and work my plan, knowing all essentials.						$\boxtimes$
3.	When seeing a complex task through completion, I ensure that every detail is accounted for.					$\boxtimes$	
4.	I enjoy analysing problems and thinking on the solutions.					$\boxtimes$	
5.	I prefer to stay with the tried and true and minimize risk.						$\boxtimes$
6.	I am happy with my present status and situation.					$\boxtimes$	
7.	I take the initiative in seizing the opportunity to lead and taking charge of the unit.						$\boxtimes$
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9.	I push my subordinates from behind and get things to go accordingly.					$\boxtimes$	
10.	I tell my subordinates what to do and expect them to follow.						$\boxtimes$
11.	I am not able to let go and empower my subordinate to entirely run a unit.					$\boxtimes$	
12.	I set personal examples of what I expect of others.						$\boxtimes$
13.	I pay attention to details having a finger on the pulse of day-to-day activities.						$\boxtimes$
14.	I am comfortable at my level of expertise and not particularly keen on delivering at levels of business.					$\boxtimes$	
15.	I do not worry about jeopardizing relationships when it comes to correcting mistakes.					$\boxtimes$	
16.	I believe that every subordinate is capable enough to fend for themselves.					$\boxtimes$	
17.	I feel intimidated when constantly subjected to other people's judgement.		$\boxtimes$				
18.	I am comfortable with taking orders than playing an active role in the company strategies.		$\boxtimes$				

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Almost never	Once in a while	Sometimes	Fairly often	Frequently	Always
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	Section 2	0	1	2	3	4	5
19.	I am curious to know everything about each task and do not mind if I have to stretch the deadline.					$\boxtimes$	
20.	I emphasize on how the work is completed by looking at future trends.					$\boxtimes$	
21.	I enjoy explaining intricacies and details of a complex project to my subordinates.						$\boxtimes$
22.	I know what is happening in the administrative sector at my workplace.					$\boxtimes$	
23.	If there is any change, I embrace it and go with the flow.						
24.	If I get the change, I do not mind getting tasks outside my area of expertise.					$\boxtimes$	
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26.	I encourage my subordinates to be creative about their jobs.						$\boxtimes$
27.	I try to be persuasive in getting my subordinates to carry out the tasks, i.e. when our ideas contradict.					$\boxtimes$	
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29.	I give my subordinates plenty of space to show initiative and I honour their boundaries.						$\boxtimes$
30.	I set personal examples for others to follow.						$\boxtimes$
31.	I am never overly worried about where I am going to be and just concentrate on doing my present job competently.					$\boxtimes$	
32.	I understand the diversity of all business conditions.						$\boxtimes$
33.	I am compassionate / responsive to others' needs and feelings.						$\boxtimes$
34.	I develop cooperative relationship among people I work with and try to share as much as I can.						$\boxtimes$
35.	I stand up for what I feel is right, regardless of it being right or wrong.					$\boxtimes$	
36.	I listen attentively to all of my subordinates' ramblings.			$\boxtimes$			

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Part A: Profile
Please click into the box provided ⊠ to mark or type into where relevant.  66) Gender:  ☑ Male  ☐ Female
67) Age:
68) Qualification:  ☐ Elementary school ☐ High school ☐ Certificate / Diploma ☐ Bachelor's Degree ☐ Master's Degree ☐ Doctorate / PhD ☐ Others (please specify)
69) Years in engineering:
70) Company:

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Almost never	Once in a while	Sometimes	Fairly often	Frequently	Always
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	Section 1	0	1	2	3	4	5
1.	I take action quickly because nothing is more important than accomplishing a goal or task.						
2.	I map out detailed plans and work my plan, knowing all essentials.				$\boxtimes$		
3.	When seeing a complex task through completion, I ensure that every detail is accounted for.					$\boxtimes$	
4.	I enjoy analysing problems and thinking on the solutions.				$\boxtimes$		
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6.	I am happy with my present status and situation.						
7.	I take the initiative in seizing the opportunity to lead and taking charge of the unit.						$\boxtimes$
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9.	I push my subordinates from behind and get things to go accordingly.						
10.	I tell my subordinates what to do and expect them to follow.						
11.	I am not able to let go and empower my subordinate to entirely run a unit.				$\boxtimes$		
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15.	I do not worry about jeopardizing relationships when it comes to correcting mistakes.						
16.	I believe that every subordinate is capable enough to fend for themselves.					$\boxtimes$	
17.	I feel intimidated when constantly subjected to other people's judgement.		$\boxtimes$				
18.	I am comfortable with taking orders than playing an active role in the company strategies.						$\boxtimes$

In the following, please indicate the number on the rating scale that best applies to each statement with  $\boxtimes$ . In selecting each response, please be as truthful as possible.

Almost never	Once in a while	Sometimes	Fairly often	Frequently	Always
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	Section 2	0	1	2	3	4	5
19.	I am curious to know everything about each task and do not mind if I have to stretch the deadline.						
20.	I emphasize on how the work is completed by looking at future trends.					$\boxtimes$	
21.	I enjoy explaining intricacies and details of a complex project to my subordinates.			$\boxtimes$			
22.	I know what is happening in the administrative sector at my workplace.				$\boxtimes$		
23.	If there is any change, I embrace it and go with the flow.						$\boxtimes$
24.	If I get the change, I do not mind getting tasks outside my area of expertise.		$\boxtimes$				
25.	I encourage my team to participate when it comes to decision making time, and I try to implement their ideas and suggestions.						
26.	I encourage my subordinates to be creative about their jobs.				$\boxtimes$		
27.	I try to be persuasive in getting my subordinates to carry out the tasks, i.e. when our ideas contradict.						$\boxtimes$
28.	It is my second nature to be around whenever my subordinates need to consult.			$\boxtimes$			
29.	I give my subordinates plenty of space to show initiative and I honour their boundaries.			$\boxtimes$			
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31.	I am never overly worried about where I am going to be and just concentrate on doing my present job competently.						$\boxtimes$
32.	I understand the diversity of all business conditions.						$\boxtimes$
33.	I am compassionate / responsive to others' needs and feelings.		$\boxtimes$				
34.	I develop cooperative relationship among people I work with and try to share as much as I can.						$\boxtimes$
35.	I stand up for what I feel is right, regardless of it being right or wrong.				$\boxtimes$		
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# Part A: Profile Please click into the box provided $\boxtimes$ to mark or type into where relevant. 1) Gender: Male Male Female 2) Age: 31-40 years 1 - 50 years $\boxtimes$ > 50 years 3) Qualification: Elementary school ☐ High school Certificate / Diploma Bachelor's Degree Master's Degree Doctorate / PhD ☐ Others (*please specify*) 4) Years in engineering: <5 years</p> $\boxed{\phantom{0}}$ 6 – 10 years $\square$ 11 – 20 years $\square$ 21 – 30 years $\boxtimes$ 31 – 40 years $\square > 40$ years (Please state current position held) 5) Company: □ Local Global

In the following, please indicate the number on the rating scale that best applies to each statement with  $\boxtimes$ . In selecting each response, please be as truthful as possible.

Almost never	Once in a while	Sometimes	Fairly often	Frequently	Always
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	Section 1	0	1	2	3	4	5
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16.	I believe that every subordinate is capable enough to fend for themselves.			$\boxtimes$			
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27.	I try to be persuasive in getting my subordinates to carry out the tasks, i.e. when our ideas contradict.			$\boxtimes$			
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33.	I am compassionate / responsive to others' needs and feelings.					$\boxtimes$	
34.	I develop cooperative relationship among people I work with and try to share as much as I can.					$\boxtimes$	
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# Part A: Profile Please click into the box provided $\boxtimes$ to mark or type into where relevant. 6) Gender: Male Male Female Age: 31-40 years $\boxed{\phantom{0}}$ 41 – 50 years $\boxtimes$ > 50 years 8) Qualification: Elementary school ☐ High school Certificate / Diploma ☐ Bachelor's Degree Master's Degree Doctorate / PhD ☐ Others (*please specify*) 9) Years in engineering: <5 years</p> $\Box$ 6 – 10 years $\boxtimes$ 11 – 20 years $\square$ 21 – 30 years 31-40 years $\square > 40$ years (Please state current position held) CEO 10) Company: □ Local Global

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9.	I push my subordinates from behind and get things to go accordingly.						
10.	I tell my subordinates what to do and expect them to follow.		$\boxtimes$				
11.	I am not able to let go and empower my subordinate to entirely run a unit.	$\boxtimes$					
12.	I set personal examples of what I expect of others.						
13.	I pay attention to details having a finger on the pulse of day-to-day activities.					$\boxtimes$	
14.	I am comfortable at my level of expertise and not particularly keen on delivering at levels of business.						
15.	I do not worry about jeopardizing relationships when it comes to correcting mistakes.				$\boxtimes$		
16.	I believe that every subordinate is capable enough to fend for themselves.			$\boxtimes$			
17.	I feel intimidated when constantly subjected to other people's judgement.						
18.	I am comfortable with taking orders than playing an active role in the company strategies.	$\boxtimes$					

In the following, please indicate the number on the rating scale that best applies to each statement with  $\boxtimes$ . In selecting each response, please be as truthful as possible.

Almost never	Once in a while	Sometimes	Fairly often	Frequently	Always
0	1	2	3	4	5

	Section 2	0	1	2	3	4	5
19.	I am curious to know everything about each task and do not mind if I have to stretch the deadline.				$\boxtimes$		
20.	I emphasize on how the work is completed by looking at future trends.						$\boxtimes$
21.	I enjoy explaining intricacies and details of a complex project to my subordinates.					$\boxtimes$	
22.	I know what is happening in the administrative sector at my workplace.					$\boxtimes$	
23.	If there is any change, I embrace it and go with the flow.						$\boxtimes$
24.	If I get the change, I do not mind getting tasks outside my area of expertise.						$\boxtimes$
25.	I encourage my team to participate when it comes to decision making time, and I try to implement their ideas and suggestions.						$\boxtimes$
26.	I encourage my subordinates to be creative about their jobs.						$\boxtimes$
27.	I try to be persuasive in getting my subordinates to carry out the tasks, i.e. when our ideas contradict.						$\boxtimes$
28.	It is my second nature to be around whenever my subordinates need to consult.						$\boxtimes$
29.	I give my subordinates plenty of space to show initiative and I honour their boundaries.					$\boxtimes$	
30.	I set personal examples for others to follow.						$\boxtimes$
31.	I am never overly worried about where I am going to be and just concentrate on doing my present job competently.					$\boxtimes$	
32.	I understand the diversity of all business conditions.						$\boxtimes$
33.	I am compassionate / responsive to others' needs and feelings.						
34.	I develop cooperative relationship among people I work with and try to share as much as I can.						$\boxtimes$
35.	I stand up for what I feel is right, regardless of it being right or wrong.				$\boxtimes$		
36.	I listen attentively to all of my subordinates' ramblings.					$\boxtimes$	

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Part A: Profile
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11) Gender:  Male Female
12) Age:
13) Qualification:  Elementary school High school Certificate / Diploma Bachelor's Degree Master's Degree Doctorate / PhD Others (please specify)
14) Years in engineering:
15) Company:    Local   Global

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	Section 1	0	1	2	3	4	5
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3.	When seeing a complex task through completion, I ensure that every detail is accounted for.				$\boxtimes$		
4.	I enjoy analysing problems and thinking on the solutions.						
5.	I prefer to stay with the tried and true and minimize risk.						
6.	I am happy with my present status and situation.						
7.	I take the initiative in seizing the opportunity to lead and taking charge of the unit.			$\boxtimes$			
8.	I run disciplined meetings where everything goes by the book.						
9.	I push my subordinates from behind and get things to go accordingly.						
10.	I tell my subordinates what to do and expect them to follow.		$\boxtimes$				
11.	I am not able to let go and empower my subordinate to entirely run a unit.		$\boxtimes$				
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24.	If I get the change, I do not mind getting tasks outside my area of expertise.					$\boxtimes$	
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27.	I try to be persuasive in getting my subordinates to carry out the tasks, i.e. when our ideas contradict.				$\boxtimes$		
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32.	I understand the diversity of all business conditions.					$\boxtimes$	
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34.	I develop cooperative relationship among people I work with and try to share as much as I can.					$\boxtimes$	
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# Part A: Profile Please click into the box provided $\boxtimes$ to mark or type into where relevant. 16) Gender: Male Male Female 17) Age: ☐ <30 years $\square$ 31 – 40 years $\square$ 41 – 50 years $\boxtimes$ > 50 years 18) Qualification: Elementary school ☐ High school Certificate / Diploma Bachelor's Degree Master's Degree Doctorate / PhD ☐ Others (*please specify*) 19) Years in engineering: <5 years</p> $\Box$ 6 – 10 years $\square$ 11 – 20 years $\boxtimes$ 21 – 30 years 31-40 years $\square > 40$ years (Please state current position held) Strategist 20) Company: ⊠ Local Global

In the following, please indicate the number on the rating scale that best applies to each statement with  $\boxtimes$ . In selecting each response, please be as truthful as possible.

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	Section 1	0	1	2	3	4	5
1.	I take action quickly because nothing is more important than accomplishing a goal or task.						
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4.	I enjoy analysing problems and thinking on the solutions.						
5.	I prefer to stay with the tried and true and minimize risk.						
6.	I am happy with my present status and situation.						
7.	I take the initiative in seizing the opportunity to lead and taking charge of the unit.					$\boxtimes$	
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24.	If I get the change, I do not mind getting tasks outside my area of expertise.						$\boxtimes$
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27.	I try to be persuasive in getting my subordinates to carry out the tasks, i.e. when our ideas contradict.				$\boxtimes$		
28.	It is my second nature to be around whenever my subordinates need to consult.					$\boxtimes$	
29.	I give my subordinates plenty of space to show initiative and I honour their boundaries.						$\boxtimes$
30.	I set personal examples for others to follow.					$\boxtimes$	
31.	I am never overly worried about where I am going to be and just concentrate on doing my present job competently.				$\boxtimes$		
32.	I understand the diversity of all business conditions.						$\boxtimes$
33.	I am compassionate / responsive to others' needs and feelings.						$\boxtimes$
34.	I develop cooperative relationship among people I work with and try to share as much as I can.					$\boxtimes$	
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22) Age:  ☐ <30 years ☐ 31 – 40 years ☐ 41 – 50 years ☐ > 50 years
23) Qualification:  Elementary school  High school  Certificate / Diploma  Bachelor's Degree  Master's Degree  Doctorate / PhD  Others (please specify)
24) Years in engineering:
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6.	I am happy with my present status and situation.		$\boxtimes$				
7.	I take the initiative in seizing the opportunity to lead and taking charge of the unit.			$\boxtimes$			
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16.	I believe that every subordinate is capable enough to fend for themselves.			$\boxtimes$			
17.	I feel intimidated when constantly subjected to other people's judgement.					$\boxtimes$	
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21.	I enjoy explaining intricacies and details of a complex project to my subordinates.				$\boxtimes$		
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23.	If there is any change, I embrace it and go with the flow.				$\boxtimes$		
24.	If I get the change, I do not mind getting tasks outside my area of expertise.				$\boxtimes$		
25.	I encourage my team to participate when it comes to decision making time, and I try to implement their ideas and suggestions.						
26.	I encourage my subordinates to be creative about their jobs.						$\boxtimes$
27.	I try to be persuasive in getting my subordinates to carry out the tasks, i.e. when our ideas contradict.					$\boxtimes$	
28.	It is my second nature to be around whenever my subordinates need to consult.					$\boxtimes$	
29.	I give my subordinates plenty of space to show initiative and I honour their boundaries.					$\boxtimes$	
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31.	I am never overly worried about where I am going to be and just concentrate on doing my present job competently.					$\boxtimes$	
32.	I understand the diversity of all business conditions.					$\boxtimes$	
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34.	I develop cooperative relationship among people I work with and try to share as much as I can.						
35.	I stand up for what I feel is right, regardless of it being right or wrong.				$\boxtimes$		
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Part A: Profile
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27) Age:
28) Qualification:  Elementary school High school Certificate / Diploma Bachelor's Degree Master's Degree Doctorate / PhD Others (please specify) Honours
29) Years in engineering:
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# THE UNIVERSITY OF SOUTHERN QUEENSLAND



## **FACULTY OF ENGINEERING & SURVEYING**

## BACHELOR OF ENGINEERING (CIVIL)

Research Topic:

# COMPARATIVE STUDY OF ENGINEERING LEADERSHIP OF SENIOR ENGINEERS IN MALAYSIA & AUSTRALIA WITHIN THE CONSTRUCTION INDUSTRY

I would like to seek your kind cooperation and assistance to participate in this academic research project which is part of the Bachelor of Engineering degree programme managed by the University of Southern Queensland, Australia.

This research is undertaken in partial fulfilment of the requirements for the bachelor's degree and is purely for academic purposes only. Respondents are rest assured that all replies will be treated with full confidentiality.

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Sincerely, PoLyn H'ng

BEng Civil (ID: 0050043783) Contact no.: +61 (04) 2329 0426

#### Introduction

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Part A: Profile									
Ple	Please click into the box provided $\boxtimes$ to mark or type into where relevant.								
1)	Gender:  ☑ Male ☐ Female								
2)	Age:								
3)	Qualification:  Elementary school  High school  Certificate / Diploma  Bachelor's Degree  Master's Degree  Doctorate / PhD  Others (please specify)								
4)	Years in engineering:	tate current position held)							
5)	Company:  ☑ Local ☐ Global								

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In the following, please indicate the number on the rating scale that best applies to each statement with  $\boxtimes$ . In selecting each response, please be as truthful as possible.

Almost never		Once in a while	Sometimes	Fairly often	Frequently			Always		
	0 1 2 3				4 5					
		Sec	tion 1		0	1	2	3	4	5
1.		quickly becauseing a goal or task.	nothing is more in	nportant than					×	
2.	I map out de	etailed plans and	work my plan, kno	owing all essentials.				$\boxtimes$		
3.		g a complex task is accounted for.	through completio	n, I ensure that				×		
4.	I enjoy anal	ysing problems a	nd thinking on the	solutions.					M	
5.	I prefer to st	tay with the tried	and true and minir	nize risk.				M		
6.	I am happy	with my present s	status and situation	l					$\boxtimes$	
7.	I take the in charge of th		the opportunity to	lead and taking					×	
8.	I run disciplined meetings where everything goes by the book.								×	
9.	I push my subordinates from behind and get things to go accordingly.							×		
10.	I tell my sub	ordinates what to	do and expect the	em to follow.				M		
11.	I am not able to let go and empower my subordinate to entirely run a unit.					×				
12.	I set personal examples of what I expect of others.								×	
13.	I pay attention to details having a finger on the pulse of day-to-day activities.							×		
14.	I am comfortable at my level of expertise and not particularly keen on delivering at levels of business.								×	
15.	I do not worry about jeopardizing relationships when it comes to correcting mistakes.							×		
16.	I believe that every subordinate is capable enough to fend for themselves.					×				
17.	I feel intimidated when constantly subjected to other people's judgement.					×				
10	I am comfortable with taking orders than playing an active role in									

the company strategies.

In the following, please indicate the number on the rating scale that best applies to each statement with  $\boxtimes$ . In selecting each response, please be as truthful as possible.

Aln	nost never	er Once in a Sometimes Fairly often Frequently		ly Always						
E CONTRACTOR OF THE PARTY OF TH	0	1	2	3	Apaconing.	4	an-cytosini	DANES OF STREET	5	CLIC CONTROL
		Sec	tion 2		0	1_1_	2	3	4	5
19.		to know everyth tretch the deadlin	ing about each tasl e.	k and do not mind		X				
20.	I emphasize trends.	on how the work	is completed by lo	ooking at future			X			
21.	I enjoy expla	aining intricacies ates.	mplex project to		X					
22.	I know what workplace.	is happening in t	he administrative	sector at my				$\boxtimes$		
23.	If there is an	y change, I embr	ace it and go with	the flow.					X	
24.	If I get the c expertise.	hange, I do not m	ind getting tasks o	outside my area of			X			
25.			cipate when it com lement their ideas					×		
26.	I encourage	my subordinates	to be creative abou	at their jobs.					X	
27.		ersuasive in gettin nen our ideas con	ng my subordinates tradict.	s to carry out the				×		
28.	It is my seconed to cons		round whenever m	y subordinates				×		
29.		bordinates plenty boundaries.	of space to show	initiative and I					X	
30.	I set persona	al examples for ot	hers to follow.						M	
31.			out where I am goi ent job competent			×				
32.	I understand	the diversity of a	all business conditi	ions.				×		
33.	I am compas	ssionate / respons	ive to others' need	ls and feelings.					×	
34.		operative relation as much as I can.	iship among peopl	e I work with and					×	
35.	I stand up fo wrong.	or what I feel is ri	ght, regardless of i	t being right or					×	
36	Llisten atten	tively to all of my	v subordinates' rar	nhlings						

~END OF QUESTIONNAIRE~
THANK YOU FOR YOUR VALUABLE TIME AND COOPERATION!

## THE UNIVERSITY OF SOUTHERN QUEENSLAND



## **FACULTY OF ENGINEERING & SURVEYING**

## **BACHELOR OF ENGINEERING (CIVIL)**

## Research Topic:

# COMPARATIVE STUDY OF ENGINEERING LEADERSHIP OF SENIOR ENGINEERS IN MALAYSIA & AUSTRALIA WITHIN THE CONSTRUCTION INDUSTRY

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<b>QUES</b>	TIO	NNA	IRE
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Part A: Profile
Please click into the box provided $\boxtimes$ to mark or type into where relevant.
1) Gender:  Male Female
2) Age:
3) Qualification:  ☐ Elementary school ☐ High school ☒ Certificate / Diploma ☐ Bachelor's Degree ☐ Master's Degree ☐ Doctorate / PhD ☐ Others (please specify)
4) Years in engineering:
PRINCIPAL CIVIL STRICTURAL GUBINGER
5) Company:  Local Global
SEE ALSO SUPPLEMENTARY QUESTIONS 37538.

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Alı	nost never while	never while Sometimes Fairly often Free		Frequently			Always			
	0 1	2	3	ez EUGERO	4	MELECULARY.	asa usus	5	ERSENATORS	
	Sec	tion 1		0	1	2	3	4	5	7
1.	I take action quickly because accomplishing a goal or task.			×						
2.	I map out detailed plans and v	vork my plan, kno	wing all essentials,			X				1
3.	When seeing a complex task t every detail is accounted for.	hrough completion	n, I ensure that		X					
4.	I enjoy analysing problems an	d thinking on the	solutions.				$\Box$		X	1
5.	I prefer to stay with the tried a	and true and minim	nize risk.				X			1
6.	I am happy with my present st	atus and situation.					X			1
7.	I take the initiative in seizing charge of the unit.	the opportunity to	lead and taking			×				
8.	I run disciplined meetings who	ere everything goe	s by the book.		×					1
9.	I push my subordinates from taccordingly.	pehind and get thin	gs to go			×				X
10.	I tell my subordinates what to	do and expect then	n to follow.			×				
11.	I am not able to let go and empa unit.	oower my subordin	nate to entirely run			×				
12.	I set personal examples of wha	at I expect of other	S.				×			
13.	I pay attention to details havin activities.	g a finger on the p	ulse of day-to-day				×			
14.	I am comfortable at my level on delivering at levels of busin	f expertise and no	t particularly keen				×			
15.	I do not worry about jeopardiz correcting mistakes.	ing relationships v	when it comes to			×				
16.	I believe that every subordinate themselves.	e is capable enoug	h to fend for		×					
17.	I feel intimidated when constant judgement.	ntly subjected to or	ther people's			×				
18.	I am comfortable with taking of the company strategies.	rders than playing	an active role in				×			>

P.L. H'ng

3

INDICATES THAT I AM NOT SURE I UNDERSTOOD

# Part B (Cont'd)

In the following, please indicate the number on the rating scale that best applies to each statement with  $\boxtimes$ . In selecting each response, please be as truthful as possible.

Aln	ost never Once in a Sometimes Fairly often	Fairly often Frequently		ly	Always			
	0 1 2 3	49. 20. 40.5	4	ALC: ALC: ALC: ALC: ALC: ALC: ALC: ALC:		5		
	Section 2	0	1	2	3	4	5	
19.	I am curious to know everything about each task and do not mind if I have to stretch the deadline.					X		
20.	I emphasize on how the work is completed by looking at future trends.			×				
21.	I enjoy explaining intricacies and details of a complex project to my subordinates.					K		
22.	I know what is happening in the administrative sector at my workplace.			X				
23.	If there is any change, I embrace it and go with the flow.			X				
24.	If I get the change, I do not mind getting tasks outside my area of expertise.					M		
25.	I encourage my team to participate when it comes to decision making time, and I try to implement their ideas and suggestions.				×		П	
26.	I encourage my subordinates to be creative about their jobs.					×		
27.	I try to be persuasive in getting my subordinates to carry out the tasks, i.e. when our ideas contradict.			図				*
28.	It is my second nature to be around whenever my subordinates need to consult.			×				
29.	I give my subordinates plenty of space to show initiative and I honour their boundaries.					×		
30.	I set personal examples for others to follow.			[-]	X			
31.	I am never overly worried about where I am going to be and just concentrate on doing my present job competently.				×			
32.	I understand the diversity of all business conditions.			×				X
33.	I am compassionate / responsive to others' needs and feelings.					M		
34.	I develop cooperative relationship among people I work with and try to share as much as I can.					123		
35.	I stand up for what I feel is right, regardless of it being right or wrong.		×					*
36.	I listen attentively to all of my subordinates' ramblings.			M				
	~END OF QUESTIONNAIRE~ THANK YOU FOR YOUR VALUABLE TIME AND	coo	PER.	ATIO	N!			
37	ARE YOU A RISK TAKER	İ				X		
38	Ale you a samble		X				4	



#### **FACULTY OF ENGINEERING & SURVEYING**

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Pa	rt A: Profile
Ple	ase click into the box provided $igtigtigthedown$ to mark or type into where relevant.
1)	Gender:  Male Female
2)	Age:
3)	Qualification:  Elementary school  High school  Certificate / Diploma  Bachelor's Degree  Master's Degree  Doctorate / PhD  Others (please specify)
4)	Years in engineering:    <5 years   6 - 10 years   11 - 20 years   21 - 30 years   31 - 40 years   > 40 years   (Please state current position held)
5)	Company:  Local Global

<b>n</b>	4	т
1 21		- 10

Aln	nost never	Once in a while	Sometimes	Fairly often	Frequently Always				s	
	0	1	2	3	4			5		
		Sect	ion 1		0	1	2	3	4	5
1.		quickly because a g a goal or task.	nothing is more im	portant than					U	
2.	I map out det	ailed plans and w	ork my plan, kno	wing all essentials.		Ø				
3.		a complex task to accounted for.	hrough completion	n, I ensure that			Ø			
4.	I enjoy analy	sing problems an	d thinking on the	solutions.					Image: second color in the later and the later	
5.	I prefer to sta	y with the tried a	nd true and minim	nize risk.						
6.	I am happy w	ith my present st	atus and situation.					D		
7.	I take the init		he opportunity to	lead and taking					U	
8.	I run discipli	ned meetings who	ere everything goe	s by the book.						
9.	I push my sul accordingly.	bordinates from b	ehind and get thin	igs to go						
10.	I tell my subc	ordinates what to	do and expect the	m to follow.			4			
11.	I am not able a unit.	to let go and em	power my subordi	nate to entirely run		Q				
12.	I set personal	examples of wha	at I expect of other	rs.				3		
13.	I pay attentio activities.	n to details havin	g a finger on the p	oulse of day-to-day						
14.		able at my level of at levels of busing		ot particularly keen				d		
15.	I do not worr correcting mi		ing relationships	when it comes to			d			
16.	I believe that themselves.	every subordinat	e is capable enoug	gh to fend for			u			
17.	I feel intimida judgement.	ated when consta	ntly subjected to c	ther people's						
18.	I am comforts the company		orders than playing	g an active role in			말			

# Part B (Cont'd)

In the following, please indicate the number on the rating scale that best applies to each statement with  $\boxtimes$ . In selecting each response, please be as truthful as possible.

Aln	nost never while	Sometimes	Fairly often	Fred	uentl	y	Always		
	0 1	2	3		4			5	
		Section 2		0	1	2	3	4	5
19.	I am curious to know ev if I have to stretch the de	erything about each task	c and do not mind			<u>-</u>			
20.	I emphasize on how the trends.	work is completed by Ic	ooking at future			Ø			
21.	I enjoy explaining intric my subordinates.	acies and details of a co	mplex project to		Ø				
22.	I know what is happenin workplace.	g in the administrative	sector at my					9	
23.	If there is any change, I	embrace it and go with	the flow.				<b>U</b>		
24.	If I get the change, I do expertise.	not mind getting tasks o	utside my area of			U)			
25.	I encourage my team to making time, and I try to							<b>9</b>	
26.	I encourage my subordir	nates to be creative abou	it their jobs.						
27.	I try to be persuasive in tasks, i.e. when our idea		to carry out the					D	
28.	It is my second nature to need to consult.	be around whenever m	y subordinates					d	
29.	I give my subordinates phonour their boundaries.		initiative and I						
30.	I set personal examples	for others to follow.					3		
31.	I am never overly worrie concentrate on doing my							回	
32.	I understand the diversit	y of all business conditi	ons.					ď	
33.	I am compassionate / res	sponsive to others' need	s and feelings.					4	
34.	I develop cooperative re try to share as much as I		e I work with and						U
35.	I stand up for what I fee wrong.	l is right, regardless of i	t being right or					9	
36.	I listen attentively to all	of my subordinates' ran	nblings.						

~END OF QUESTIONNAIRE~
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Pa	A: Profile	
Ple	e click into the box provided $igtigtigtigthedown$ to mark or type into where relevant.	
1)	Gender: ☑ Male ☑ Female	
2)	age:	
3)	Qualification:  Elementary school  High school  Certificate / Diploma  Bachelor's Degree  Master's Degree  Doctorate / PhD  Others (please specify)	
4)	Years in engineering:    <5 years	
5)	Company:  Local  Global	

P.L. H'ng

Pa	rt	B

Aln	nost never	Once in a while	Sometimes	Fairly often	Free	quent	tly	Always		
	0	1	2	3		4			5	. 11 194
		Sec	tion 1		0	. 1	2	3	4	5
1,		quickly because ng a goal or task.		mportant than				×		
2.	I map out detailed plans and work my plan, knowing all essentials.									×
3.		g a complex task to is accounted for.	through completi	on, I ensure that					Ø	
4.	I enjoy analy	ysing problems ar	nd thinking on the	e solutions.						X
5.	I prefer to st	ay with the tried a	and true and mini	mize risk.				×		
6.	I am happy v	with my present s	tatus and situatio	n.				Ø		
7.	I take the initiative in seizing the opportunity to lead and taking charge of the unit.								×	
8.	I run discipl	ined meetings wh	ere everything go	oes by the book.			Ø			
9.	I push my subordinates from behind and get things to go accordingly.						Ø			
10.	I tell my sub	ordinates what to	do and expect th	em to follow.					X	
11.	I am not able a unit.	e to let go and em	power my subord	linate to entirely run		×				
12.	I set persona	l examples of wh	at I expect of oth	crs.						×
13.	I pay attention activities.	on to details havir	ng a finger on the	pulse of day-to-day					X	
14.		table at my level of at levels of busi		not particularly keen			×			
15.	l do not wor correcting m		zing relationships	when it comes to				×		
16.	I believe that every subordinate is capable enough to fend for themselves.									
17.	I feel intimidated when constantly subjected to other people's judgement.							Ø		
18.	I am comforthe company		orders than playi	ng an active role in		×				

Part B (	Cont'd)		

Aln	nost never while Sometimes Fairly often	Frequently			Always		
1000	0 1 2 3		4			5	1
	Section 2	0	1	2	3	4	5
19.	I am curious to know everything about each task and do not mind if I have to stretch the deadline.		Ø				
20.	I emphasize on how the work is completed by looking at future trends.				×		
21.	I enjoy explaining intricacies and details of a complex project to my subordinates.					×	
22.	I know what is happening in the administrative sector at my workplace.			×			
23.	If there is any change, I embrace it and go with the flow.				×		
24.	If I get the change, I do not mind getting tasks outside my area of expertise.					×	
25.	I encourage my team to participate when it comes to decision making time, and I try to implement their ideas and suggestions.					×	
26.	I encourage my subordinates to be creative about their jobs.					×	
27.	I try to be persuasive in getting my subordinates to carry out the tasks, i.e. when our ideas contradict.					×	
28.	It is my second nature to be around whenever my subordinates need to consult.						Ø
29.	I give my subordinates plenty of space to show initiative and I honour their boundaries.						Ø
30.	I set personal examples for others to follow.					×	
31.	I am never overly worried about where I am going to be and just concentrate on doing my present job competently.				×		
32.	I understand the diversity of all business conditions.					×	
33.	I am compassionate / responsive to others' needs and feelings.						Ø
34.	I develop cooperative relationship among people I work with and try to share as much as I can.					×	
35.	I stand up for what I feel is right, regardless of it being right or wrong.				×		
36.	I listen attentively to all of my subordinates' ramblings.					×	

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QUESTIONNAIR	ŀ	4			
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Pa	Part A: Profile									
Ple	Please click into the box provided $\boxtimes$ to mark or type into where relevant.									
1)	Gender:  Male		NOTIONALI	-	Marel	a				
	Female			: 200	STROLLON	×				
2)	Age:									
3)	Qualification:  Elementary sch High school									
	Certificate / Di Bachelor's Degree Master's Degree Doctorate / Phl	gree mg	*							
	Others (please	specify)								
4)	Years in engineeri	ng:								
_	<5 years									
	☐ 6 – 10 years ☐ 11 – 20 years	3								
	<b>★</b> 21 – 30 years				17					
	31-40 years									
	$\square > 40$ years	(Please state cur	rent position held)							
		(1 100000 00000 0000	, e p ezimen newy							
5)	Company:  Local Global									

P.L. H'ng

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Almost never		while	Sometimes	Fairly often	Frequently		Always		S	
	0	1	2	3	EN TRIA	4	dinastro.	netzs/s	5	
		Sec	tion 1		0	1	2	3	4	5
1,		quickly because ng a goal or task.	nothing is more im	portant than					×	
2.	I map out de	I map out detailed plans and work my plan, knowing all essentials.						×		
3.		a complex task is accounted for.	through completion	ı, I ensure that						×
4.	I enjoy analysing problems and thinking on the solutions.						X			
5.	I prefer to sta	ay with the tried	and true and minim	nize risk.					X	
6.	I am happy v	vith my present s	status and situation.						X	
7.	I take the initiative in seizing the opportunity to lead and taking charge of the unit.								×	
8.	I run disciplined meetings where everything goes by the book.							X		
9.	I push my subordinates from behind and get things to go accordingly.							X		
10.	. I tell my subordinates what to do and expect them to follow.							X		
11.	I am not able to let go and empower my subordinate to entirely run a unit.							×		
12.	I set personal	examples of wh	nat I expect of other	·s.						×
13.	I pay attentio activities.	n to details havi	ng a finger on the p	ulse of day-to-day					×	
14.		able at my level at levels of bus	of expertise and no	t particularly keen		X				
15.	I do not worry about jeopardizing relationships when it comes to correcting mistakes.						×			
16.	I believe that every subordinate is capable enough to fend for themselves.						×			
17.	Judgement.						×			
18.	I am comfort the company	able with taking strategies.	orders than playing	g an active role in		×				

Part	B	Con	t'd
T CAL C		COII	L

Once in a

In the following, please indicate the number on the rating scale that best applies to each statement with  $\boxtimes$ . In selecting each response, please be as truthful as possible.

No pos	while 0 1 2 3 4								5	areas.
		Section 2			0	1	2	3	4	5
19.	I am curious to know ev if I have to stretch the de	erything about e	ach task a	nd do not mind				×		
20.	I emphasize on how the work is completed by looking at future trends.								X	
21.	I enjoy explaining intric my subordinates.	acies and details	of a comp	olex project to					×	
22.	I know what is happenin workplace.	ng in the adminis	strative sec	tor at my					X	
23.	If there is any change, I	embrace it and g	go with the	flow.			×			
24.	If I get the change, I do not mind getting tasks outside my area of expertise.						×			
25.	I encourage my team to participate when it comes to decision making time, and I try to implement their ideas and suggestions.						×			
26.	I encourage my subordin	nates to be creati	ive about t	heir jobs.				X		
27.	I try to be persuasive in tasks, i.e. when our idea		rdinates to	carry out the					×	
28.	It is my second nature to need to consult.	be around whe	never my s	subordinates				×		
29.	I give my subordinates phonour their boundaries		o show ini	tiative and I			×			
30.	I set personal examples	for others to foll	ow.						X	
31.	I am never overly worri concentrate on doing my			to be and just				×		
32.	I understand the diversit	ty of all business	condition	s.					×	
33.	I am compassionate / re	sponsive to othe	rs' needs a	and feelings.				X		
34.	I develop cooperative retry to share as much as I		g people I	work with and				×		
35.	I stand up for what I fee wrong.	l is right, regard	less of it b	eing right or					×	
36.	I listen attentively to all	of my subordina	ates' ramb	lings.					X	

~END OF QUESTIONNAIRE~
THANK YOU FOR YOUR VALUABLE TIME AND COOPERATION!



### FACULTY OF ENGINEERING & SURVEYING

### **BACHELOR OF ENGINEERING (CIVIL)**

### Research Topic:

# COMPARATIVE STUDY OF ENGINEERING LEADERSHIP OF SENIOR ENGINEERS IN MALAYSIA & AUSTRALIA WITHIN THE CONSTRUCTION INDUSTRY

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Sincerely, PoLyn H'ng

QU	ES	ΓI	10	NN	A	IR	E
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Pa	rt A: Profile			
Ple	ase click into the b	ox provided 🛭 to mark or type into	where relevant.	
1)	Gender:  ☑ Male ☐ Female			
2)	Age:  ☐ <30 years ☐ 31 - 40 years ☐ 41 - 50 years ☐ > 50 years			
3)	Qualification:  Elementary sc. High school Certificate / D Bachelor's De Master's Degr Doctorate / Ph Others (please	iploma gree ee D		
4)	Years in engineer.	ing: (Please state current position held)	PRINCIPAL STRUCT	WRAL ENGINEER
5)	Company:  Local Global			

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Aln	nost never Once in a while	Sometimes	Fairly often	Frequently		A	lway	s	
	0 1	2	3	4			5		
	Se	ection 1		0	1	2	3	4	5
1.	I take action quickly becaus accomplishing a goal or tasl		portant than					$\boxtimes$	
2.	I map out detailed plans and	l work my plan, kno	wing all essentials.					×	
3.	When seeing a complex tasl every detail is accounted for		n, I ensure that						×
4.	I enjoy analysing problems	and thinking on the	solutions.						X
5.	I prefer to stay with the tried	d and true and minim	nize risk.				$\boxtimes$		
6.	I am happy with my present	status and situation.						×	
7.	I take the initiative in seizin charge of the unit.	g the opportunity to	lead and taking				<b></b>	×	
8.	I run disciplined meetings w	here everything goe	s by the book.				$\boxtimes$		
9.	I push my subordinates fron accordingly.	n behind and get thin	igs to go				$\boxtimes$		
10.	I tell my subordinates what	to do and expect the	m to follow.					×	
11.	I am not able to let go and e a unit.	mpower my subordi	nate to entirely run						
12.	I set personal examples of w	hat I expect of other	rs.					×	
13.	I pay attention to details hav activities.	ring a finger on the p	oulse of day-to-day						×
14.	I am comfortable at my leve on delivering at levels of bu		ot particularly keen					×	
15.	I do not worry about jeopard correcting mistakes.	dizing relationships v	when it comes to				×		
16.	I believe that every subordir themselves.	nate is capable enoug	gh to fend for			×			
17.	I feel intimidated when consjudgement.	stantly subjected to c	other people's		×				
18.	I am comfortable with taking the company strategies.	g orders than playing	g an active role in					Ø	

P.L. H'ng

Part B	(Cont'd)
IMILD	Cont

Almost never

Once in a

while

In the following, please indicate the number on the rating scale that best applies to each statement with  $\boxtimes$ . In selecting each response, please be as truthful as possible.

Fairly often

Frequently

X

X

X

 $\boxtimes$ 

X

X

X

 $\mathbf{X}$ 

Always

**Sometimes** 

	0 1 2 3		4			5	
	Section 2	0	1	2	3	4	5
19.	I am curious to know everything about each task and do not mind if I have to stretch the deadline.				×		
20.	I emphasize on how the work is completed by looking at future trends.				×		
21.	I enjoy explaining intricacies and details of a complex project to my subordinates.					×	
22.	I know what is happening in the administrative sector at my workplace.			×			
23.	If there is any change, I embrace it and go with the flow.				×		
24.	If I get the change, I do not mind getting tasks outside my area of expertise.					×	
25.	I encourage my team to participate when it comes to decision making time, and I try to implement their ideas and suggestions.				X		
26.	I encourage my subordinates to be creative about their jobs.				X		
27.	I try to be persuasive in getting my subordinates to carry out the tasks, i.e. when our ideas contradict.				×		
28.	It is my second nature to be around whenever my subordinates need to consult.					X	

I give my subordinates plenty of space to show initiative and I

I am never overly worried about where I am going to be and just

I am compassionate / responsive to others' needs and feelings.

I stand up for what I feel is right, regardless of it being right or

I listen attentively to all of my subordinates' ramblings.

I develop cooperative relationship among people I work with and

~END OF QUESTIONNAIRE~ THANK YOU FOR YOUR VALUABLE TIME AND COOPERATION!

29.

30.

31.

32.

33.

34.

35.

36.

wrong.

honour their boundaries.

try to share as much as I can.

I set personal examples for others to follow.

concentrate on doing my present job competently.

I understand the diversity of all business conditions.



#### **FACULTY OF ENGINEERING & SURVEYING**

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Pa	rt A: Profile				Water State	
Ple	ase click into the box provide	d 🛭 to mark or	type into	where relevan	t.	
1)	Gender:					
	<ul><li>✓ Male</li><li>☐ Female</li></ul>					
2)	Age:					
3)	Qualification:					
3)	X Elementary school     W High school					
	☐ Certificate / Diploma ☐ Bachelor's Degree ☐ Master's Degree ☐ Doctorate / PhD ☐ Others (please specify)					
	curers (preuse speedy)					
4)	Years in engineering:					
		ate current posit	ion held)			
5)	Company:  Local Global					

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Aln	nost never	Once in a while	Sometimes	Fairly often	Frequently		A	lway	S		
15.500	0	1 2 3 4				4		5			
		Sec		0	1	2	3	4	5		
1.	I take action accomplishi	nportant than				×					
2.	I map out de	etailed plans and	work my plan, kno	wing all essentials.				×			
3.		g a complex task is accounted for.	through completio	n, I ensure that				×			
4.	I enjoy anal	ysing problems a	nd thinking on the	solutions.					×		
5.	I prefer to st	ay with the tried	and true and minir	nize risk.					X		
6.	I am happy	with my present s	status and situation				X				
7.	I take the in		the opportunity to	lead and taking				X			
8.	I run discipl	ined meetings wh	nere everything go	es by the book.			X				
9.	I push my su accordingly.		behind and get thi	ngs to go				K			
10.	I tell my sub	ordinates what to	o do and expect the	em to follow.			×				
11.	I am not abl	e to let go and en	npower my subord	inate to entirely run			B				
12.	I set persona	l examples of wh	nat I expect of other	ers.			X				
13.	I pay attention activities.	on to details havi	ng a finger on the	pulse of day-to-day				X			
14.		table at my level g at levels of bus		ot particularly keen			×				
15.	I do not wor	ry about jeopardi istakes.	izing relationships	when it comes to			×				
16.	I believe tha themselves.	t every subordina	ate is capable enou	gh to fend for			×				
17.	I feel intimid	lated when const	antly subjected to	other people's							

18.

judgement.

the company strategies.

I am comfortable with taking orders than playing an active role in

X

# Part B (Cont'd)

In the following, please indicate the number on the rating scale that best applies to each statement with  $\boxtimes$ . In selecting each response, please be as truthful as possible.

Almost never	Once in a while	Sometimes	Fairly often	Frequently	Always
0	1	2	3	4	5

o i	Section 2	0	1	2	3	4	5
19.	I am curious to know everything about each task and do not mind if I have to stretch the deadline.			×			
20.	I emphasize on how the work is completed by looking at future trends.				X		
21.	I enjoy explaining intricacies and details of a complex project to my subordinates.			×			
22.	I know what is happening in the administrative sector at my workplace.		×				
23.	If there is any change, I embrace it and go with the flow.				M		
24.	If I get the change, I do not mind getting tasks outside my area of expertise.				×		
25.	I encourage my team to participate when it comes to decision making time, and I try to implement their ideas and suggestions.				X		
26.	I encourage my subordinates to be creative about their jobs.			×			
27.	I try to be persuasive in getting my subordinates to carry out the tasks, i.e. when our ideas contradict.				X		
28.	It is my second nature to be around whenever my subordinates need to consult.				×		
29.	I give my subordinates plenty of space to show initiative and I honour their boundaries.			П	⅓		
30.	I set personal examples for others to follow.			X			
31.	I am never overly worried about where I am going to be and just concentrate on doing my present job competently.				×		
32.	I understand the diversity of all business conditions.			$\square$			
33.	I am compassionate / responsive to others' needs and feelings.				×		
34.	I develop cooperative relationship among people I work with and try to share as much as I can.					×	
35.	I stand up for what I feel is right, regardless of it being right or wrong.					×	
36.	I listen attentively to all of my subordinates' ramblings.						

~END OF QUESTIONNAIRE~
THANK YOU FOR YOUR VALUABLE TIME AND COOPERATION!

P.L. H'ng



# FACULTY OF ENGINEERING & SURVEYING

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Part A: Profile
Please click into the box provided $\boxtimes$ to mark or type into where relevant.
1) Gender:  ✓ Male  Female
2) Age:
3) Qualification:    Elementary school   High school   Certificate / Diploma   Bachelor's Degree   Master's Degree   Doctorate / PhD   Others (please specify)
4) Years in engineering:
ENGINEER (Please state current position held)
5) Company:  Local Global

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Aln	nost never	ver Once in a Sometimes Fairly often Frequently					A	lway	S	
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	T	Sec	tion 1		0	1	2	3	4	5
1.		quickly because ng a goal or task.	nothing is more im	portant than					V	
2.	I map out de	tailed plans and	work my plan, kno	wing all essentials.				W		
3.		g a complex task is accounted for.	through completion	ı, I ensure that					Ø	
4.	I enjoy analy	sing problems a	nd thinking on the	solutions.					W	
5.	I prefer to st	ay with the tried	and true and minim	nize risk.					12	
6.	I am happy v	with my present s	status and situation.							
7.	I take the ini		the opportunity to	lead and taking						
8.	I run discipli	ined meetings wh	ere everything goe	s by the book.					12	
9.	I push my su accordingly.	bordinates from	behind and get thin	gs to go						
10.	I tell my sub	ordinates what to	do and expect the	m to follow.			12			
11.	I am not able a unit.	e to let go and em	npower my subordi	nate to entirely run						
12.	I set persona	l examples of wh	nat I expect of other	·S.						
13.	I pay attention activities.	on to details havi	ng a finger on the p	oulse of day-to-day						
14.		table at my level g at levels of busi	of expertise and no	t particularly keen						
15.	I do not work correcting m		zing relationships v	when it comes to		V				
16.	I believe that themselves.	every subordina	te is capable enoug	th to fend for		W				
17.	I feel intimid judgement.	ated when const	antly subjected to o	ther people's			V			
18.	I am comfort the company		orders than playing	g an active role in					□⁄	

Part	BI	Con	ť	ď
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Almost never while			Sometimes Fairly often			quentl	y	Always		
Section.	0	1	2	3	11830-	4			5	
		Sect	ion 2		0	1	2	3	4	5
19.		to know everythi retch the deadlin		k and do not mind		V				
20.	I emphasize of trends.	on how the work	is completed by le	ooking at future				Ø		
21.	I enjoy expla my subordina		and details of a co	omplex project to						
22.	I know what workplace.	is happening in t	he administrative	sector at my					IJ∕	
23.	If there is any	y change, I embra	ace it and go with	the flow.				<b>□</b>		
24.	If I get the cheexpertise.	house lange, I do not m	ind getting tasks o	outside my area of					₩ (	
25.	I encourage r making time,	ny team to partic and I try to impl	ipate when it com ement their ideas	es to decision and suggestions.						
26.	I encourage r	ny subordinates t	o be creative abo	ut their jobs.						
27.		rsuasive in gettin en our ideas cont	g my subordinate. radict.	s to carry out the					IJ∕	
28.	It is my secon		ound whenever n	ıy subordinates					₩.	
29.	I give my sub honour their		of space to show	initiative and I						
30.	I set personal	examples for ot	ners to follow.						W	
31.			out where I am go ent job competent							
32.	I understand	the diversity of a	ll business condit	ions.					V	
33.	I am compass	sionate / responsi	ve to others' need	ds and feelings.					Q/	
34.		pperative relation s much as I can.	ship among peop	le I work with and						
35.	I stand up for wrong.	what I feel is rig	tht, regardless of	it being right or				Ø		
36	I listen attent	ively to all of my	subordinates' rai	mhlings						

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#### FACULTY OF ENGINEERING & SURVEYING

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2)	Age:
3)	Qualification:  Elementary school  High school  Certificate / Diploma  Bachelor's Degree  Master's Degree  Doctorate / PhD  Others (please specify)
4)	Years in engineering:     <5 years
5)	Company:  Local Global

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Aln	iost never	while				quent	lly	Always			
*****	0					4			5		
		Sec	tion 1		0	1	2	3	4	5	
1.		quickly because ng a goal or task.	nothing is more in	nportant than							
2.	I map out de	tailed plans and	work my plan, kno	wing all essentials.				V			
3.		g a complex task is accounted for.	through completio	n, I ensure that						<b>P</b>	
4.	I enjoy analy	ysing problems a	nd thinking on the	solutions.						□	
5.	I prefer to st	ay with the tried	and true and minir	nize risk.							
6.	I am happy v	with my present s	tatus and situation								
7.	I take the ini		the opportunity to	lead and taking							
8.	I run discipli	ined meetings wh	ere everything go	es by the book.					4		
9.	I push my subordinates from behind and get things to go accordingly.										
10.	I tell my sub	I tell my subordinates what to do and expect them to follow.									
11.	I am not able a unit.	e to let go and em	npower my subord	inate to entirely run			Ø				
12.	I set persona	l examples of wh	at I expect of other	ers.						7	
13.	I pay attention activities.	on to details havi	ng a finger on the	pulse of day-to-day							
14.		table at my level g at levels of busi		ot particularly keen							
15.	I do not work correcting m		zing relationships	when it comes to							
16.	I believe that themselves.	t every subordina	te is capable enou	gh to fend for							
17.	I feel intimic judgement.	lated when const	antly subjected to	other people's		Ø					
18.	I am comfort the company		orders than playin	g an active role in			Ø				

Part	B	(Cont'	ď

Almost never Once in a while			Sometimes	Sometimes Fairly often			ly	A		
	0	1	2	3		4			5	
		Se	ection 2		0	1	2	3	4	5
19.		to know everyt		sk and do not mind						
20.	I emphasize of trends.	on how the wor	k is completed by	looking at future						
21.	I enjoy expla my subordina		s and details of a c	omplex project to						
22.	I know what workplace.	is happening it	the administrative	e sector at my			<b>□</b>			
23.	If there is any	change, I emb	orace it and go with	the flow.					0	
24.	If I get the chexpertise.	ange, I do not	mind getting tasks	outside my area of					Z	
25.			icipate when it con plement their ideas					\(\alpha\)		
26.	I encourage r	ny subordinate	s to be creative abo	out their jobs.				V		
27.		suasive in gett en our ideas co	ing my subordinate	es to carry out the				d		
28.	It is my secon		around whenever i	ny subordinates						Ø
29.	I give my sub		ty of space to show	initiative and I						
30.	I set personal	examples for	others to follow.						Ø	
31.			bout where I am go						1	
32.	I understand	the diversity of	all business condi	tions.						
33.	I am compass	sionate / respor	sive to others' nee	ds and feelings.						
34.		perative relations much as I car		le I work with and						V
35.	I stand up for wrong.	what I feel is	right, regardless of	it being right or						
36.	I listen attent	ively to all of r	ny subordinates' ra	mblings.					Ø	

~END OF QUESTIONNAIRE~
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Pa	rt A: Profile
Ple	ase click into the box provided $igtigtigtigthedown$ to mark or type into $$
1)	Gender:  Male Female
2)	Age:
3)	Qualification:  Elementary school  High school  Certificate / Diploma  Bachelor's Degree  Master's Degree  Doctorate / PhD  Others (please specify)
4)	Years in engineering:
5)	Company:  Local  Global

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Once in a Sometimes while		Fairly often	Frequently	Always			
1	2	3	4	5			
	while 1	while 1 2	while 1 2 3	while 1 2 3 4			

	Section 1	0	1	2	3	4	5
1.	I take action quickly because nothing is more important than accomplishing a goal or task.						
2.	I map out detailed plans and work my plan, knowing all essentials.						×
3.	When seeing a complex task through completion, I ensure that every detail is accounted for.						Ø
4.	I enjoy analysing problems and thinking on the solutions.						Ø
5.	I prefer to stay with the tried and true and minimize risk.						Ø
6.	I am happy with my present status and situation.				Ø		
7.	I take the initiative in seizing the opportunity to lead and taking charge of the unit.						×
8.	I run disciplined meetings where everything goes by the book.					X	
9.	I push my subordinates from behind and get things to go accordingly.						×
10.	I tell my subordinates what to do and expect them to follow.						
11.	I am not able to let go and empower my subordinate to entirely run a unit.					Ø	
12.	I set personal examples of what I expect of others.						X
13.	I pay attention to details having a finger on the pulse of day-to-day activities.						$\boxtimes$
14.	I am comfortable at my level of expertise and not particularly keen on delivering at levels of business.	Ø.					
15.	I do not worry about jeopardizing relationships when it comes to correcting mistakes.			Ø			
16.	I believe that every subordinate is capable enough to fend for themselves.					Ø	
17.	I feel intimidated when constantly subjected to other people's judgement.			Ø			
18.	I am comfortable with taking orders than playing an active role in the company strategies.	凶					

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Alr	Imost never Once in a while		Sometimes	Sometimes Fairly often			Frequently			S
986.1139	0	1	2	3		4			5	
Section 2					0	1	2	3	4	5
19.	I am curious to know everything about each task and do not mind if I have to stretch the deadline.						Ø			
20.	I emphasize on how the work is completed by looking at future trends.									Ø
21.	I enjoy expla my subordin						×			
22.	I know what workplace.	is happening in th	ne administrative	sector at my				×		
23.	If there is an	y change, 1 embra	ice it and go with	the flow.						X
24.	If I get the clean expertise.	hange, I do not mi	ind getting tasks	outside my area of						×
25.		my team to partici , and I try to impl		nes to decision and suggestions.						囟
26.	I encourage	my subordinates t	o be creative abo	ut their jobs.						区
27.		rsuasive in getting en our ideas cont		es to carry out the						
28.	It is my seco need to cons	nd nature to be ar ult.	ound whenever r	ny subordinates					×	
29.	I give my su honour their	bordinates plenty boundaries.	of space to show	initiative and I						
30.	I set persona	l examples for oth	ners to follow.							
31.		verly worried abo on doing my prese		oing to be and just						风
32.	I understand	the diversity of a	ll business condi	tions.						凶
33.	I am compas	sionate / responsi	ve to others' nee	ds and feelings.						Ņ
34.		operative relations is much as I can.	ship among peop	le I work with and						[X]
35.	I stand up fo wrong.	r what I feel is rig	ht, regardless of	it being right or	风					
36.	I listen attent	tively to all of my	subordinates' ra	mblings.						如

~END OF QUESTIONNAIRE~ THANK YOU FOR YOUR VALUABLE TIME AND COOPERATION!