PERCEIVED LEADERSHIP PRACTICES AND ORGANIZATIONAL COMMITMENT OF CONSULTING ENGINEERS AT THEIR WORKING PLACE

By

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ABSTRAK

Objektif kajian ini adalah untuk meneliti isu-isu yang dihadapi oleh perunding jurutera. Isu-isu ini ialah (a) hubungan antara amalan kepimpinan dan komitmen organisasi perunding jurutera di tempat kerja, dan (b) perbezaan komitmen organisasi perunding jurutera berdasarkan jantina, umur dan tahun pengalaman bekerja. Kajian ini memanfaatkan (a) lima amalan kepimpinan oleh Kouzes dan Posner (1987) dan (b) komitmen organisasi oleh Mowday, Porter dan Steers (1979). Secara khususnya, kajian ini ditujukan kepada 387 responden yang bekerja dengan firma perundingan yang telah berdaftar di bawah Association of Consulting Engineers, Malaysia (ACEM). Teknik persampelan rawak telah digunakan dan kaji selidik urus sendiri dilakukan untuk kajian ini yang terdiri daripada bahagian maklumat peribadi, bahagian indeks amalan kepimpinan (LPI), dan bahagian komitmen organisasi (OCQ). Kaedah penyelidikan kuantitatif telah digunakan untuk menganalisis data. Pertama, Analisis Spearman-rho correlation digunakan untuk menentukan hubungan antara amalan kepimpinan perunding jurutera dengan komitmen sesebuah organisasi di tempat kerja mereka. Kedua, Ujian Kruskal-Wallis pula dilakukan untuk mengkaji perbezaan antara komitmen organisasi perunding jurutera berdasarkan umur dan tempoh pengalaman bekerja. Ketiga, Ujian Wilcoxon Signed Rank digunakan untuk mengkaji perbezaan antara amalan kepimpinan dan komitmen organisasi perunding jurutera berdasarkan jantina. Hasil kajian mendapati bahawa lima amalan kepimpinan mempunyai hubungan yang signifikan antara amalan kepimpinan dan komitmen organisasi perunding jurutera di tempat kerja mereka. Selain itu, hasil kajian juga menunjukkan bahawa terdapat perbezaan yang signifikan antara komitmen organisasi perunding jurutera berdasarkan jantina, umur dan tahun pengalaman bekerja. Hasil kajian yang dijalankan juga menyumbang kepada pengetahuan yang menyeluruh bahawa komitmen organisasi perunding jurutera adalah berkaitan secara positif kepada kemahiran kepimpinan kejurulatihan pihak atasan, memimpin dan membimbing perunding jurutera untuk mencapai matlamat yang sama.

Kata kunci: perunding kejuruteraan; amalan kepimpinan; komitmen organisasi

ABSTRACT

The objectives of this study are to examine the issues confronting consulting engineers. The issues are: (a) the relationship between perceived leadership practices and consulting engineer's organizational commitment in their working place and, (b) the differences of consulting engineers' organizational commitment based on gender, age and years of working experience. This study leverages on (a) Kouzes and Posner's five perceived leadership practices (1987), and (b) Mowday, Porter and Steers' organizational commitment (1979). This study was specifically addressed to 387 respondents who worked with consulting firms registered under the Association of Consulting Engineers, Malaysia (ACEM). The random sampling technique was used and a self-administered survey was performed for this research which included a set of questionnaires consisting of sections on personal information, leadership practices index (LPI) and organizational commitment (OCQ). The quantitative research method was used for data analysis. Firstly, it involved using the Spearman-rho correlation analysis to examine the relationship between the consulting engineers' perceived leadership practices and organizational commitment at their work place. Secondly, the Kruskal Wallis test was used to investigate the differences between the consulting engineers' organizational commitment based on age and years of experience. Thirdly, the Wilcoxon Signed Rank test was used to investigate the differences between the consulting engineers' organizational commitment based on gender. The findings revealed that the five perceived leadership practices have significant relationships between perceived leadership practices and the consulting engineers' organizational commitment at their work place. Another finding revealed that there is a significant difference between the consulting engineers' organizational commitment based on gender, and age, and years of working experience. The findings contribute to the knowledge that consulting engineers' organizational commitment is positively related to the engineering superior's leadership skills of coaching, leading and guiding consulting engineers to achieve the same goal.

Keywords: consulting engineering; perceived leadership practices; organizational commitment

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CHAPTER ONE

INTRODUCTION

1.1 Introduction

Engineering is the discipline, art and profession of acquiring and applying technical, scientific and mathematical knowledge to design and implement materials, structures, machines, devices, systems, and processes that safely realize a desired objective or inventions. It is the creation, maintenance, and development of things that have not existed in the natural world and that satisfy some human desire or need. It is also the creation of human ingenuity that first fulfilled a fantasy of a human need and then went on to change the very society that created it (Vest, 2013).

In recent years, construction engineering industry is growing rapidly in Malaysia. Malaysia's Vision 2020 is stimulating and the demand for engineers who are well prepared to provide innovative solutions in important areas becomes a new challenge. The engineering consulting industry has to make tremendous changes in its strategic direction (Nor, Rajab, & Ismail, 2010). The changes include moving from a worker-intensive industrial society into an automated information society that emphasizes on the importance of technology advantages and knowledge capital by an organization (Muthuveloo & Raduan, 2007).

Unlike other industries, this group of personnel – Engineers, enjoys a secured job and many perceived them as unable to adapt into the new working culture. This leads them to feel dissatisfied with their current organization (Yousaf, Riaz, Ahmad,

Ehsan, & Mirza, 2011). This has led the engineers to face great challenges in their working environment and also their commitment level in an organization which has led them to move to new organization.

In view of this movement, the demand on current employees and new recruits of the workforce in the organization becomes important. There is a need to determine the correct work attributes that will improve engineer's organizational commitment level via perceived leadership practices and, along with the ability to show to the consulting engineers the successful way, will become clear.

1.2 Background of the Study

After completing four years of engineering degree program, a fresh graduate must register with the Board of Engineers, Malaysia (BEM) to qualify themselves as an engineer. After which they can carry out the engineering professional practices (Board of Engineer Malaysia, 2012). The BEM is a statutory body governed by Malaysia Government under the registration of Engineers Act 1987. BEM's main objective is to observe and facilitate the professionalism of every engineer in order to ensure the safety and public awareness for the public. The engineers conduct daily activities with respect to the professional practices as stated in the Board of Engineer Malaysia's guide book. Technically, engineers are trained to be an ethical person with enough technical, and sound practical knowledge with regards to the awareness in safety features.

In year 2012, the Board of Engineers Malaysia (BEM) has approximately 70839 registered engineers covering from the field of mechanical and electrical, civil and structural, geotechnical, chemical, transport, irrigation and Information Technology (Board of Engineer Malaysia, 2012). 70% of the overall registered engineers are involved in mechanical and electrical, civil and structural and geotechnical work (The Treasury of Malaysia, 2012).

Another body that governs under BEM supervision is called The Association of Consulting Engineer Malaysia (ACEM). Its primary objective is to ensure that all consulting engineers are qualified to conduct engineering practices. Besides, they also give advice on engineering matters in a strictly trustworthy capacity to their clients. This body is considered as the representative to deal with science and engineering practice which having equal interest to all engineers. The aims and objectives of ACEM, among others, are as follows:

i. To promote and consult those engineers whose work is purely in consultation, follow the engineering practices.
ii. To ensure all undertaking and advice on engineering matters is carried out by qualified engineers in their respective fields.
iii. To ensure all undertaking and advice is based on engineering practices.
iv. ACEM act as a medium for public and private sectors.
v. ACEM ensures all the practitioners follow the rules and practices as set in the regulation is complied by all the consulting engineers in relation to his clients and of setting up a standard of accepted professional practice.

In such, providing good practices in engineering industry is a must, in order to ensure the safety of life and property.

Engineering is greatly linked with society and human behavior. Engineering consulting industry is a challenging industry. It requires many job related stressors that are part of the daily life of managers and professionals engaged in this industry (Ramanathan, Narayanan & Idrus, 2012). Today, engineering consulting firms are required to compete in a highly competitive market but with low payout on staffing cost. The consulting firms are required to complete a project within a tight deadline and with a tight budget. In addition, the consulting firms are required to work under a constrained time frame to mitigate penalties and Liquidate and Ascertained Damages (LADs) on project handling over the period.

The condition gets worse by the changes of conventional contract to turnkey contract. In conventional contract, a consulting firm is appointed directly by the developer / owner and contractors are selected by tendering process. Consulting firms have total authority to make decision and give instruction to the contractors. They can also select the contractors on behalf of the developer / owner. However, currently the trend has moved from conventional contract to turnkey contract. Here, the developer will award the whole project to the contractor and the contractor is responsible to complete the project from its initial design stage to end stage, that is, Build & Commissioning. This system allows the developer to transfer the project risk and reduce overlapping of design phase and construction phase of the project. In this case, the engineering consultant will be engaged by the contractor and the

contractor has directed instructions to the consultant (Ramanathan, Narayanan, & Idrus, 2012).

The competition in construction industry has forced engineering consulting firms to be efficient and effective (Ramanathan, Narayanan, & Idrus, 2012). Visser, Naude, and Schepers (2004) identified two engineering challenges. First, organization requires management skills and abilities that are different from the traditional management functions of those days. Secondly, organizations need to look at various trainings that will assist to move the engineers into management positions.

Through developing technical employees, organizations can increase competitive advantage. Engineers in consulting firm are considered as skillful employees with strong preference for independence. Moreover, they hold a large portion of the organization's intellectual capital. Skillful employees are more committed to their profession rather than to the organization. Committed employees take pride in organizational membership, believe in the goals and values of the organization, and therefore, demonstrate higher levels of performance and productivity.

Meyer and Herscovitch (2001); Periasamy (2002); Landry and Vandenberghe (2012) identified that skilled and committed employees have different commitment level in the organization. The goal setting by the organization via developing vision and mission helps to improve the confidence level of an engineer in an organization (Gordon, 2011). The development of a high performance

and calibration workforce to manage resources intelligently becomes the milestone of an organization. This will ensure the employees capture the rapid changes with respect to communication and technology advancement, globalization and organizational change.

Although the engineer's commitment would influence the whole function in an organization, this would also depend on the leadership practices of the organization on leading a team to achieve organizational goals. Today's organization has to face rapid changes in order to cope with the current environment and job related stressors. Lingard (2002) in his study found that engineering consulting firms worked long hours and owe a large amount of unpaid overtime to their employees. Over a 12-month period, the engineers in consulting firms reported that the amount of work they performed increased by 63 percent, and the amount of stress had also increased by 52 percent. The survey concluded that more than one quarter of the respondents experienced health related issues as a result of their work.

Meanwhile, the rapid changes in organization and technology have also brought about a huge transformation via different model of organizational re-structuring. Especially when dealing with the new generation of workforce. Y-generations engineers tend to be information resourceful as they can gather information 24 hours from everywhere (Tolbize, 2008). Perhaps, this group of workforce has strong perceiving power on who they are working with. They are multi-taskers, and are the most highly educated generation. They have been characterized as demanding and also as the most confident generation (Tolbize, 2008). If the organization is unable to prove who they are and what they can achieve

in future, they would then not attach themselves to one single organization but will seek for professional as well as monetary growth. The positive relation these individual's have for their involvement in an organization will tend to adhere to the norms and conform to the values and expectations of those to whom they are committed (Steer, 1977). This is due to the characteristics of different generations (Baby boomers, Xers-generation and Y-generation) is varied (Tolbize, 2008). The various generation of engineers in an organization would also differentiate their commitment to an organization based on their gender, age and working experience.

In order to mitigate the possible negative impact on employee's movement, new management methods have been developed to be more interactive and purposeful in order to achieve organization goals (Gordon, 2011). The new generation's consulting leaders appear to be able to face with overwhelming complexities and uncertainties in the company's success. The dynamic genius, who is guiding less far-sighted employees, will sometimes perform effectively among the colleagues but when at the outset, they are unable to perform well. Thus, these new groups of leaders appear to be doubtful about their leadership capabilities in recent years especially in the rapid exaggerated market valuations of the dot-com era (Craig, Thomas, Hou, & Mathur, 2011).

This has brought concern to the perceived leadership practices of consulting engineers on their organization's leadership. Their concern is whether the consulting firm can provide clear vision and guidance to the engineers. Vandeveer (2009) found that many engineering graduates within engineering departments do not gain much

knowledge in leadership and management skills that are deem necessary for them to succeed as leaders in engineering careers.

As Malaysia is working towards Vision 2020 to become a high income country, the development of a high caliber professional is one of the main targets that will help to move towards the vision. The development of leadership practices is therefore a key requirement for an organization's continued growth (The Treasury Malaysia, 2012). Engineers will always judge their organization on how they could get encouragement that will help them to perform better at their work.

1.3 Problem Statements

This research is aimed to recognize the perception of consulting engineers towards their organization. Also, for the organization to be aware of their leadership skills as this will have an impact on engineer's commitment level in the organization. Nowadays, engineers do face different commitment levels in an organization (Kishimoto & McGuire, 2010). This has created some doubts about the loyalty of engineer's work in an organization and what are the factors that influence the engineers to be committed in an organization. What does commitment means to an engineer? Thus, this research allows the researcher to explain the impact on engineer's commitment by using leadership practices as the main elements in building employee commitment. The researcher also strive to prove that different gender, age and year of working experiences are linked to employee commitment and that leadership practices can play an important role in building employee commitment (Tolbize, 2008).

Indeed, past research (Ministry of Treasury, Malaysia, 2012) shows that monetary reward still remains as a main factor for the high intent to leave an organization in the engineering industry. The high movement in organization has reflected the commitment level of the engineers in engineering consulting firms.

This created a new era of war for talented, potential engineers, the cost of replacing a new staff is still a main concern for most of the engineering consulting firms. Employers thrive to lead the organization with many different approaches to motivate the employees to gain their trust, but yet, the successful rate is minimal. Many incidents happen whereby the organization does not know how to model an effective way to have some beliefs to stand up with in the engineering firms (Weingardt, 2003; Prieto, 2009).

In addition, the increasing number of engineers who begins to search for new opportunities in the market is becoming a concern in the engineering industry. Especially in engineering consulting firms, the employee's movement rate is higher compared to construction industry (ACEM, 2011). Referring to the data collected from the Ministry of Finance, Malaysia for year 2012, it is found that local unemployed manpower in engineering industry has increased significantly from 2007 to 2011 (Ministry of Treasury, Malaysia, 2012). Figure 1.1 shows the registered job seekers in engineering industry from year 2007 to year 2010.

This result included the existing engineers who have low commitment in the same organization. The job seeking rates dramatically increase from 2009 to 2010

(Figure 1.1). According to Salleh, Nair and Harun (2012), job seekers are primarily determined by satisfaction, attraction and expected utility of the present and alternative jobs and roles. This theory was also studied by Zeynep and Huckman (2008) on the effect of turnover on performance and commitment level in an organization.

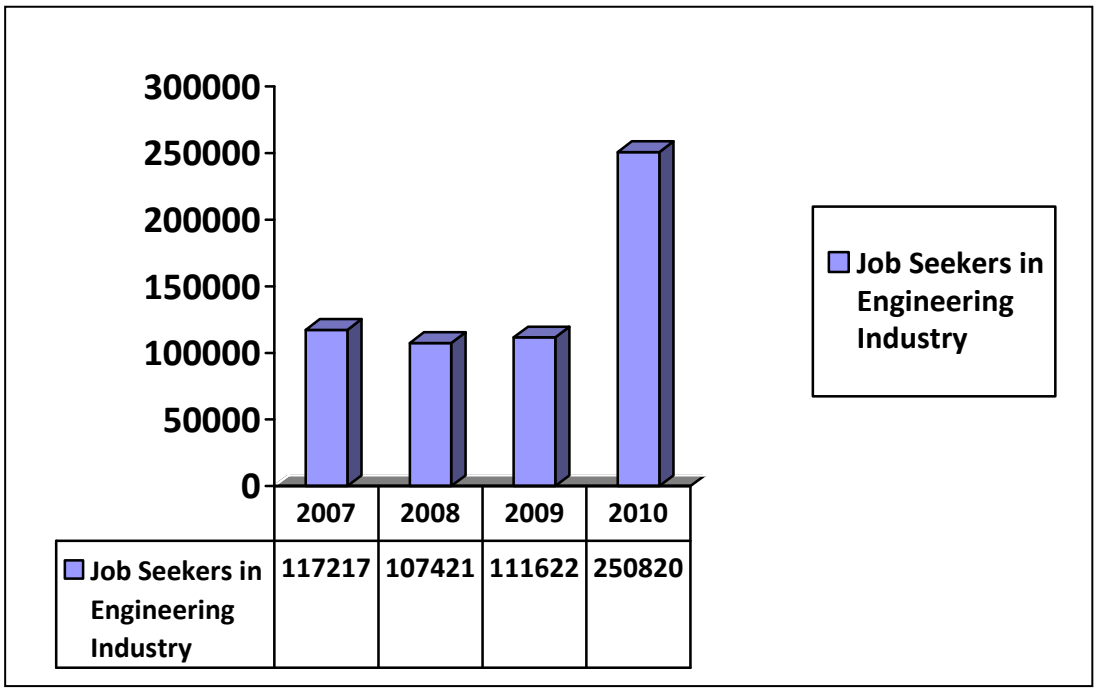

Figure 1.1
Registered job seekers in Malaysia
Source: Ministry of Treasury Malaysia, 2012

Better opportunities for career growth and development are also becoming an attractive element that affects an engineer's commitment level in an organization. (Weng & McElroy, 2012). The engineer's decision on whether to move or not is strongly influenced by the opportunities given by the organization itself. Furthermore, it also depends on how the organization could advance the employee's skills and also on the benefits given. According to a survey conducted in 2012 by the

Ministry of Human Resources, Malaysia, 23% of registered job seekers are looking for vacancies in the engineering industry- Figure 1.2 (MOHR, 2012).

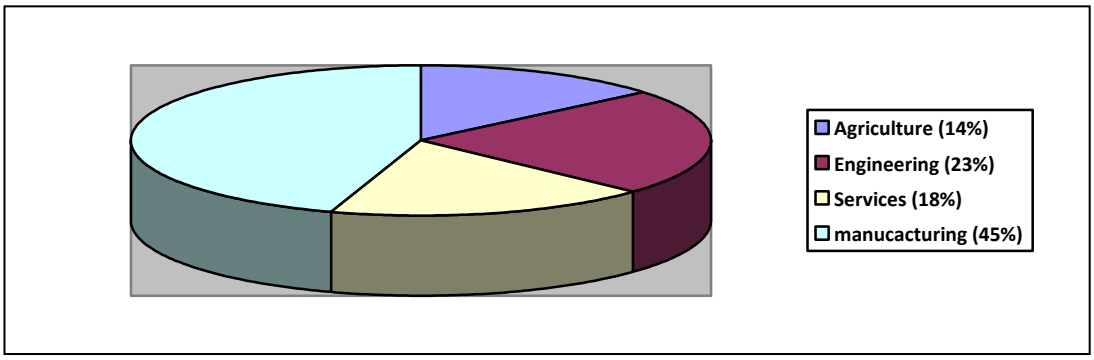

Figure 1.2
Registered job seekers in Malaysia based on vacancies by industry
Source: Ministry of Human Resources Malaysia, 2012

According to Brassi and McMurrer (2007), an important asset for an organization to grow is their employees. Organization's today are unable to perform at peak level unless every employee is fully committed to its objectives and strategic goals. As in the business world today, if you are able to engage competent employees into the organization, you will be able to ensure of exceptional financial returns. In return, employees would observe the capability of an organization on how they inspire a shared vision with the employees (Hoffman, Bynum, Piccolo, & Sutton, 2011). Investment on the right people into the right position would optimize the work ethics at optimal levels and will lead a business to victory. Thus, many scholars have carried out studies in different industries and have different criteria to understand engineers' job satisfaction, individual personal characteristic, internal alternative work roles with more than 1,000 studies addressing the subject (Trevor, 2001). Employee's low commitment in an organization has brought to the attention of many managers as well as scholars (Zeyney & Huckman, 2008). According to Sanjeevkumar (2012), he identifies that low commitment level has led to employee's

dissatisfaction which in turn has lead to the intention to change workplace. However, Dravid and Duncan (2010) in his study focused on engineering based employees concluded that, engineers think one way and non-engineers think another. His learning theory explained that different perception of technical and non-technical employees cause differences in commitment level.

Indeed, recent study by Hsiu (2013) identified that the employee's capability improvement is influenced by the perceptions and reflections on portfolio practices in leadership development. The perception levels of employees enable them to prepare for work in the industry (Martin, Maytham, Case, & Fraser, 2010). In view of this, consulting engineers are trained to be self-independent on handling different tasks. Engineers, through technical excellence, identify and analyze problems, design and evaluate solutions, and plan and execute new systems (Kishimoto & McGuire, 2010). Engineers make things work, going about their job without much fanfare, but they do not know much about the managerial focus in the company's long-term development plan. This could be related to the nature of engineering as a social science associated with society and human behavior. All these elements have led to the perception of engineers towards their organization on how it could delegate the working load to them without affecting their life style. Weinghardt (2003) identified that engineers have the capacity and intelligence to solve problems and also have the potential to commit to an organization, but the ability of an organization to provide a competitive place for staff still remains an issue in the engineering industry. Engineering-based companies must inspire their engineers to attain leadership competencies and help them in the decision-making process,

otherwise, it may lack competent staff in the future (Hoffman, Bynum, Piccolo & Sutton, 2011).

Indeed, whether the consulting engineer's perceived leadership practices would be one of the factors influencing an engineer's commitment level is still vague. This issue has led the researcher to study about consulting engineer's perception on organization's capability in leading a team to achieve common goals and revert the leadership skills to make employees committed in the engineering industry. In this study, the researcher will highlight the main concern of the study that is related to the engineer's organizational commitment with human resource issue by studying the impact on perceived leadership practices that affect the engineer's organizational commitment in their workplace.

Thus, this study has adapted three dimensions of organizational commitment developed by Steer, Porter and Mowday (1974). They are:

(a) strong belief in, and acceptance of the organizational goals and values

(b) a willingness to exert considerable effort on behalf of the organization

(c) a definite desire to maintain membership in the organization to measure the engineer's organizational commitment.

Kouzes and Posner (1987) developed five (5) models related to perceived leadership practices. They include modeling the way; inspiring a shared vision; challenging the process; enabling others to act; and encouraging the heart was used to measure the engineer's perceived leadership practices. According to Mehboob, Arif, and Jalal (2011), the impact of subordinate's commitment is greatly influenced

by the person in position of authority. For example, when supervisor encourages higher performance, the subordinate will perform at higher level. Muthuveloo and Raduan (2007) explained that positive employees' perception establishes a high level of organizational commitment, and the high level of organizational commitment brings significant outcome to positive commitment in an organization.

1.4 Objectives of the Study

The objectives of this study are:-

a. To examine how the perceived leadership practice – *modeling the way* relates with consulting engineer's organizational commitment at their working place.
b. To examine how the perceived leadership practice – *inspire a shared vision* relates with consulting engineer's organizational commitment at their working place.
c. To examine how the perceived leadership practice – *challenge the process* relates with consulting engineer's organizational commitment at their working place.
d. To examine how the perceived leadership practice – *enable others to act* relates with consulting engineer's organizational commitment at their working place.
e. To examine how the perceived leadership practice – *encourage the heart* relates with consulting engineer's organizational commitment in their working place.
f. To investigate the differences of organizational commitment according to consulting engineers' gender.

g. To investigate the differences of organizational commitment according to consulting engineers' age.
h. To investigate the differences of organizational commitment according to consulting engineers' years of working experience.

If engineers could maintain their commitment in a company by displaying high ethical standards, act with honesty and integrity, this in turn would assist the company to achieve its goals as well as reputation in an organization.

1.5 Research Questions

This research expands the study on perceived leadership practices and organizational commitment of engineer's at their workplace. The research questions are as follow:-

1. How would the perceived leadership practice - *model the way* relates with consulting engineer's organizational commitment at their working place?
2. How would the perceived leadership practice - *inspire a shared vision* relates with consulting engineer's organizational commitment at their working place?
3. How would the perceived leadership practice - *challenge the process* relates with consulting engineer's organizational commitment at their working place?

4. How would the perceived leadership practice - *enable others to act* relates with consulting engineer's organizational commitment at their working place?
5. How would the perceived leadership practice - *encourage the heart* relates with consulting engineer's organizational commitment at their working place?
6. To what extent the gender differentiates the consulting engineer's organizational commitment at their working place?
7. To what extent the age differentiates the consulting engineer's organizational commitment at their working place?
8. To what extent the years of experience differentiates the consulting engineer's organizational commitment at their working place?

1.6 Significance of the Study

This study shall assess the impact on how perceived leadership practices of engineers correlates to organizational commitment in engineering firms. Its significant is huge and shall impact on:-

a. Consulting engineer's perceived leadership practices - modeling the way would provide imminent concerned of the engineers toward organizational leadership style and effectiveness. The identification of perceived leadership practices in modeling the way in an organization helps project-oriented organization to promote competent staff towards managerial level.

b. Consulting engineer's perceived leadership practices - inspiring the shared vision with the engineers provide a platform that the organization is concern about their progress of work by giving them guidelines to build them together.
c. Consulting engineers perceived leadership practices - challenge the process enable the engineers to develop their knowledge implicitly and explicitly. The knowledge could be gained from the tasks assigned by their organization.
d. Consulting engineer's perceived leadership practices - Enabling others to act allows top management to be aware that Engineers today need to be innovative and this will help a company to grow together to achieve company's goals. The encouragement allowing others to act will develop engineer's management skills with technical competencies in their work place.
e. Consulting engineer's perceived leadership practices - Encourage the heart by providing a platform to the organizations on encouraging, recognizing and developing the level of engineer's commitment in an organization.
f. Help researcher to better comprehend the relation between leadership practices via modelling the way, inspiring a shared vision, challenging the process, enabling other to act, and encouraging the heart to build consulting engineer’s organizational commitment at their work place.
g. Help researcher to better comprehend the difference of consulting engineer’s organizational commitment based on gender, age and years of working experience.

1.7 Scope of the Study

According to BEM Regulations, an engineer must register with BEM to eligible them to work in any engineering consulting firms in Malaysia. Currently, they are 2,940 engineers working in engineering consulting firms (ACEM, 2011). These engineers were chosen to complete the survey questionnaires. ACEM is the only professional body under the jurisdiction of BEM (ACEM, 2011). According to Krejcie & Morgan as well as Cohen (Sekaran & Bougie, 2013), the minimum sampling size required for this study is 341 respondents. This study enables the researcher to examine the perceived leadership practices and organizational commitment of consulting engineers in their work place.

1.8 Limitations of the Study

The researcher would like to emphasize on the limitations of the research work. They are:-

a. The survey is self-administered. The researcher unable to explain to the participants who reply via On-line of the method of filling the questionnaires. It assumes that the participants are answering with their most accurate answer.
b. It is assumed that the questionnaires were completed by the person whom the questionnaire is mailed to. The main purpose is that the complete questionnaire had to be filled by a person who had graduated from a bachelor degree in Engineering regardless of the discipline and work within Malaysia.

c. The research questions were integrated with leadership and organizational commitment within Malaysia – Association of Consulting Engineers Malaysia (ACEM).

1.9 Term Definitions

The followings have been defined to aid in understanding the key terms in this study.

1. Board of Engineer, Malaysia (BEM) - Engineering Professional body constituted under the Registration of Engineers Act (1967). The main purpose of this professional body is to ensure that all engineers are carrying out their work professionally in accordance to the safety requirements as set by the Ministry of Work which is stated in the Engineers Act. The Ministry of Work is a government body responsible to ensure BEM complies with all the requirements.
2. Association Consulting Engineers Malaysia (ACEM) - The consulting Engineering body govern under Board of Engineer, Malaysia. The main purpose is to provide professional consultation for BEM. This body supports the advancement of the profession of consulting engineers by linking all the consultation work with the related practitioner engineers who work under ACEM to provide facilities for Governments, Public Bodies, and Associations representing the industry and trade. Besides, it confers with Consulting Engineers as a body and to ascertain their collective views.
3. Modeling the way - Leaders believe in the way they plan and always care about their achievement. He/she will always set an example to their

subordinates to follow. The subordinates will observe the way how his/her leader acts.

4. Inspire a shared vision - The followers perceived their leaders to have the ability to make a difference by leading them to achieve the same goals.
5. Challenge the process - The work of leaders has changed. The subordinate will see that their leader use creative and innovative ways to lead them and to shape their career development.
6. Enable others to act - Leaders know they can’t do it alone. The subordinate will trust his/her leader and able to cultivate teamwork by developing trust and relationship in the team.
7. Encourage the heart - When reaching the peak of their work, subordinates become exhausted, frustrated and disenchanted. The subordinate will see how his/her leader is able to keep their hope and determination alive by recognizing their hard work.
8. Organizational commitment - Personal development with the organization which includes staff involvement in the work and the value of self-belief in an organization.
9. Liquidate and Ascertained Damages (LADs) - The amount of payable to be recovered by either party for a breach of the agreement when the amount of the damages has been ascertained by the judgment in the action.

1.10 Summary of Chapter 1

In this chapter, the researcher provides an in-depth introduction on the research description such as the background of research, problem statement, research objectives, research questions, significant of study and limitation of the study have been discussed. In the next chapter, the researcher will provide several literature reviews related to the area of study to build up the foundation of this study.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The literature review for this study is to provide evidence and applicable theory base on historic research context. The literature review for this study encompasses two major sections. First, it provides a broad review of the literature that explains the rationale of the researcher on choosing organizational commitment as the dependent variable and also leads to the rational of studying the consulting engineer's perceived leadership practices as the independent variable in engineering industry. Second, it is to establish an in depth study through a co-relative investigation of consulting engineer's perception of an organization and organizational commitment based on Leadership Practices Index (LPI) developed by Kouzes and Posner (1987) and Organizational Commitment Questionnaire (OCQ) developed by Mowday, Porter, and Steers (1979) to identify the level of consulting engineer's commitment to an organization.

The researcher would extent the research from previous researches which is related to graduates in one specific university (Woods, 2007) and integrated into a highly discipline industry - Engineering which requires different approaches on conducting daily work practices.

2.2 Engineering

2.2.1 Perception of Engineers' Competencies

Up until January 2010, there are statistically approximately 70,839 engineers registered under The Board of Engineer Malaysia (BEM, 2012). Engineers have contributed their knowledge by creating the technology that rules the world and have been producing most of the advances in the industry today (Vest, 2013). Grand Challenges for Engineering (2008) concluded that the world largely depends on engineers to improve society's life and create a better place for all of humanity. The crucial and unique task of an engineer is to identify, understand, and integrate the constraints of a design in order to produce a successful result. It is usually not enough just to build a technically successful product- it must also meet further requirements.

Engineers nowadays need to change to compete with rapid changes in the market environment. If an engineer is not trained in public policy, ethics, leadership, communication, and management, then, he cannot adequately serve the public. (Galloway, 2007). This changes challenge the engineers to assume leadership roles in their organization (Shiva, 2011). They will not simply emerge as a competent labor to drift into leadership position, but is an opportunity for professional development. Engineers have a strong sense on perceiving leaders abilities (Shiva, 2011) and leadership practices to move them from technical engineers to managerial level by providing essential leadership training by the organization (Goh, Coaker, & Thorpe, 2008). Engineers have a strong perception towards their leaders

on how they are leading a team and move them to management level. Besides that, how the leaders are able to seek and attract engineers who are intelligent and gifted with management and leadership qualities

Indeed, the assistance from the engineering leader would develop an engineer on the human side of project management. It will provide the skills and techniques on motivating and engaging engineers which was a great challenge to the success of an organization (Aucoin, 2002). Historically, engineers do not possess the competencies required for management or leadership. Veblen (1917) viewed that engineers have been "a somewhat fantastic brotherhood of over-specialized cranks, not to be trusted out of sight except under the restraining hand of safe and sane businessmen". It can be traced back to 1950s, where engineers were hired to be technician with little power attributes to business and industry. It was vested in "corporation chieftain and the political directorate" (Mill, 1956, as cited in Frankel, 1993). Moretti (2002) and Baugh, Davis, Covacs, Scarpino, and David (2009) categorize engineers as poor communicators who require development from the organization to lead them into management as they are too disciplined in solving technical problem. Furthermore, it was mentioned that they are incapable of being a team player and make high-level decision. Compared to others, engineers are more oriented towards managing projects rather than doing research. Engineers are likely to have a mixture of professionalism compared to scientist (Shapira & Griffith, 1990). Backus (2008) identifies the needs of an organization to guide the engineers while pursuing project tendering and contracting, project planning and executing, project handling over, safety and health management, and total quality management process.

While ensuring the conceptual idea becomes real, engineers need to deal with several constraints. The constraints faced by engineers are availability of resources, physical or technical limitations, flexibility for future modifications and additions, and other factors, such as requirements for cost, manufacturability, and serviceability. Engineers who comprehend these constraints will be able to analyze the limitations in engineering practices.

2.3 Organizational Commitment

The commitment in an organization is the main focus in this dissertation and to investigate the correlation with engineer's perceived leadership practice. To improve the organizational outcome, clear explanation of organizational commitment will help to motivate employees to achieve their self objective.

The commitment level in an organization has been developed into several elements. According to Gautam, Van Dick, Wagner, Upadhyay and Davis (2005), organizational commitment was developed since 1970s. Steers (1977) defined organizational commitment as 'the ability of an individual's identification with and involvement in an organization'. In 80's, Mowday, Steers, and Porter (1982) defined the term organizational commitment as the ability of a person on identifying with, or/and involvement of a person in an organization. Mohammed, Taylor, and Hassan (2006) defined organizational commitment as a fundamental aspect of the employer-employee relationship.

Meyer and Allen (1997) explained other variables such as antecedent, consequence, and correlation is associated with organizational commitment. These have given a base for future development on organizational commitment (a) transformational leadership (Atmojo, 2012), (b) Organizational citizenship behavior (Gautam, Van Dick, Wagner, Upadhyay, & Davis, 2005 & Bakhshi, Sharma, & Kumar, 2011), (c) Work life quality (Huang, Lawler, & Lee, 2007), (d) Job stressors (Yahaya, Yahaya, Halimah Ma'alip, Shahrin Hashim, & Alwee, 2012), (e) Role ambiguity (Tang & Chang, 2010), (f) Perceived external prestige (Fuller, Barnett, Hester, Frey, & Relyea, 2009), (g) Procedural justice (Bagdadli, Roberson, & Paoletti, 2006). Thus, the commitment level in an organization is still a hot topic to be studied which correlates into different functionally and geographically diverse population.

There are many scholars who have focused on the conceptualization of commitment study. Several conceptualize commitments such as affective commitment and continuance commitment which concerns employees' emotional attachments to their organizations (Sinclair, Tucker, Cullen, & Wright, 2005), Individual primary commitment orientation toward different focal point (Swailes, 2002), Career commitment (Mohammed, Taylor, & Hassan, 2006), and occupational commitment (Cohen, 2007). Chang, and Choi (2007) and Hossein, Gholamreza, and Sameraeh (2010) differentiated organizational and professional commitment.

As the employees are the most important asset in an organization (Bassi & Mcmurrer, 2007), a high level of employee's commitment is essential to lead a team, especially in the aspect of performance and affective commitment (Meyer, Stanley,

Hersovitch, & Topolnytsky, 2002; Sinclair, Tucker, Cullen, & Wright, 2005). Organizational commitment is the employee's psychological attachment to the organization. According to Khan, Ziauddin, Jam, and Ramay (2010), commitment is inter-related with job performance. Khan, Ziauddin, Jam, and Ramay (2010) explained that managerial decisions would affect working environment, and the working environment would incorporate with commitment.

2.3.1 Defining Organizational Commitment

The term organizational commitment has many different definitions with respect to the existing terms (Mowday, Steers, & Porter, 1982). The contribution to the commitment discourse can be backdated to pre-1960s. A philosopher, Mark Parker Follett's paradigm presumed that participation and active involvement of all members, sharing information and practicing democratic approach instead of autocratic approach irrespective of their formal position or status, and union will unite every team members organizationally (Fox, 1968).

Extensive literature base with reference to the term organizational commitment, the definition tend to be approachable and belief in. The definition of organizational commitment as stated in Porter, Steers, Mowday, and Boulian (1974) is:-

> *"The strength of an individual's identification with and involvement in a particular organization. Such commitment can generally be characterized by at least three factors: (a) a strong belief in and acceptance of the organization's goals and values;*

(b) a willingness to exert considerable effort on behalf of the organization; and (c) a definite desire to maintain organizational membership." (p. 604).

(Porter, Steers, Mowday, & Boulian, 1974)

Later, Meyer and Allen (1991) defined organizational commitment into three components, there are affective, continuance, and normative bases:-

Affective commitment refers to the employee's emotional attachment to, identification with, and involvement in the organization…….Continuance commitment refers to an awareness of the costs associated with leaving the organization…….Finally, normative commitment reflects a feeling of obligation to continue employment. (Meyer & Allen, 1997, p. 67)

In spite of the various definitions, meta review of organizational commitment includes the association between employees and organization. Mathieu and Zajec (1990), and Meyer and Allen (1997), in their Meta-analyses showed relevant incorporation of organizational commitment are organizationally relevant. Committed employees tend to have personal values that are similar to those in an organization. The employees are satisfied to be a member in their organization and are concerned about their career growth in the organization, and recommend the organization as a great place to work. Steers (1977) identified that high committed employees will have greater performing work-related tasks. The more the employees believe an organization will meet their long-term needs and goals, the more

committed they are.

2.3.2 Historical Perspective on Organizational Commitment

Max Weber, a philosopher and father of sociology in nineteenth century provided an early perspective related to organizational commitment (Wren, 2005; Timothy, 2010). Max Weber's idea of what an organization could become and how organizational commitment serves humanity. According to Wren (2005), Max Weber identified how bureaucracy provided a necessary organizational frame for followers to collaborate with each other to achieve common goals. Weber's suggestion about the attachment of an organization clearly states that:-

> *It is horrible that the world could one day be filled with nothing but those little cogs, little men clinging to little jobs and striving toward bigger ones... This passion for bureaucracy…is enough to drive…one to despair.*
>
> *(Weber, as cited in Wren, 2005, p. 229)*

"All of philosophy is a footnote to Plato". It could also say that "all of organizational theory is a footnote to Weber" Rusell (as cited in Timothy, 2010). The suggestion by Weber was applicable to this modern day which has imported to most of the organizations.

Mary Parker Follet, a philosopher, born in pre-1960s contributed to commitment discourse. According to the Follettian paradigm, coordination is the

process of integration and it implies of the active involvement, participation, willingness and honest contribution of each party involved, and reciprocal of all members, irrespective of all the factors in a situation without sacrifice by any party (Fox, 1968). Follet principles of coordination involves a direct interaction between staff and staff, staff and organization, initial planning in the early stage and follow up during the execution process.

Becker (1960), one of the earliest approached a study of the comprehensive organizational commitment conceptual framework associated within individual's relationship with the organization. Becker discerned the roots of organizational commitment via the concept of side-bet theory that links efforts to valued returns. According to Becker's theory, employee and organization are subjected to contractual changes based on economic exchange behavior. A person who is committed, in the sense of exchange service and efforts, is seeking to satisfy needs value such as reward and recognition. Organization's initiation of side bets would encounter workers intent to leave an organization and does not significantly correlates with greater compensation but if they deem the decision impugn their reputation. Becker's study focused on continuance commitment in an organization that provided a conceptual foundation to other researches, especially Meyer and Allen (1991) scale – three components conceptualization following 30 years later.

Etzioni (as cited in William, 2009) described the positive organizational involvement associated with commitment. Etzioni identified involvement into three involvement zones (a) Alienative involvement (b) calculative involvement and (c) moral involvement. Alienative involvement defined as designates as type of negative-

relationship based. Alienative involvement provides an unsatisfactory atmosphere in their working place. The alienation happens when staff feels that they are no longer trusted in an organization and everyone is working for their own interest. Calculative involvement provides an atmosphere whereby the employees have either negative orientation or low-strength positive perception towards their organization. If there is only one group that always benefits all the time, other group will feel jealous and starts to be calculative. Moral involvement provides a high intensity and positive orientation towards an organization. Here staffs are morally involved in an environment where it can provide aspiration and motivation for the staff to achieve their personal goals.

Grusky (1966) stated that personal rewards and experiences have strong influence on a person's commitment in an organization. Grusky studied 1,649 managers of a large company and 75 percent respondents mentioned an insignificant correlation between rewards and commitment. Grusky's identified that organizational commitment is a predictor to correlate between rewards and commitment but the reward does not induce commitment.

Kanter (1968) suggested that there are three types of processes in commitment as the binding actors into social systems. They are continuance, cohesion and control commitment that incorporates the person-to-organization linkage mechanisms. Kanter recognize that commitment incorporates with other elements. Kanter presented continuance commitment which involves securing a person's positive cognitive orientations, inducing the individual to cognize participation in the organization as profitable when considered in terms of rewards and costs. Cohesive commitment is a social-relation based that involves the

attaching of personal influences and emotion in an organization; emotional gratification stems from involvement and from recognizing the cohesiveness of a group, and control commitment is authority-compliance with regards to an individual's positive evaluative orientations, readjusting his pressure needs so that the demands are deemed to be right in terms of his personal justification, and the authority compliance becomes a moral necessity. Kanter's work was conducted into a more complex research in an organization but the problems on quantifying commitment measurement still remain unsolved.

Sheldon (1971) constructed organizational commitment via the testing of hypotheses. He mentioned that investments in a utilitarian organization will produce commitment to the organization regardless of other features of the relationship of the members to the organization. Seldon identified that social investment and participation improves the commitment level in an organization. Social participation brings high commitment level in an organization and participation allows staff interaction and team identification (Sial, Jilani, Imran, & Zaheer, 2011). Both are correlated with each other (Sial, Jilani, Imran, & Zaheer, 2011).

Hrebiniak and Alluto (1972) further the side-bet theory and Kantor's and Seldon's studies about the antecedents of organizational commitment. The study involves participation of primary and secondary school teachers, and registered nurses. Hrebiniak and Alluto (1972) explained that commitment is significantly correlated to the exchange oriented and accumulation oriented behavior with respect to year of experience in an organization and personal attribute. Some studies indicated that organizational commitment involves personal's perception on

incentives received which contributed in coordination with side bet. The concept of commitment, according to Hrebiniak and Alluto (1972) is greatly towards behavior oriented.

Buchanan (1974) builds organizational commitment via the interaction of managers in work organization. Buchanan identified that commitment includes recognition, participation and trust. Buchanan (1974) studied 279 business and government managers and made hypotheses into two questions which are related to personal attitudes and years of experience. Buchanan (1974) identified that the years of working experience has a positive correlation to the level of organizational commitment. Buchanan (1974) divided experience into 13 scales and discovered that employee's attitude has positive correlation with the organizational commitment. Buchanan further categories organizational commitment into three discrete points of organizational employment status. They are (a) sensitivity of the organizational mission; (b) sensitivity of participation in the task given to them, and (c) trust and loyalty of working in an organization and the willingness to search for new tenure. The result showed that when organizational commitment is measured with tenure, there were a 68% variance when it corporate into multiple factors.

Porter, Steers, Mowday, and Boulian (1974) conducted a longitudinal investigation to study variations in the level of commitment in an organization and job satisfaction correlated to turnover. This significant study using Organizational Commitment Questionnaire (OCQ) as a tool of measurement showed the difference between job satisfaction and the level of commitment in an organization is inversely correlated to turnover. Job satisfaction involves the task of an employees need to

perform and the commitment level in an organization refers to the employee's willingness to work in an organization and the intent to work with (Dadgar Barahouei, Mohammadi, Ebrahimi, & Ganjali, 2013).

Steer (1977) developed a commitment model which involved antecedent and consequences. Steer's grouped the commitment model into two categories. The first category includes personnel and job characteristic, and years of working experience as antecedents. The second category includes intent to stay, absenteeism, and employee's retention as organizational commitment consequences. The study involved participants from hospital employees, scientists, and engineers. Steer identified that the employees who acquire a strong belief and acceptance of the organization's goals and values, who have a willingness to exert considerable effort on behalf of the organization and who have a definite desire to maintain organizational membership are able to promote competitive environment locally and internationally.

Mowday, Steers, and Porter (1982) defined organizational commitment as the "ability of a person in recognizing and participating in an organization" Mowday, Steers, and Porter conceptualize organizational commitment as the organizational belief and acceptance.

The early developments of organizational commitment theories were typically expressed in uni-dimensional construct (Meyer & Herscovitch, 2001). The uni-dimensional construct is divided into two main categories namely attitudinal commitment and behavioral commitment (Meyer & Allen, 1991). Meyer and Allen's

argued that the three commitment variables - affective, continuance and normative would have weaknesses when measuring the commitment level in an organization in career development succession.

In Mowday, Steers, and Porter (1982), they stated that:-

> *"Attitudinal commitment focuses on the processes by which people come to think about their relationship with the organization. In many ways it can be thought of as a mind set in which individuals consider the extent to which their own values and goals are congruent with those of the organization. On the other hand, behavioral commitment relates to the process by which individuals become locked into a certain organization and how they deal with this problem." (p. 26)*

Mowday, Steers, and Porter (1982) viewed that "attitudinal commitment" and "behavioral commitment" is inter-related and that forms a cyclical relationship. Thus, comparing Mowday, Steers and Poster (1987) and Meyer and Allen (1991) three commitment components theory, both are delineating the same that associated among each other. The difference is that Mowday, Steers, and Poster (1974) model was use to assess the affective component of commitment, and Meyer and Allen (1991) model was use to assess commitment through the use of the three commitment components.

Buchanam (1974) concluded that commitment consists of three components. They are (a) a sense of identification with the organization's mission, (b) a sense of

involvement or psychological immersion in one's organizational duties, and (c) a sense of loyalty and affection for the organization, indicated by an unwillingness to depart for other opportunities. Chang and Choi (2007) explained that organizational commitment produce behaviors that (a) reflect personal sacrifices made for the sake of the organization, (b) do not depend primarily on reinforcements or punishments, and (c) indicate a personal preoccupation with the organization.

Reichers (1985) extended Mowday, Steers, and Porter (1982) studies of the three stages in the organizational commitment development for the individual. Reichers identified that consistency in commitment consequences was not matched by initial research relating to commitment correlates. Reichers' commitment level in an organization explained that measuring commitment is unjustified based on current measurement methods.. Reichers identified there are three varieties experienced by the employee along career progression. The first stage of the career is marked by the psychological variables of expectations, challenges and conflicts. The behavioral elements of irrevocable and volitional acts has marked as second stage, and in the final stage, the career and organizational commitment are marked by the structural elements of sunk costs, tenure in the organization and or lack of opportunity to leave are the manifestations of the level of commitment in an organization.

Reicher's (1985) model can overlap during the career of an organizational member. Mowday, Steers, and Porter (1982) described the three stages for individual development in organizational commitment. The stages in progression are: pre-entry (anticipation), early employment (initiation), and middle to late career

(entrenchment) in the organization (Meyer and Allen, 1991).

Mowday, Steers, and Porter (1982) assert that organizational commitment is driven by an emotional or affective variable. Mowday, Steers, Porter, and Boulian (1984) concluded that job satisfaction is inversely related to turnover, which is, when job satisfaction increases, the rate of turnover reduces. Job satisfaction refers to a specific work function that an employee performs, and organizational commitment refers to employee's satisfaction level to remain in the same company.

Meyer and Allen expanded organizational commitment into three-component model. The three components are affective commitment, continuance commitment and normative commitment. Meyer and Allen (1991) characterized affective commitment as an employee's positive emotional attachment to the organization. Employees who are affectively committed see themselves as part of the organization by choice. These are the employees who are highly involved in the organization's activities and will be enthusiastic in pursuing organization's goals. Affectively committed employees will remain with the organization because he/she choose to do so. Bechman (2003) also supported that affective commitment is the most researched commitment form use for study.

Generally, there is not much antecedents on continuance and normative commitment. Meyer and Allen (1991) defined continuance commitment as a need component to keep employees in an organization with relation to the cost associated with terminating employment. Continuance Commitment is the "need" component or the employee's attitude in an organization. A person may try to perform

extraordinarily if he/she feels that they may lose theirs. As such, continuance commitment is inversely correlated to worker's job skills and the level of education. The continuance commitment is positively related to external factors such as job offering in other organizations. Meyer and Allen (1991) also identified that employee's age and working experience have a high impact on employee's commitment level in an organization.

Normative commitment development has less empirical understanding on the study. According to Meyer and Allen (1991), normative commitment is an obligation component or a duty to stay in an organization. Individual feels the strain in an organization by comparing their employment before and after serving in the same organization. According to Wiener (1982), the underlying construction of normative commitment is that this commitment will act in such a way to achieve the organizational goals and interests. In fact, if an employee feels that they are belong to an organization and the 'ought to' do so, the employee would have high normative commitment to remain in the same organization (Allen & Meyer 1990).

Many Researchers supported that job experience is positively related to affective commitment. Table 2.1 summarizes several findings related to the different Independent variables and the commitment level in an organization.

Table 2.1
Organizational commitment research

Independent variable considered	**Relationship with AC, NC, or CC**
Perceived organizational support and turnover intention (Tumwesigye, 2010)	Positive relationship with AC
Job tenure, achievement motivation career salience, emotional intelligence and job satisfaction (Salami, 2008)	Positive relationship with AC
Gender, education, title and working experience (Eker, 2008)	Positive relationship with AC
Turnover intention (Ali & Baloch, 2009)	Positive relationship with AC
Prestige (Kang, Stewart, & Kim, 2011)	Positive relationship with AC
Trust and job satisfaction (Mohamed, Abdul Kader, & Anisa, (2012)	Positive relationship with AC
Psychological empowerment (Choong, Wong, & Lau, 2011)	Positive relationship with AC and NC
Availability of employment alternatives (Meyer, Stanley, Hersovitch, & Topolnytsky, 2002)	Negative relationship with AC, NC, and CC, though strongest with CC

Note. AC = affective commitment, NC = normative commitment, CC = continuance commitment.

In view of this statement, several studies conducted by Mathieu and Zajac (1990); Meyer and Allen (1997) and Mowday, Porter and Steers (1982) identified that low commitment being the most related to affective commitment. Strong support on organizational rewards, procedural justice, and supervisor support showed significant association with affective commitment than structural attributes in an organization (e.g., decentralization) or personal characteristics of employees (Rhodes & Steers, 2001).

Comparing the affective commitment of Meyer and Allen (1991) or the desire to remain in an organization, Mowday, Steers, and Porter (1979) described commitment as “the relative strength of an identification with and involvement in a particular organization. Continuance commitment is described as the continuance of an action to remain with an organization because of the costs associated with terminating employment (Meyer & Allen, 1991).

By comparing within Meyer and Allen (1991) and Mowday, Steers, and Porter (1979) three component theory, one does not cancel out each other. The noted difference is that Mowday, Steers, and Porter (1979) model primarily measures the affective component of commitment. As mentioned earlier, the Meyer and Allen (1991) model tend to explain commitment via three inter-related components.

An such, the literature review leads to this dependent variables study using Mowday, Steers, and Porter (1979) three commitment components as the measuring tool for organizational commitment that helps to identify employee's commitment in an organization which includes, (a) a strong belief in and acceptance of the organization’s goals and values (b) a willingness to exert considerable effort on behalf of the organization, and (c) strong desire to maintain membership in the organization.

2.3.3 Consequences of Low Organizational Commitment

Organizational commitment outcome has been studied by many. Organizational commitment variables such as absenteeism, turnover and tardiness has an inverse relationship with organizational commitment (Mowday, Steers, & Porter, 1982 ; Meyer & Allen, 1997) Many research topics focus on attendance, in-role performance, and organizational citizenship behaviors within organizational commitment in context with specific environments and uses organizational commitment as the independent variable in many doctoral research paper.

The correlation of organizational commitment and engineer's commitment level is used as predictor to investigate the relationship between employer and employee is weakening. Low employee's commitment level could affect the staff loyalty in an organization which is not easily replaced by finding a new employee with the same capability to carry out the same task. This is because the employer has no assurance that the company can replace someone with the same capacity. This would costs money to the organization in terms of recruitment, selection, training and development. Meyer, Stanley, Hersovitch, and Topolnytsky (2002) in a turnover-based measure study, identified that low commitment causes turnover and has a inverse relationship with organizational commitment. Further studies carried out by Hee and Ling (2011) and Fah (2010) also showed a negatively relationship. In other word, the level of commitment in an organization increases the degree of turnover, absenteeism and tardiness. (Salleh, Nair, & Harun, 2012).

Hanisch and Hulin (as cited in William, 2009) asserts that a person who has

low commitment may leave an organization which is related to the behavior that is mirrored by the employee who is failing to comply with his/her daily work activities such as being absent to the scheduled meetings and avoid facing work problems. Meyer and Allen (1984) showed that this behavior has a positive correlation between affective commitment and performance.

According to Meyer. Bobocel, and Allen (1991), the difference between affective commitment and continuance commitment is, the higher the level of continuance commitment may be associated with low work performance, but work performance is correlated to affective commitment. On the other hand, the higher the level of affective commitment in an organization, it increases the likelihood of an employee to work harder in an organization (Meyer & Allen, 1991). Muthuveloo and Raduan (2007) assert that employees who have a positive perception about their organization, will have a higher commitment level in an organization, and higher commitment level brings positive organizational outcome.

2.3.4 Demographic Variables Affect Organizational Commitment

Literature relevant to organizational commitment shows several variables affecting organizational commitment. One of the major concerns by Meyer and Allen (as cited in Bridges & Harrison, 2003) is demographic characteristic. Demographic characteristics are related to the demographic variables which include age, year of working experience, gender, educational background, marital status, level stages and years of working experience (Bridges & Harrison, 2003). Meyer, Stanley, Hersovitch, and Topolnytsky (2002) argued that demographic variables

have a positive correlation among each other and it will impact the commitment level in an organization. Mathieu and Zajac (1990) identified that demographic characteristics has a weak positive relationship with age, organizational tenure, and marital status. Ali and Baloch (2009) reported that perceived organizational support and trust is a good mediator to use to correlate between demographic commitments. However, Eker (2008) studies on health care staff showed that gender, education, title and working experience are effective to the organizational commitment level. Salami (2008) studies on industrial workers showed a significant positive correlation between organizational commitment and age, marital status, education level, job tenure, achievement motivation career salience, emotional intelligence but the correlation between commitment and gender is not significantly correlated.

Indeed, Nasurdin and Ramayah (2003) concluded that age has a direct influence on organizational commitment. Specifically, age differentiates between (a) satisfaction with pay and commitment, (b) satisfaction with promotion and commitment, and (c) satisfaction with coworkers and commitment.

Lew (2009) used age, as a moderator to examine the positive relationship between three components (normative, affective and continuance commitment). Lew (2009) found that age level differentiates commitment level. Lew (2009) tested the significance of variables and concluded that gender, years of working experience, marital status, race and qualification have a weak significant influence in the three components in commitment model (normative, affective and continuance commitment). This finding was supported by Eslami and Gharakhani (2012) who explained that age does not associate with commitment.

However, in recent study done by Xu, Wang, and Liu (2013) they explained that in the construction industry, the demographic variables have significant influence especially on age, gender and years of experience. Lingard (2002) found that Australian civil engineers have significant influence between demographic characteristics and job satisfaction. Lingard (2002) identified the most significant variables as age, gender and years of working experience. Sang, Ison, and Dainty (2009) studied on architect's work life balance and turnover intention and concluded that age, gender and tenure has significant influence on architects turnover in UK. Hee and Ling (2011) found that quantity surveyors have the same influences in demographic variables. The most significant variables are age, tenure and gender.

Indeed, architecture, construction industry and quantity survey are all related to engineering industry. Due to the demographic differences on organizational commitment especially on age, tenure and gender, the researcher will investigate the differences particularly in relation to Malaysia's consulting engineers' demographic and organizational commitment via:

> ***"To what extent the gender, age and years of working experience differentiate the consulting engineer's commitment in their working place"***

2.4 Leadership

2.4.1 Defining Leadership

The spirit of leading a team has been studied since the evolution of industrialization in different theory and perspective. Leadership is defined as the internal value of a person who was born to be (Bernard, 1926). Different people will have different approaches towards leadership practice. Originally, scholars explained that the traits that differentiated a person's leadership skills are where the follower is able to examine the leader's personality, physical and mental characteristic of a leader. This type of research approach believed that leaders were born, and not made. Indeed, much research had been conducted to identify the traits but no one solid answer could explain the traits that are consistently associated with great leadership (Horner, 1997).

Indeed, another pattern of leaders behavior substantively evolutes from contemporary to ancient times. In the early days, leadership theorists failed to consider the relationship and situational variables and that have more comprehensive theories that contemporaries, whereby new theories are more focused and less ambitious that previous theories (Bass, 1973). However, Bass argued that theory and empirical research should be carried out in parallel by stimulating, supporting and modifying concurrently and neither can stand alone. This has brought the leadership theory to another level and that is leaders are not born but made.

Subsequently, leadership is defined as the ability of one person who has significant ability to influence the follower by developing and structuring the social

interaction capability, and the ability to re-shape and unifying dynamics based on the leader's interest and goals (Bales & Cohen, 1979; Bales & Isenberg, 1980; Nadler, Ellis, & Rabin, 1996; Hogan, 2005).

However, leadership is ubiquitous in common discourse. Bennis and Nanus (1985) who studied over 20 years and in their study noted that,

> *Literally thousands of empirical investigation of leaders have been conducted in the last seventy-five years alone, but no clear and unequivocal understanding exists as to what distinguishes leaders from non-leaders, and perhaps more important, what distinguishes effective leaders from ineffective leaders. (p.4)*

Bennis and& Nanus' study is considered relevant today as it was then (Vroom & Jago, 2007) defined the term "leadership" and it is not a scientific term with a formal or standard definition.

Although leadership had been discussed for many years, academicians have yet to find out the most appropriate definition of the meaning of "leadership". (Bass, 1985). Rost (1993) argued that "till up-to-date, no commonly accepted definition of leadership explains the exact meaning due to the common argument in both practitioner and academic circles.

Rost (1993) examined a significant subset of leadership literature from 1900 to 1990 and obtained 221 leadership definitions which included 587 scholarly works reviewed. Bennis and Nanus (1985) also found over 350 leadership definition arising from their review of thousand of studies conducted in this century. The studies produced many inconsistencies and overlapping definitions and no distinguished or controversy over theoretical and methodologies issues. The topic of leadership remains complex to define with a single definition. Orsak (2006) is one of the few researchers who defined leadership in the matter to cultivate the acceptance and reputation in the late twentieth-century. Northouse (2004) defined leadership as a process of team work that influences a group to achieve goals. (p.3). In addition, he views leadership as a power relationship between leaders and followers, as an instrument of goal achievement and as a set of skills that make leadership possible. In this section and onwards, this paper attempts to make a review in the different definition of leadership.

Burns (1978) defined leadership as "the mutual and continuous process of inspiring for a person with certain motives and values, various economic, political and other resources, in a contact of competition and conflict, in order to achieve goals independently or mutually held by both leaders and followers" (p.425). Such definition was basically inter-related to transactional leadership whereby a leader and follower would have to alarm each other in order to obtain the personal and organizational goal that is set by the company.

2.4.2 Leadership Styles

A group of researchers explained leadership stems from an individual perspective that claims that leadership derives from a group of traits that leaders are essentially born with (Kirkpatrick & Locke, 1991; Stogdill, 1948, 1974).

The trait approach was commonly known as the "Great Man" theory (Borg & Tupes, 1958, p. 252 as cited in William, 2009; Northhouse, 2004). This theory was widely-accepted leadership theory, facilitated by the rapid development of psychological traits. It is defined as a personal capability on determining the principles of leadership (Northouse, 2004). As the early trait research was widely studied (Gibb, 1954; Mann, 1959; Stogdill, 1948) with various points of view as well as the earlier finding showed that traits theory was so extensive with diverse results to support the basic fundamental that people had to possess certain identifiable trait in such a way to become a leader, Stogdill (1948) had reviewed more than 120 articles written between 1904 till 1947 and ascertained five traits that appeared related to leadership ability:

a. Capacity – intelligence, alertness, creativity, judgment and flexibility
b. Achievement – knowledge, scholarship, and versatility in sports
c. Responsibility – reliability, initiative, perseverance, aggressiveness, self-confidence, and desire to be superior to others
d. Participation – active, social, cooperation, adaptation, and sense of humor
e. Status – socio-economic status and reputation

However, Stogdill (1948) concluded that they could not:

> *"A person does not become a leader by virtue of the possession of some combination of traits……the pattern of personal characteristics of the leader must bear some relevant relationship to the characteristics, activities, and goals of the followers." (p. 64)*

The trait approach used to scrutinize habitual patterns of behavior, thought, and emotion. The identification included intelligence, dominance, self-confidence, level of energy and activity, and task relevant knowledge. The leadership study was based on the proportion that individual traits explained leadership style. Kirkpatrick and Locke (1991) opinioned that leadership is a combination of abilities that enable a person to help others to accomplish with a given task by providing a guideline for the followers to follow. He identified that employees would always assume that their leader should have energy, sense of purpose, enthusiasm, friendly, technical knowledge, integrity, decisiveness, intelligence, teaching skill and faith.

The inquiries found that traits do not explain the exact meaning of leadership. The argument began from the behavioral research done by Stogdill (Northouse, 2004) and a strong objection of the traits approach in 1980s (Zaccaro, 2007). Although the traits theory has greatly diminished, Frank, 1993 (as cited in Andrew & Nada, 1999) identifies charisma as a key leadership trait. Lee, J. (2005) explained that a leader's attitude is the ability to inspire followers to a particular point of view in order to ensure the commitment level of employees in an organization, but the evidence supports that charisma leadership approach is limited.

The limitation on the development of traits approach has provided a new

school of thought that cares about worker's welfare that would also enable others to act. The evolution from traits theory during the twentieth century is the behavioral theory. It is also known as leader behavioral approach and style approach (Abramson, 2007). Behavioral approach was studied from the 1940s to the 1960s. It focuses on leader's behavior that sounds: what they do and how they do it (Purvanova & Bono, 2009). Stogdill (1974) categorized that behavioral leadership consists of two components to access the leaders, that is task oriented behavior and people oriented behavior. The theory suggests that focal leader's behavior can be placed on a one-dimensional continuum. Stogdill's (1974) notion explained that leaders could be made and leadership ability could be developed also via certain period of time, whereas trait theories positioned that leaders were born. The significant research brought to the new era of leadership theory.

Two significant studies related to behavioral leadership were conducted at the Ohio State University and University of Michigan. They developed behavioral model from traits theory via developing individual traits to behavioral pattern (Hollander, 1979). The main purpose of the study by Ohio State University is to find out the different leadership styles. There are two leadership styles and it refers to initiating structure and consideration structure. Initiating structure refers to the level of which a leader is task oriented and directs followers' work activities toward goal achievement and, consideration structure refers to the extent where leader is sensitive to followers, respects their idea and feelings, and establish mutual trust (Weissenberg & Kavanagh, 1972).

On the other hand, two behavioral leadership were developed by the

University of Michigan in behavioral leadership styles, namely, employee orientation and production orientation. Product orientation stresses on the technical aspect of a task assigned to employees as a tool in achieving goal, and employee orientation refers to sensitivity towards human relationships which involves achieving goals (Brown, 2003).

In summary, behavioral leadership theories provide numerous common characteristics. Generally, it emphasizes on people oriented style that requires team work and task oriented behavior that is closely link to work done by employees. Taylor (1911, as cited in Gilder, 2003).

In order to provide an environment that encourage follower to challenge the process, a new type of leadership approach called contingency or situational leadership was developed. The developing of situational model led to the hypothesis that there is no single style of leadership that is able to explain all situations (Boerner & Von Streit, 2005). Fiedler, Grover, and Teng (1996) identified numerous forms of contingency theories. Generally, contingency theories are categorized in that there is no single style of leadership that is appropriate for all situations. In other words, leadership style is contingent and is based on various internal and external constraints (Fiedler, 1964 as cited in Fiedler, Grover, & Teng, 1996). The most popular approaches to leadership are (a) Fiedler's Contingency Model (b) Path-Goal Theory, and (c) Hersey and Blanchard's Situational Leadership Model. According to Vroom and Jago (2007), Fiedler developed the first situational-integrative leadership model and it involves integrating power and member relations. Fiedler's model focuses on group performance, the outcome of effective leadership, result from the

leader's motivation and the degree to which the environment facilitates leader power and influence. Fiedler believes that leader's motivation pattern is related to trait oriented styles. Via Least Preferred Co-worker (LPC) questionnaire developed by Fiedler, the instrument measures the leader's esteem for co-workers to determine leadership style Vroom and Jago (2007). A low LPC score indicates that leader is task-oriented, and a high LPC score indicates the leader is relation oriented.

The evolution theories that suggest leader behavior effectiveness are associated with recognizing that every situation requires different leadership style. It refers to the basic core concept on the predisposition that leadership style is changed subject to the situational needs (Vroom & Jago, 2007). Effective leadership is highly dependent on situational leadership that asserts on the fit among individuals, prevailing attitudes and perceptions, the environment, the ability to perform task assigned, and other relevant variables that may influence a situation (Sims, Faraj, & Yun, 2009). However, some researchers basically criticize the effectiveness of the Least Preferred Co-worker (LPC) measurement tool (Schriesheim, Chester, & Neider, 2006). These researchers commented that the LPC reliability and validity test are thought to be low, and to certain extent it is not entirely clear what the LPC instrument measures and what actually the score represents (Stepanov, Yeoh, & Hart, 2007). In conclusion, the Fiedler's notion that task situation can be easily changed besides leader's personality and leadership style often contradicts with other research studies (Hersey & Blanchard, 1982; Kouzes & Posner, 1987).

Path Goal Theory is another approach of contingency leadership theory developed in 1971. This theory explains the limitation in other situational models

(Stepanov, Yeoh, & Hart, 2007). The path goal theory of leadership is fairly sophisticated theory that associates common achievement between organization and employees (House, 1971; House & Dessler, 1974).

The earlier version of path goal theory consists only of two behaviors that leaders used (Evans, 1970). They are instrumental leadership and supportive leadership. Instrumental leadership styles involve directive behavior from leaders. The leader schedules and coordinates specific guidance and steps for employee to follow, and request employee to abide by the rules and processes. Supportive leadership style refers to the consideration of employees' needs where leaders are concern for employees' welfare and the creation of a friendly climate at the workplace.

Later, House and Mitchell (1974) expanded the version of the theory using Evan's study, scrutinized the complex path goal theory pertaining to the effects of leader's behavior relating to subordinates. House's theory provided four specific leader's behaviors, that are directive, supportive, participative, and achievement leadership styles. Directive leaders tend to give specific guidance of performance to subordinates and they know what is expected from them; supportive leader tend to be friendly and shows concern for the subordinates and treats them equally; participative leaders tend to consult with subordinates and consider their suggestions for input in decision-making. Achievement-oriented leader sets high goals and expects subordinates to perform extraordinary and achieve high performance. Evan's (1974) theory also described three subordinate attitudes with respect to job satisfaction, acceptance of the leader, and expectation regarding performance and

rewards. In other word, the theory incorporates employees' job performance and satisfaction by focusing on their performance and motivation (Vroom & Jago, 2007). It measures relationship between the leaders and followers.

From House and Mitchell (1974) studies, it is concluded that:

a. Leader's behavior is accepted and appropriate when subordinates perceive such behavior as a source of satisfaction
b. Leader's behavior is motivational when a subordinate's need is fulfilled by supporting, providing guidance, clear directions and rewards needed for effective performance.

Further explanation on leadership theory by Burn (1978) looks at two different approaches on leading others with very different assumptions about how people work in an organization. The leadership theories are transformational and transactional leadership. Transactional leadership style was first described by Max Weber in 1947 and again by Bernard M. Bass in 1981. The notion lies on the belief that a leader holds power and control over the followers by providing them incentives to do what the leader wants. Transactional approach refers to the method of exchange between leaders and followers that influences each other reciprocally so that each derives something of value (Zhu, Sosik, Riggio, & Yang, 2012). The relationship between leader and follower becomes "transactional" – i. e.: *I will give you this if you give me that, where the leader controls the rewards or contingencies* (Yukl, 1998).

Although transactional leadership is described as an exchange of valued

outcome, Kuhnert and Lewis (1987) explained that all exchanges have different elucidation in every circumstance. Indeed, transaction can be distinguished into two basic criteria that leaders and followers engage. It can range from the obvious (eg. jobs demand, benefits for campaign contributions) to the less obvious (e. g. change of trust, commitment, and respect) Burn (1978, as cited in Karl & Philip, 1987). Bass and Avolio (1990) identified transactional leadership as a very systematic way of leadership that provides fundamental tools for effective management and communication of directives to accomplish goals. Bass and Avolio (1990) in their opinion states that transactional leadership consists of three dimensions. There are (a) contingent reward, (b) management by exception-active, and (c) management by exception-passive.

Contingent reward dimension refers to the process of exchange among leaders and followers in which the leader gives a task to the follower and the follower will accomplish the task for a reward and recognition. This relationship is based on the assumption that by explaining what the leader wants from the follower, the follower fulfills the requirement and is then rewarded for the appropriate behavior. This method encourages follower to perform at a certain level of performance (Obiwuru, Okwu, Akpa, & Nwankwere, 2011)

Management by exception (active and passive) dimension refers to leadership behavior that encompassed two distinct forms, namely active and passive. This leadership behavior comprises corrective criticism, negative feedback and negative reinforcement. The leader practicing management by exception-active, monitors the follower's performance, manages the follower's mistakes and provides corrective

guidance to the follower. Leaders who practice management by exception-active would most likely enhance the follower's performance via criticism perceived as fair; clarifies performance standards; or modifies poor performance in an acceptable path to mitigate adverse consequences. Management by exception-passive would be characterized as a leader who criticizes the followers after detecting errors or after violation of standards. In other words, an absolutely passive leadership style is *laissez-faire*, which is defined as the absence of leadership. Thus, *laissez-faire* is a contrast to the active leadership style of transformational and transactional leadership. This method would probably affect the follower's performance as well as lowering their productivity (Jens & Wolff, 2009).

While the transactional leadership has missed to provide adequate efficiency to the organization, transformational leadership is essential for successful management for transformational organizational change (Judge & Piccolo, 2004). Transformational leadership was first introduced in the leadership discourse in 1973 by J. V. Downton in his study "Rebel Leadership: Commitment and Charisma in the Revolutionary Process". The term "transformational leadership" was then further elaborated by James McGregor Burns in his book "Leadership" (Ivana, 1998). Burns (1978) studied the differences between transactional and transformational leaders. He used political leaders as a reference to conclude that transactional leaders are likely to bargain and bureaucratic oriented, whereby transformational leader are likely to be revolutionary and reform focused.

Burns transformational theory ideas were applied in organizational management by Bass to view leadership behavior (Bass & Avolio, 1993). Bass and

Avolio (1993) argued that transactional leaders are likely to be exchange oriented. In other word, transformational leaders are:

> *Attempt and succeed in raising colleagues, subordinates, followers, clients, or constituencies to a greater awareness about the issues of consequence. This heightening of awareness requires a leader with vision, self confidence, and inner strength to argue successfully for what he/she sees is right or good, not for what is popular or is acceptable according to established wisdom of the time.* *(Bass, 1985, p. 17).*

Bass (1985) developed on Burns' theory by expanding and refining Burns' Model. Bass study provides more attention to followers' rather than leaders' needs. By providing leader's behavior by going beyond exchanging rewards and recognition for accomplishments, leader achieves it by stimulating and inspiring followers' optimum capability to exceed their own self-interests. He identified three elements of transformational leadership that influence follower's competency: (a) charisma, (b) individual consideration, and (c) intellectual stimulation.

"Charisma" is a process whereby the leader has the personal attractiveness and interesting ability to control the followers by exciting their emotions and creating a personal connection with the leader. Bass combined charisma with intellectual stimulation and individualized consideration in order to assist followers to achieve organization goal. Individualized consideration refers to the leaders who gain respect from followers by providing mentoring capacity via maintaining good

communication levels, delegating projects and recognizing employees' needs. Finally, intellectual stimulation encourages followers to be innovative and good at problem solving. This process helps followers to create a proactive thinking when task is assigned (Northouse, 2004; Yukl, 2006).

Bass and Avolio (1990) further elaborated Bass' theory via study of transformational leadership and transactional leadership. Four dimensions of transformational leadership were identified: (a) Idealize influence dimension (b) Inspirational motivation dimension (c) Intellectual stimulating dimension, and (d) Individual consideration dimension.

Idealize influence dimension. The leaders provide a role model for high standard of ethical behavior and moral. Servant-leader behavior is exhibited in this dimension as the leader is willing to share experience and risk with the followers to instill pride, gains respect and trust. This dimension is often simply referred to as "charisma," which is the prototypic and often the single most important dimension (Bass, 1990).

Inspirational motivation dimension. Inspirational leaders set a higher standard to motivate the workforce by providing importance and challenge to follower's work. Follower follows the inspirational leader who is able to provide an emotional appeal that could increase the awareness and understanding of mutual desired goals (Bass & Avolio, 1990).

Intellectually stimulating dimension. Leaders who are intellectually stimulating are able to guide followers to think critically by challenging new ideas

and encourage innovative ideas (Bass, 1990). Leaders treat mistake as a learning process, and recognizing and rewarding innovation. Followers used to address problems and find solution within the organization. This dimension enhances employees' ability to move creatively and innovatively.

Individual consideration dimension. This dimension is concern with the development of followers by coaching and mentoring (Bass, 1990; Bass & Avolio, 1990). Leader always pay attention to each of the follower's abilities, aspirations, and needs to encourage followers in responding to problems faced. To effectively address a follower's goals and challenges, leader will treat then individually in order to raise their maturity levels.

Numerous scholars have used Bass and Avolio (1990) transformational leadership model as a guideline to conduct a more detailed study. For example, Jens and Wolff (2009) using Bass and Avolio model to ascertain the correlation between supervisors' leadership styles and subordinates' work performance with regards to chronic stress. The sample consisted of 244 participants from Germany's government agency staffs. The result showed that transformational leadership behaviors do not lead to higher levels of perceived chronic stress in subordinates. Table 2.2 showed the common differences between transactional and transformational leadership.

In summary, transformational leadership theory provides a broad set of characteristic behavior that defines the association within leaders and followers.

Transformational leadership provides a general thinking that improves follower abilities on solving problems by focusing on ideals, inspirations, innovations and individual concern (Northouse, 2004). Bass & Avolio (1990) compiled transactional and transformational leadership by encompassing behavior, contingency, and trait leadership theories. This provides a good explanation to categorizing the behaviors and attributes of effective leaders.

Table 2.2

The differences between transactional and transformational leadership.

Transactional Leadership	**Transformational Leadership**
• Develops on man's desire to complete a job and make a living. • Dealing with power and position, politics and perks. • Work mired in daily affairs. • Target on short-term goal orientation • Focuses on tactical issues. •Relying on the human relations to lubricate human interactions. • Follows and fulfils role expectations by striving to work effectively within current systems. • Supports structures and systems that reinforce the bottom line, maximize efficiency, and ensure achievements on short-term objectives.	• Develops on a man's desire for meaning. • Dealing with purpose and values, morals and ethics. • Works extraordinarily in daily affairs • Target on long-term goal orientation without compromising human values and principles. • Focuses on achieving missions and strategies. •Releases human potential – identifying and developing new talent. • Job creativity and innovativeness to make it more inspiring and challenging. • Standardize the procedures and systems to strengthen overarching values and goals.

Sources: Epstein (2005)

2.4.3 The Leadership Grid

The Leadership Grid is a combination of two components: leadership theory and managerial practices by Blake and McCanse (1991). The Leadership Grid methodology was a proceeding to Blake and Mouton (1978) Sales/Objections Grid. Blake and Mouton (1978) developed the Managerial Grid approach by developing notion of behavioral scientists from Rensis Likert to the practice of management. This approach first appeared in the 1960s in management theory literature (Blake and Mouton, 1978). The study was conducted at Ohio State University and at the University of Michigan in the 1940s. It attempted to investigate the behavioral characteristics of successful leaders. In the study, the two fundamental drivers involved in the managerial behavioral are task oriented and people oriented. Blake and Mouton (1978) argued that both fundamental drivers are equally important to achieve higher performance and optimizing productivity. The design of the Managerial Grid Model enhances leaders' understanding on how leader's dominant style of leading helps the organization to achieve their mission and vision. To obtain the behavioral framework, the two variables of "concern for production" and "concern for people" were plotted on a grid that consist of nine degrees of concern for each, from "1" indicating a low level of concern, to "9" indicating a high level of concern. The five positions on the grid represents five differing managerial behavior patterns.

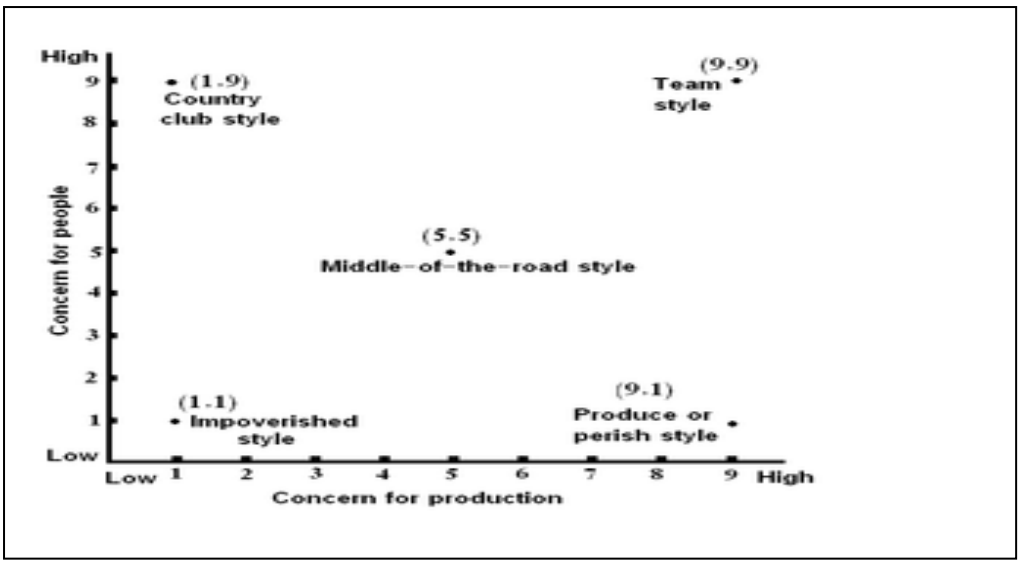

Figure 2.1
The managerial grid
Adapted from Blake, R. R., & Mouton, J. S. (1964). The managerial grid. Houston, TX: Gulf.

The leadership style in The leadership Grid comprise of: Country Club Style (1,9), Team Management (9,9), Middle-of-the-road style (5,5), Impoverished Style (1,1), and Produce or Perish Style (9,1) as in figure 2.1. According to Blake and Mounton (1991), Country Club Style produces "thoughtful attention to the needs of people for satisfying relationships leads to comfortable, friendly organization atmosphere and work tempo". Team Management style performing when "work accomplishment is from committed people; interdependence through a common stake in organization purpose leads to relationships of trust and respect". Middle-of-the-road style is applicable when "adequate organizational performance is possible through balancing the necessity to get out work with maintaining morale of people at a satisfactory level. Impoverished Management includes "exertion of minimum effort to get required work done is appropriate to sustain organizational leadership". Produce and Perish style is defined as "the efficiency in operations result from arranging conditions of work in such a way that human elements interfere the least".

Generally, a leader typically has a dominant style, which is based on their leadership ability and backup style (Blake & McCanse, 1991). Indeed, leaders with several styles depending on whom he/she was working with at that time would have the most opportunistic via interchangeable style. Thus, the Managerial Grid, provides a platform to leaders focusing not only on the human side of the management equation, but also to identify the ways to alter their managerial strategy based on resources and circumstances.

Thus, in the managerial grid developed by Blake and McCanse (1991), it concludes that effective leader works with a group of people to complete the task assigned to them. Blake and McCanse (1991) theory illustrated that the best manager with (9,9) uses team management as an effective leadership practice model. This type of leadership develops the relationship with regards to trust and respect that results in commitment between the organization, employees and its leaders (Blake & McCanse, 1991).

On the other hand, Kouzes and Posner (2003a) explained how a leader transforms to be committed, while Mowday, Porter and Steers (1979) emphasize on the level of employee's commitment in an organization. It helps to model committed behavior for followers to imitate.

The importance of correlating the theory of Kouzes and Posner (2003a) and organizational commitment model of Mowday, Porter, and Steers (1979) is because the combination shows the benefit of having committed leaders and committed follower with common goals. This is basically explained by Blake and McCanse

(1991) 9, 9 leadership model:

> *"Visionary leadership, management by principle, standards of excellence. Inspiration for creativity, problem solving, team orientations, clear expectations, open discussion of issues, challenging goals, share values, concentration on what's right, and confrontation". (p. 233).*

The above models explained the consistency compared with Kouzes and Posner (2003a) five leadership practices that is:

> *"Model the way, inspire a shared vision, challenge the process, enable others to act, and encourage the heart". (p. 14)*

There is limited support of Kouzes and Posner (2003a) theory associated with transactional theory because leaders have separate but related purposes (p. 153). But, Kouzes and Posner (2003a) explained many inter-relations towards transformational leadership due to the moral standpoint, the ability to apply blending knowledge between leaders and followers and the ability of raising followers' motivational levels via interaction. Indirectly, this explain the similar elements compared between Blake and McCanse (1991) 9, 9 behavior and Kouzes and Posner leadership practices theorem.

On the other hand, Kouzes and Posner five leadership theory that may be consistent with the situational leadership theory developed by Hersey and

Blanchard. (1982) This model explains the exemplary mode leaders have to consistently apply with the five practices / transformational leadership model, and yet in a given situation may switch to another leadership style.

Burns (1978), Bass (1990), Hibert and Klatt (2001), Northouse (2004), and Kouzes and Posner (2007) showed the application in the process of leadership development that consists of the moral element. Kouzes and Posner (2003a) have different opinion on the knowledge of Burns (1978) when explaining the moral element of leadership. One of the main reasons may be that Kouzes and Posner model do not have the intent to condemn any of the previous theories of leadership as the main intention is to focus on developing exemplary leaders.

2.5 Relationship between Leadership Practices and Organizational Commitment

The importance of the several discussions pertaining to the topics in leadership theories is to provide a broadcast elucidation on how the Five Leadership Practices of Kouzes and Posner (1987) integrate with leadership theories. The leadership practices challenge some other theories while some complements with others.

The Five leadership practices (Kouzes & Posner, 1987) are: (a) Modeling the way - The first model of the five leadership practices is where leaders must “model the way” to gain respect from followers or organizational members (Kouzes & Posner, 2003a). This model is created to find the right interacting way and to get the

respect from followers to lead through direct individual involvement and action. The leaders must always have a firm, clear and care idea about what to achieve. Follower must able to ascertain their values and then express those values in their own style; (b) Inspire the shared vision – leaders passionately believe that they can make a difference. Leaders must let the followers to have a clear idea about what to achieve in future and what the organization will be in future. It creates a belief and commitment to the vision that ignites the flame of inspiration; (c) Challenging the process – leaders will always look at the risk and opportunity as a challenge and motivates others to continue the battle despite oppositions and setbacks. Leaders pay much attention to the capacity of follower constituent to take control of challenging situations and become capable of committing to change; (d) Enable others to act – by developing trust among leaders and followers. Leaders promote a sense of reciprocity and a feeling of "working as a team, share pain and happiness together". Leaders work to strengthen others to deliver on the promises they make, and (e) Encourage the heart – appreciating and rewarding followers who participate together on the task given that could strengthen follower's self-determination and developing their competence. Each of the leadership practices will be investigated one-by-one in order to ascertain the correlation within the organizational commitment level of the consulting engineers.

In many leadership studies, Kouzes and Posner (2003a) is commonly used as a reference (Grafton, 2009). Kouzes and Posner (2003a) focus on the actions of the leader as a person of commitment. The Leadership Practices Inventory (LPI) developed by Kouzes and Posner is the most commonly used tools to measure leader's performance in an organization. While in organizational commitment,

Mowday, Porter and Steers (1979) conducted many investigations to ascertain the commitment level of the employees in an organization. Many researchers have tested the usefulness of the Five Leadership Practices and the organizational commitment of organizational members especially leaders and managers (Grafton, 2009). Loke (2001) in studying on nurse manager identified that there is a statistical correlation between Kouzes and Posner's five leadership practices and organizational commitment. Stonestreet (2002) identified a determined positive association between Kouzes and Posner's five leadership practices and organizational commitment via a study on North American automobile manufacturing industry. William (2009) studied the relationship of leadership practices and organizational commitment of 754 out of 811 of the University's MBA alumni who graduated from the year of 2000 through 2004 from a small Iowa University's MBA graduates. It was found that there is a significant and moderately strong association between the leadership practices of leaders within organizations employing the small private Iowa University's MBA graduates and the organizational commitment of those MBA graduates.

Johari, Abdullah, Osman, Sapuan, Mariun, Jaafar, Omar, and Rosnah (2002) explained that the positive perception of an engineer could increase engineer's performance in an organization in Malaysia. However, Johari, Abdullah, Osman, Sapuan, Mariun, Jaafar, Omar, and Rosnah (2002) did not mention whether the correlation of positive perception could affect the organizational's commitment in consulting engineering firms. Malik, Danish, and Munir (2011) identified the positive correlation on workplace satisfaction to organizational commitment in engineering industry. The study only showed significant correlation of workplace

satisfaction with pay satisfaction and job security factors that will increase the commitment in an organization.

Lo, Ramayah, and Min (2009) focused on the impact of organizational commitment in the manufacturing industry. Lo, Ramayah, and Min (2009) obtained 156 respondents who voluntarily participated in this study and found that transactional and transformational leadership have positive correlation with the level of commitment in an organization but the impact is stronger for transactional style. But due to the limitation of the study, Lo, Ramayah, and Min (2009) suggested the future studies should focus on different leadership styles.

Although there is a large amount of academic research investigation on employee leadership practices and level of organizational commitment, it is assumed to be reported as part of employees' commitment level in an organization (Eslami & Gharakhani, 2012). The lack of investigation especially on consulting engineering industry with respect to consulting engineer's perception on organization's leadership ability and the level of organizational commitment is now needed (Jeremy, 2010).

Based on the literature review, a hypothesis is developed for the main focus on the study considering the use of Leadership Practice (Kouze & Porsner, 1987) and Organizational Commitment (Mowday, Steers & Porter, 1979). Kouzes and Posner (2003a) assert that the five leadership practices are "common to personal best leadership experiences (Kouzes & Posner 2003a).

2.6 Hypotheses of Leadership Practices and Organizational Commitments

Current studies using Leadership Practices Inventory (LPI) has carried out on 120 MBA students who studied in a small private West Coast Universities in USA (Woods, 2007). The research was then extended by investigating 3000 manager's leadership practices in various industries. Another study completed by William (2009) also using five leadership practices to determine the correlation between the level of organizational commitment of the small private Iowa University's MBA graduates in their working place and the perceived leadership practices within the organization. Thus, this dissertation will extend the study into engineering related organization with the use of the leadership practice inventory to investigate the perception of consulting engineers towards their organization in engineering industry in Malaysia.

The research question will be: What is the relation between perceived leadership practices and organizational commitment of consulting engineers based on Kouzes and Posner (2003a). The description of leadership practices as follows:

a. modeling the way

Model the Way. The leaders in this model sit at the top of the organization. She/he is the department head that can establish a way of acting and conducting the affairs of the organization. Within this organizational structure, the subordinates or followers look at the leaders to model their behavior. The leader on his part uses his personal beliefs as well as the beliefs, values and mission of the organization. Kouzes and Posner (2003a) conclude that leaders are to "stand up for their beliefs".

That is to say that it should become clear and evident to each follower what a leader believe, the words that the leader speaks and the actions that the leader takes. From this statement, the researcher develops the research question that is related to this study:-

How would the perceived leadership practice - model the way relates with consulting engineer's organizational commitment at their working place?

b. inspiring a shared vision

Inspire a Shared Vision. Every follower has his/her personal set of hopes and dreams. Thus, it is a challenging job for the leader to assist the followers to help each other to achieve their vision. In order to make it happen, the leader has to understand the follower's needs which is entrusted into his or her care. The way a leader presents the vision of the future should make a lot of difference in determining the realization of the vision that will come true. That is to say, the followers will personally give themselves to help the leaders to accomplish the vision (Kouzes & Posner, 2003a). For the vision to have a chance to come true, it must be compatible with the followers' needs within the organizational context. Thus, the researcher developed the research question that is related to this study:-

How would the perceived leadership practice - inspire a shared vision relates with consulting engineer's organizational commitment at their working place?

c. challenging the process

Challenge the Process. The exemplary leader, not only recognize the organization and its members but also realizes that the current status quo in the organization may not be the best choice. Thus the leader will set up a new venture into a new territory with the organization and its members. Some of which may comprise new ways of thinking, new products, new markets and/or new strategies. The leader will broaden and reformulate the limits of the organization and its members. Kouzes and Posner (2003a) found that leaders are pioneers within the operating environment of the organization. From this statement, the researcher develops the research question that is related to this study:-

How would the perceived leadership practice - challenge the process* relates with *the consulting engineer's organizational commitment at their working place?

d. enabling others to act

Enable Others to Act. An exemplary leader may acquire two approaches. First approach is by inspiring collaboration between organizational members and the second approach is by establishing an environment of trust within the organization (Kouzes & Posner, 2003a). The function of enabling others to act helps to incorporate the leader modeling the way for team members. This can be done by empowering team members and by being trustworthy. This manner will facilitate others to act. From this statement, the researcher develops the research question that is related to this study:-

How would the perceived leadership practice - enable others to act relates with consulting engineer's organizational commitment at their working place?

e. encouraging the heart

Encourage the Heart. It is crucial that each organizational member's focus is maintained throughout the organization. This calls for a personal impetus in the form of a motivational force. A good leader realizes this and will utilize a motivational force to guide organizational members through long and short-term strategies and challenges the organization's operating environment. The leader needs to acknowledge and celebrate the achievements and accomplishments of the organizational members (Kouzes & Posner, 2003a). From this statement, the researcher developed the research question that is related to this study:-

How would the perceived leadership practice - encourage the heart relates with consulting engineer's organizational commitment at their working place?

Kouzes and Posner (1987) developed ten leadership commitment components which are important process that clarifies the five leadership practices. Kouzes and Posner (2003a) describe the ten leadership commitments as being embedded in the Five Leadership Practices of exemplary leaders. Each of the ten commitments associated with the leadership practices has a course of action that needs to be taken to support one of the five leadership practices.

Several researchers had used LPI for their extensive research. One of it was Jones (1999) that involved 150 pastors who obtained positive correlation in five leadership practices. Leroy (2005) using five leadership practices that measure the transformational leadership practices and the result showed positive relationship using LPI as an instrument. Chen (2007) adapted the five leadership practices to explore principal's leadership practices as perceived by teachers and its possible influence on student's achievement. The result showed positive relationship of using LPI as an instrument as well.

McNeese, Smith, and Donna (1996) also found a positive relationship between Kouzes and Posner's leadership practices and organizational commitment as developed by Mowday, Steers, and Porter (1982). The research carried out by McNeese, Smith, and Donna (1996) covers 41 departmental people who are in-charge and 610 employees who work with WA Hospital in Seattle. The study showed a positive association between these two instruments. Rengpian (2007) studied on how the perceived leadership practices and organizational commitment influence the satisfaction of the subordinates in Thai Stock Brokerage firms. The result showed that each of the five leadership practices have a significant correlation with organizational commitment and subordinates' satisfaction with supervisors.

The organizational commitment developed by Mowday, Steers, and Porter (1979) comprise of 15 questionnaires that answers the following three measures. It involves:

a. a strong belief in and acceptance of the organization's goals and values
b. a willingness to exert considerable effort on behalf of the organization, and

c. a strong desire to maintain membership in the organization.

The measures were created with regards to commitment that is still being a generally affective reaction to the organization rather that specifically to the work (Cook, 2010)

A strong support from Carless (2001) who studied on 1400 participants from an international finance company obtained the positive relationship between five leadership practices and transformational leadership. He concluded that:

> *"The finding of this study suggests that while it is possible to distinguish conceptually among separate transformational leader behaviors, either these distinctions are not captured by the LPI or subordinates do not notice the difference." (p. 237)*

Stonestreet (2002) conducted a research to identify the leadership practices and organizational commitment within the North American industry associated with a single employer in one location. The finding explained that the two variables had a statistically significant correlation that can be utilized at the same time in diverse work environments.

2.7 Summary of Chapter 2

The researcher presents related theories in this study. In the literature review, the researcher includes previous studies done on several leadership practices that lead to the use of Kouzes & Posner's leadership practice's index and Mowday, and Steers & Poster's organizational commitment as measurement tools. In chapter 3-Methodolody, the researcher elaborates on the types of tools to be used in this research and also explains the use of the theoretical framework and hypotheses to be tested in this research.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter illustrates the methodology used in the research. The research design in this chapter enables the researcher to identify the independent and dependent variables via developing a sampling frame. The research questions, hypotheses statement of the study and instrumentation of the study identifies the population and sample, data collection protocol and rational of using the selected data analysis methods are addressed in this chapter of the dissertation.

This study investigates the perceived leadership practices and organizational commitment of consulting engineers in their working place. The respondents are asked to answer questionnaires relating to the perceived leadership practices of their immediate and the organizational commitment level of the respondents.

3.2 Theoretical Framework

To answer the research question of this study, the determination of independent and dependent variables (Figure 2.2) are as follows:

Independent Variables

i) Using Leadership practices Index theory from Kouzes and Posner (1987) comprising: (a) modeling the way; (b) inspiring a shared

vision; (c) challenging the process; (d) enabling others to act; and (e) encouraging the heart.

Dependent Variables

i) Using Organizational commitment from Mowday, Steers, and Porter (1979) comprising: (a) a strong belief in and acceptance of the organization's goals and values; (b) a willingness to exert considerable effort on behalf of the organization; and (c) strong desire to maintain membership in the organization.

The theoretical framework of this study is shown in figure 3.1.

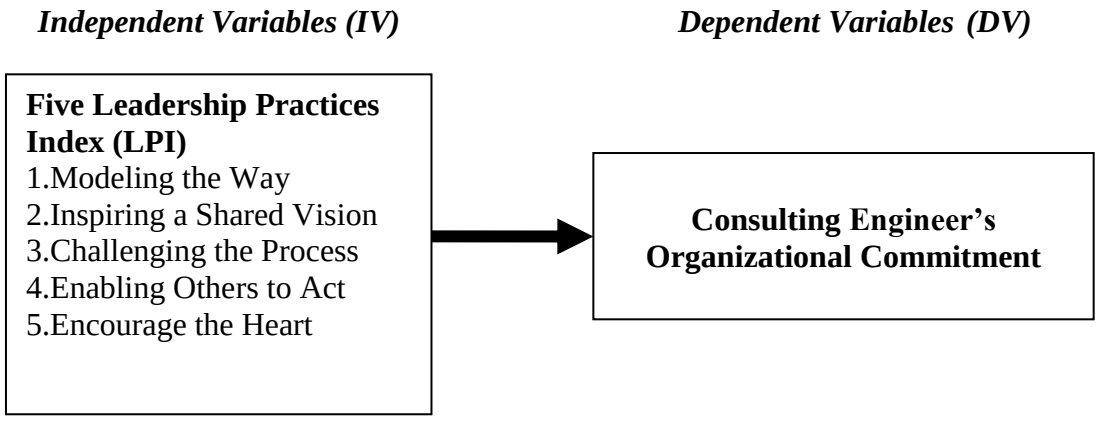

Figure 3.1
Theoretical Framework Model

3.3 Hypotheses

The study incorporates the following hypotheses using the Leadership Practices (Kouze & Porsner, 1987) and Organizational Commitment from (Mowday, Steers, & Porter, 1979):-

Ha1: There is a significant relation between Perceived Leadership Practice – *model the way* and consulting engineer's organizational commitment at their working place.

Ha2: There is a significant relation between Perceived Leadership Practice – *inspire a shared vision* and consulting engineer's organizational commitment at their working place.

Ha3: There is a significant relation between Perceived Leadership Practice – challenge the process and consulting engineer's organizational commitment iattheir working place.

Ha4: There is a significant relation between Perceived Leadership Practice – *enable others to act* and consulting engineer's organizational commitment at their working place.

Ha5: There is a significant relation between Perceived Leadership Practice – *encourage the heart* and consulting engineer's organizational commitment at their working place.

Ha6: There is a significant difference on consulting engineer's organizational commitment based on gender.

Ha7: There is a significant difference of consulting engineer's organizational commitment based on age.

Ha8: There is a significant difference of consulting engineer's organizational commitment based on years of working experience.

3.4 Research Design

Research design enables the researcher to strategically plan his research to answer the research questions effectively and able to come with the purpose of the hypotheses. It will also explain the plan for collecting and utilizing data in such a way that the data gathered is sufficient to answer the hypotheses correctly. The components of the overall research design are basically divided as in Table 3.1.

Table 3.1
Research design components

Research design	Description	Research method use
Type of study	Simple random sampling technique is used to estimate future events and quantities	Quantitative analysis
Purpose of the study	To investigate engineer's perceived leadership practices and organizational commitment level in an engineering firm	Descriptive and hypotheses testing
Type of investigation	To identify the relation between consulting engineers perceived leadership practices and organizational commitment of consulting engineer’s	Relationship study
Study setting	Requests opinion from consulting engineers. Study is conducted based on different engineering field in the engineering industry	Field study and self-administered
Unit of analysis	Data is obtained from engineers who works under ACEM	Individuals response

3.5 Population and Sampling

3.5.1 Population

The population of this study is a group of consulting engineers working under the Association of Consulting Engineers Malaysia’s (ACEM) panel of consulting firm. Consulting engineers are professionals who comply highly with the standards as stated in the Board of Engineer, Malaysia. These groups of respondents

are required to display high ethical standards while performing engineering practices (ACEM, 2011).

The ACEM comprises of 116 companies, registered with ACEM as per ACEM directory in the year 2011. The ACEM directory is recommended by the Board of Engineer Malaysia to ease the meeting with respondents. They are 2,940 engineers working under these panels and the companies are involved in Civil, Structural, geotechnical, mechanical, electrical and others engineering discipline in the engineering consulting firms as shown in Appendix G.

3.5.2 Sampling

The objective of this section is to ascertain that there are sufficient number of data from the population to answer the correlation between the variables of consulting engineer's perceived leadership practices and organizational commitment in engineering industry. Samples are necessary due to a large population of the target group and also it consumes time and cost for study (Field, 2013). Sample is a subset that represents the whole population of the study group. In this case, the target population is chosen from ACEM directory. The directory indicates 116 companies as registered consulting firm with ACEM. Hence, simple random sampling method is used as the researcher obtained sampling frame from ACEM which is the most efficient method among all probability design. Simple random sampling is a method whereby samples are chosen randomly from the sampling frame (Sekaran, 2013). Furthermore, the total number of respondents requires in this study is based on determination of sampling size generalized by Krejcie and Morgan

(1970). Krejie and Morgan sampling determination is a commonly used tool in research activities (Sekaran, 2013). The total numbers of sampling collected for this study are 394 respondents from the total of 2,940 consulting engineers (Krejcie & Morgan, 1970; Sekaran, 2013). As the populations consist of consulting engineers who worked in ACEM registered companies, the researcher has first collected the sample based on the simple random sampling which is suitable to be used. Indeed, the first response from the respondents were not achieved the target samples, thus, the researcher had sent to all the companies and requested the respondents to reply within the one month period. All the data collected within the one month period is used for analysis purposes.

3.6 Quantitative Methods

3.6.1 Research Instrumentation

The questionnaires used to investigate the consulting engineer's perceived leadership practices and organizational commitment in their working place context comprise of two instruments namely, (a) Leadership Practices Inventory, LPI (Kouzes & Posner, 1987), and (b) Organizational Commitment Questionnaire, OCQ (Mowday, Steers, & Poster, 1979). Section 1 helps to collect respondent’s demographic variables. Section 2 identifies engineer’s perceived leadership practices index and Section 3 identifies organizational commitment level of engineers in their work place.

i. Section 1 (Questionnaire) – Personal information

This section requires the respondent to fill in their age, gender and work experience.

ii. Section 2 (Questionnaire) – Leadership Practices Index (LPI)

Leadership Practices Inventory developed by Kouzes and Posner (1987) comprises five main leadership practices (a) Modeling the way, (b) Inspiring a shared vision, (c) Challenging the process, (d) Enabling others to act, and (e) Encouraging the heart. These five leadership practices enable people to get thing done with extraordinary performance in an organization. Kouzes and Posner (2003a) found more than 150 dissertations that have utilized LPI as a measurement tool in his research paper. It provides a strong justification and appropriateness for the choice of LPI to investigate perceived leadership behavior of engineers in an organization.

This section adapted from Kouzes and Posner (1987) was meant to access and observe leadership practices in an organization. The instrument comprises of 30 items to answer 5 independent variables as shown in Table 3.2.

Table 3.2
Variables and item numbers in LPI

Independent variable	**Item No.**
Modeling the way	1, 6, 11, 16, 21, and 26
Inspiring a shared vision	2, 7, 12, 17, 22, and 27
Challenging the process	3, 8, 13, 18, 23, and 28
Enabling others to act	4, 9, 14, 19, 24, and 29
Encouraging the heart	5, 10, 15, 20, 25, and 30

Each leadership practice comprises of six questionnaires used to identify the beliefs of staff in an organization about the leaders' use of the five practices in their organization. Kouzes and Posner (1987) developed a ten point Likert-type scale.

However, due to the culture differences in Malaysia, it differentiates the number of Likert Scale points used in this study (Brown, 2011). The researcher uses seven point scales for this study as shown in Table 3.3.

Table 3.3
Likert scale use in LPI

Description	Likert scale
Never	1
Seldom	2
Once a while	3
Occasionally	4
Often	5
Very frequent	6
Always	7

Each question comprise of at least one score point and at most 7 score points. Kouzes and Posner (1987) deliberate on the LPI questionnaire to distinguish the score separately, ranging from a minimum six points to sixty points. If a leader obtains the score points of sixty on every behavior, it means the engineer's perceived leadership in an organization is mathematically proven as a perfect leader by receiving a perfect score.

iii. Section 3 (Questionnaire) – Organizational Commitment Questionnaire (OCQ)

On Organizational commitment, the Questionnaires (OCQ) was developed by Mowday, Steers, and Poster (1979). The OCQ contains 15 items that have been designed to measure a person’s affective organizational commitment. Six out of fifteen questions were phrased in a negative manner and therefore the scored shall be calculated reversely as shown in Table 3.4.

Table 3.4
Phrases in OCQ

Independent variable	**Item No.**
Positive phrase	1, 2, 4, 5, 6, 8, 10, 13, 14
Negative Phrase	3, 7, 9, 11, 12, 15

This procedure enables to mitigate the response bias while answering the questions. The bias occurs when a participant may just wish to fill in the blank without reading and understanding the questions (Bert, 2010). The team's response being set as a negative phrase is treated as being one in the same for the mean score across all survey items. Mowday, Steers, and Poster (1979) 7-point Likert-type scale is designed to appraise the commitment level in an organization as shown in Table 3.5.

Table 3.5
Likert scale use in OCQ

Description	**Likert scale**
Strongly disagree	1
Moderately disagree	2
Slightly disagree	3
Neither disagree nor agree	4
Slightly agree	5
Moderately agree	6
Strongly agree	7

There are three aspects of commitment in an organization as incorporated in Organizational Commitment Questionnaires (OCQ) central to Mowday, Steers , and Poster (1979) definition. They are (a) a strong belief in and acceptance of the organization's goals and value (b) a willingness to exert considerable effort on behalf of the organization, and (c) a strong desire to maintain membership in the organization. These three aspects of commitment in an organization are used to measure OCQ (Mowday, Steers, and Poster, 1979).

OCQ was and still is being widely use as a one-dimensional organizational commitment instrument by many (Meyer, Stanley., Hersovitc, & Topolnytsky, 2002). In the 1970's, researchers Kerr and Jermeir (1978) used OCQ to scrutinize 113 police officer's commitment level. John and James (1975) used OCQ for the study of 295 salesmen in three organizations on the correlation between organizational share to job satisfaction, anxiety-stress, and performance. Mathieu and Zajac (1990) found that OCQ has been used to analyze organizational commitment in 103 out of 174 studies done by other researchers. Cohen (2007) meta-analysis applied OCQ to examine the differences in the lengths of time elapsed between the measurement of commitment level in an organization and interaction with the employees' careers desire in moderating the commitment-turnover relationship.

3.6.2 Pilot Study

Pilot testing using Personal Information Questionnaire, Leadership Practices Inventory (Kouzes & Posner, 1987), and the Organizational Commitment Questionnaire (Mowday, Steers, & Poster, 1979) is conducted on 12 respondents from ACEM, Malaysia who are the target population of this research. The questionnaires sent to the consulting engineers via email, obtained from ACEM directory (ACEM, 2011). The results showed consistent, in which 12 respondents were having the same response on the negative questions.

The reliability coefficient for each component ranges above the reliability level of 0.6 (Kouzes & Posner, 2003). Aiken (as cited in Kouzes & Posner, 2003a)

proves that Akin's acceptability level of 0.6. The researcher used 0.6 as the cutoff point to increase the reliability in this study. The reliability test for the pilot test in this study is as shown in Table 3.6.

Table 3.6
Pilot test reliability statistics for LPI

Cronbach's Alpha	Number of Items
.832	12

According to Mowday, Porter, and Steers (1982) and Kouzes and Posner (2003a), the range of study shows the OCQ Cronbach's Alpha's range is from 0.82 to 0.93. The result shown is above the Akin's acceptability level of 0.60. The Mowday internal reliability range was obtained from at least eight different studies from various industries / fields. The reliability test for OCQ is shown in Table 3.7.

Table 3.7
Pilot test reliability statistics for OCQ

Cronbach's Alpha	Number of Items
.791	12

3.6.3 Data Analysis

In this research, a total of eight hypotheses are analyzed. The first five hypotheses are to ascertain the influences between the independent variables (five leadership practices) and the dependent variable (organizational commitment). The last three hypotheses are to investigate the differences between independent variable (demographic) and dependent variable (organizational commitment) which is as follows:-

i) First hypothesis

The relation of the consulting engineer's perceived leadership practices to measure the commitment level at their working place and the consulting engineer's perception about their organizational leader's use of the leadership practices: Modeling the way is evaluated using Spearman-rho analysis.

ii) Second hypothesis

The relation of the consulting engineer's perceived leadership practices to measure the commitment level at their working place and the consulting engineer's perception about their organizational leader's use of the leadership practices: Inspire the vision is evaluated using Spearman-rho analysis.

iii) Third hypothesis

The relation of the consulting engineer's perceived leadership practices to measure the commitment level at their working place and the consulting engineer's perception about their organizational leader's use of the leadership practices: Challenge the process is evaluated using Spearman-rho analysis.

iv) Forth hypothesis

The relation of the consulting engineer's perceived leadership practices to measures the commitment level at their working place and the consulting engineer's perception about their organizational leader's use of the leadership practices: Enable others to act is evaluated using Spearman-rho analysis.

v) Fifth hypothesis

The relation of the consulting engineer's perceived leadership practices to measure the commitment level at their working place and the consulting engineer's perception about their organizational leader's use of the leadership practices: Encourage the heart is evaluated using Spearman-rho analysis.

vi) Sixth hypothesis

The difference of consulting engineer's organizational commitment according to their gender is evaluated using a Wilcoxon signed rank test.

vii) Seventh hypothesis

The difference of consulting engineer's organizational commitment according to their age is evaluated using Kruskal wallis test.

viii) Eighth hypothesis

The difference of consulting engineer's organizational commitment according to their working experience is evaluated using Kruskal wallis test.

As the first five hypotheses do not deal with critical issues such as safety and health, it is feasible to use 0.05 significant levels for this study. This level is strongly recommended by Cooper and Schindler (2010). According to them, 0.05 is the most commonly used significant level used in a research paper. Because, if it occurs with a larger number of alpha value, the smaller the chance of getting type II errors which may cause a failure and a need to reject false null hypothesis (Coakes & Steed, 2007; Cooper & Schindler, 2010).

3.6.4 Reliability Test

Reliability test is one of the important elements used to identify the consistency, reproducibility, or an examinee's performance on the test (Sekaran, 2013). Reliability test is a measurement tool used to ensure the consistency and stability of various items in the instrument. It indicates the extent to which the data collected is free from bias (Sekaran, 2013). According to Aiken (as cited in Kouzes & Posner, 2002), the reliability test above 0.6 is considered as an acceptable result. One of the commonly used is Cronbach's alpha (Coakes & Steed, 2007). The Cronbach's alpha interpreted correlation coefficient ranges from 0 to 1. The higher the value indicated the reliability of the data obtained increases. In this study, the Cronbach's Alpha results obtained from Kouzes and Posner LPI measurement result shows the reliability coefficients as follow:-

a. Model = 0.88
b. Inspire = 0.92
c. Challenge = 0.89
d. Enable = 0.88
e. Encourage = 0.92

Note: adapted from Kouzes and Posner (2002). The Leadership Practices Inventory: Theory and evidence behind the five practices of exemplary leaders.

3.6.5 Validity Test

The scope of Validity is a test measure of a data derived for the purpose of the study. It is essential to carry out this test to ensure that the data is valid to use and the result is accurately applied and interpreted. In other words, the degree to which a test procedure accurately measures for what it was designed to measure (Issac & Michael, 1997). Construct validity and Content validity are used in this study.

- **Construct Validity** is a test illustrating the intended hypothetical constructs between the test scores and the prediction of a theoretical trait. Intelligence test is one measurement instrument used to construct validity (Sekaran, 2013). Factor analysis was used to measure the construct validity to identify the degree to which measures of the same constructs are highly correlated (Hair, 2008).

- **Content Validity** addresses the match between the test questions and the content or subject area they intend to assess. The matching concept is sometimes referred to as an alignment, while the content or subject area of the test may be referred to as a performance domain. The higher the scale items represent in the domain of the concept being measured, the greater the content validity (Sekaran, 2003).

Factor analysis

In this research, factor analysis is conducted to test the items validity. Factor analysis is "a class of procedures primarily used for data reduction and organizational" (Field, 2013). The appropriateness of factor model is important to test before conducting further data analysis. Factor analysis technique has three main uses. They are: a) to understand the structure of a set of variables (e.g. Spearman and Thurstone used factor analysis to try to understand the structure of the latent variable intelligence); b) to construct a questionnaire to measure an underlining variable (e.g., one of researchers might design a questionnaire to measure burnout); and c) to reduce a data set to a more manageable size while retaining as much of the original information as possible (Field, 2013).

3.6.6 Data Processing Analysis

Statistical Package for Social Science (SPSS) is a data management and analysis product developed by SPSS Inc. The data collected will be analyzed using the SPSS version 17.0 for Windows to conduct a statistical analysis for this study.

3.6.6.1 Normality Test Assumption

The assumption of normality is a prerequisite for many inferential statistical techniques and there are two main ways to determine if a sample comes from a normally distributed population. De Veaux (2005) recommended that independent assumption, equal variance assumption, linearity assumption and normality

assumption must be determined for normality. Normality refers to the shape of the data distribution for an individual metric variable and its correspondence to the normal distribution (Hair, 2008). There are two ways to interpret normality data: Graphical methods (histogram) and numerical methods (Skewness and Kurtosis). Graphical methods interpret the finding by using histogram.

Skewness and Kurtosis is useful to measure the distribution of scores as approximately normal and there is also a need to look at the values of skewness and Kurtosis in the output. Positive values of skewness indicate too many low scores in the distribution, whereas negative values indicate a build-up of high scores (Field, 2013). Positive values of Kurtosis indicate a pointy and heavy – tailed distribution, whereas negative values indicate a flat and high – tailed distribution (Field, 2013). The further the value is from zero, the more likely it is that the data are not normally distributed (Field, 2013).

3.6.6.2 Multicolinearity

One of the main problem when comes to the data analysis is the consistency of the data collected. The term multicolinearity refers to a situation in which there is an exact or nearly exact linear relation among two or more of the input variables (independent variable) (Hawking & Pendleton, 1983). The effect of high levels of multicolinearity is to make it difficult or impossible for the regression equation to separate the independent contributions of the independent or predictor variables (Hair, Black, Babin, Anderson, & Tatham, 2008). There are two common measures for assessing colinearity, which are tolerance and variance inflation factors (VIF).

According to Zikmund (2010), a maximum acceptable VIF value would be 5.0, and anything greater than 5.0 indicates an inconsistency in multicolinearity, and if the tolerance value is greater than 0.1, it would also show the inconsistency in multicolinearity.

3.4.6.3 Descriptive Statistics

Descriptive statistics is the discipline of quantitatively describing the main features of a collection of data, or the quantitative description itself. Descriptive statistics involves manipulation of raw data into meaningful information to describe a set of factors in a situation (Sekaran, 2013). The researcher use descriptive analysis to measure the variables based on the respondents demographic factors, which is age, gender, and year of work experience. Descriptive statistics provides useful information related to the sample characteristics and general pattern of typical respondents.

3.4.6.4 Inferential Statistics

This study investigates the influence between Perceived Leadership Practices and consulting engineer's organizational commitment in their work place. Inferential statistics is used for this study. Inferential statistics involved manipulation of data to identify the relationship between two variables, differences in a variable among different subgroups, and how independent variables explain the variance in a dependent variable (Sekaran, 2013). Inferential types of analysis used in this study

are Independent Wilcoxon signed rank test, Kruskal wallis test and Spearman-rho correlations analysis.

i) Test of Association – Spearman Correlation

A common test for non-parametric to measure the dependence variables between quantities and acquired by separating the covariance of the two variables by standard deviation is Spearman-rho correlation test (Malhorta, Hall, Shaw, & Oppenheim, 2009). The correlation indicates the strength and direction of linear association between two random variables (Sekaran, 2013). The Spearman-rho test is done to analyze hypothesis 1 to hypothesis 6.

ii) Test of Differences – Kruskal-wallis and Wilcoxon Signed Rank

The differences of consulting engineer's organizational commitment which is based on gender is determined by using Wilcoxon signed rank test. Wilcoxon signed rank test is non-parametric statistical test used when comparing two related samples (Hair, Black, Babin, Anderson, & Tatham, 2008).

Another instrument uses to measure the differences of consulting engineer's organizational commitment which is based on age and years of working experience is using Kruskal wallis test (Hair, Black, Babin, Anderson, & Tatham, 2008). It examines whether the numerical difference in the means is significantly different from zero as postulated in the null hypothesis. In most of the cases, the calculation of the two sample means may not be exactly equal. It is subjected to the observed differences that occurred by chance or likely to exist in the population (Oppenheim,

2009; Zikmund, 2010). Wilcoxon signed rank test was done to analyze hypothesis 6 and Kruskal-wallis test was done to analyze hypothesis 7 and hypothesis 8.

3.7 Data Collection Method

The questionnaires were sent to the participants via electronic mail where the address was obtained from ACEM directory. The participants of this survey are volunteers. Appendix 3.1 provides the permission letter to participant for their consent to use their data information for the study. Prior to accessing the survey, participants will be requested to tick on the box, which allows the participants to agree or allow the researcher to use their data for research purpose. All returned data will be treated as highly confidential and it is STATED as "ONLY USED FOR ACADEMIC RESEARCH PURPOSE". The questionnaire does not require the participants to indicate their name in any section or any form.

3.7.1 Data Collection Procedures

The researcher assumed that the respondents who have answered the questionnaire are the person to whom the researcher wishes to email to. The respondents understand the questions and answer with the most accurate answer.

Three sections of questionnaires will be sent to participant via the electronic mailing address obtained from ACEM directory. The questionnaires were sent to the respondents email address to those who had obtained at least a Bachelor degree in Engineering and worked with one of the company which is a member of ACEM.

The respondents were required to complete each questionnaire and return back to the researcher via the electronic mailing address provided to the participants. Every participant received the same format of questionnaires and the same returned date so that the researcher is able to complete in a timely manner.

First set of questionnaires was sent to the respondent in the consulting firms' number ending with 1, 3, 5, 7, and 9. It comprises of 58 companies and these 58 Companies were requested to reply within 20 days. After 20 days, 155 respondents returned the questionnaires. Later, the same set of questionnaires was sent to the consulting firm number ending with 2, 4, 6, 8, and 0. It also comprises of 58 companies and these 58 companies were also requested to reply within 20 days. The number of returned questionnaires was 173. To increase the response rate, two reminder emails was sent to the participants requesting them to respond on the questionnaires that was emailed to them. 66 respondents returned the questionnaire within 20 days. This makes the total to 394 respondents as the mentioned sampling size. (Krejcie & Morgan, 1970; Sekaran, 2013).

3.8 Summary of Chapter 3

In this chapter, the researcher addresses the quantitative and co-relational study in order to examine the correlation between perceived leadership practices and organizational commitment of engineers in their work place. Research using perceived leadership practices and organizational commitment is emergent. Given the limited research directed to consulting engineering industry in Malaysia (Muthuveloo & Raduan, 2005), this research provides a substantive scholastic as well as industry knowledge value.

In chapter 4, the research will focus on the findings based on quantitative analysis study, and whether to accept or reject the hypotheses.

CHAPTER 4

RESULTS AND DATA ANALYSIS

4.1 Introduction

This chapter presents the results and data analysis of this study. The intention helps to expand the theoretical knowledge by correlating the leadership practices as developed by Kouzes and Posner (1987) are described as modeling the way; inspiring a shared vision; challenging the process; enabling others to act; and encouraging the heart, and organizational commitment developed by Mowday, Steers, and Poster (1979). It includes a strong belief in and acceptance of the organization's goals and values; a willingness to exert considerable effort on behalf of the organization; and a strong desire to maintain membership in the organization in engineering firms in Malaysia. For each of the eight hypotheses, the relevant statistical analysis is presented.

The respondents of the study involved consulting engineers who worked with the companies registered under ACEM. The sample was drawn from the population of 2940 engineers in ACEM. The samples involve at least 341 respondents (Krejcie & Morgan, 1970 as cited in Sekaran, 2013) who were requested to answer all the questionnaires provided to them.

There were 394 feedbacks from the respondents. All the survey questionnaires that were sent to the respondents email address were obtained from ACEM directory and consist of:-

a. A cover letter explained to the respondent about this study (See Appendix A).
b. An informed consent form to obtain permission for collecting information from the respondent (See appendix B)
c. A welcome communiqué. The sheet explains to the respondent to provide necessary information (See appendix C).
d. A personal information questionnaire (See Appendix D).
e. The Leadership Practices Index (LPI) observer questionnaire (See Appendix E)
f. The Organizational Commitment Questionnaire (See Appendix F).

From the total of 394 respondents, there were 7 responded questionnaires which cannot be used due to:-

a. Incomplete data in the returned questionnaire.
b. Invalid as the respondent did not thoroughly read and answer the question.

Hence, the final sample for the study contained a total of 394 individuals who returned the survey forms. Table 4.1 illustrates the survey response summary for this study.

Table 4.1
Survey response summary

Item	Description	N
1	Total members (companies) in ACEM	116
2	Returned survey from respondents	394
3	Incomplete returned survey from respondents	7
4	Net fully complete (good) surveys	387

The 387 acceptable questionnaires were utilized for the analysis and presentation of findings in the demographic section, descriptive statistics section, and hypotheses testing section.

4.2 Statistical Assumption

4.2.1 Normality Statistical Assumption

Kolmogorov-Smirnov test (KS test) is used to investigate the normality based on:-

H_0: that the data are normally distributed (Field, 2013)

Table 4.2 illustrates the normality test using numerical methods. The SPSS output in shows all the probabilities value = 0.000 are less than 0.05.

Table 4.2
Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
modelling	.266	387	.000	.636	387	.000
inspiring	.228	387	.000	.710	387	.000
challenging	.228	387	.000	.710	387	.000
enabling	.219	387	.000	.721	387	.000
encouraging	.197	387	.000	.718	387	.000
OC	.129	387	.000	.822	387	.000

a. Lilliefors Significance Correction

To check the distribution scores is approximately normal, a common rule of thumb test is to run descriptive statistics to get skewness and kurtosis value, and then divide these with the standard errors. The skewness in Table 4.2 shows all six constructs have a skewness value which is close to zero ($p<0.05$), it indicates that the data of this study is not normally distributed. Thus, non-parametric test is adopted for following analysis (Field, 2013).

4.2.2 Linearity Statistical Assumption

The present study assessed linearity by running a series of simple linear regression analysis and to examine the residuals using Normal Probability P-P Plot (Hair, 2008). The results for linearity assumptions are presented in Figure 4.1. The points not in a straight line around the diagonal axis and the spread of the residual were not uniformed when plotted against the predicted value so as violate the assumptions on the randomness of the residuals. Meanwhile, the points are clustered loosely around the diagonal line also meant that the data is reasonably not normally distributed. Therefore, non-parametric test was adopted.

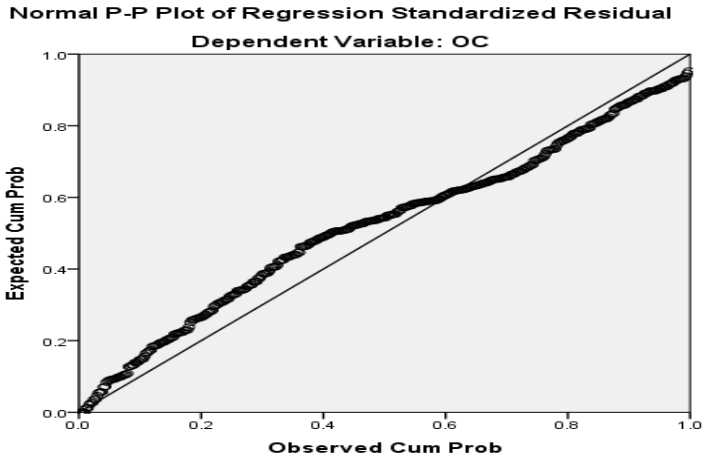

Figure 4.1
Normal P-P plot of OCQ
Source: Developed for this research

4.2.3 Test of Multicolinearity

The lack of multicolinearity issues will improve the independent assumption in the examination of assumptions. High correlation among independent variables can be an issue in calculating the independent regression coefficients for the correlated independent variables (Hair, 2008). Multicolinearity can be read from the Variance Inflation Factor (VIF) and Tolerance Value (TV).

The multicolinearity assessment using tolerance and VIF is presented in Table 4.3, the values for Variance Inflation Factor (VIF) for all the constructs were less than 10.0 (in this table the range was from 1.552 to 1.740) and the range of Tolerance Values was from 0.575 to 0.644 which is bigger than 0.10 (Hair, 2008). Hence, the tolerance values and VIF of the present study indicates an absence of

multi co-linearity problem. The independence assumption met depended on the multi co-linearity analysis.

Table 4.3
Multicolinearity analysis

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.153	.428		9.703	.000		
	modelling	-.016	.071	-.014	-.223	.824	.644	1.552
	challenging	.073	.078	.061	.936	.350	.575	1.740
	enabling	.258	.078	.212	3.298	.001	.600	1.668
	encouraging	-.015	.080	-.012	-.191	.849	.619	1.615

a. Dependent Variable: OC

In summary, although the data do not have multicolinearity. However, it is considered not normal because of KS test ($p<0.05$) indicating that non-normality (Refer to KS Test in Table 4.2. Thus non-parametric statistical analysis is conducted further.

4.3 Descriptive Statistics

4.3.1 Frequency Distribution for Demographic Variables

According to Field (2013), demographic data serves as an important purpose that illustrates the nature of sample and acts as a reference to compare the population in a study. This study includes three demographic data elements. They are age, gender and years of experience. The demographic data through the use of SPSS is illustrated below.

Gender

Table 4.4 illustrates the gender demographics for the respondents. From the 387 respondents, there were 317 male respondents and 70 respondents were female. It showed that male participants completed 81.9% of the engineer's organizational commitment questionnaires, while female participants completed 18.1% of the questionnaires. In Table 4.5 the male participants obtained highest score of 105 while female obtained highest score of 103. The mean score for engineer's organizational commitment for male participants was 87 compare to female was 91.5.

Table 4.4
Frequency distribution for gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0 Male	317	81.9	81.9	81.9
	1 Female	70	18.1	18.1	100.0
	Total	387	100.0	100.0	

Table 4.5
Consulting engineer's organizational commitment statistics for gender

	0	1
Gender	Male	Female
N	317	70
Percent of total N	81.9%	18.1%
Mean	87	91.5
Standard deviation	9.25	9.45
Minimun	65	69
Maximum	105	103

Age

Demographic data for respondent's age is divided into seven subsets as illustrated in Table 4.6 and Figure 2. The largest subset is the ages ranging from 25 and below and the group consists of 81 respondents or 20.9%. The second-most responded age group is from 26-30, consisting of 79 respondents or 20.4%, followed by the age group of 31-35 with 75 respondents or 19.4%, 51-55 with 55 respondents or 14.2%, 36-40 with 42 respondents or 10.9%, 41-45 with 37 respondents or 9.6%, and the lowest respondents age is 46-50 consisting of 18 respondents or 4.7% only.

Table 4.6

Frequency distribution for age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<= 25	81	20.9	20.9	20.9
	26-30	79	20.4	20.4	41.3
	31-35	75	19.4	19.4	60.7
	36-40	42	10.9	10.9	71.6
	41-45	37	9.6	9.6	81.1
	46-50	18	4.7	4.7	85.8
	51-55	55	14.2	14.2	100.0
	Total	387	100.0	100.0	

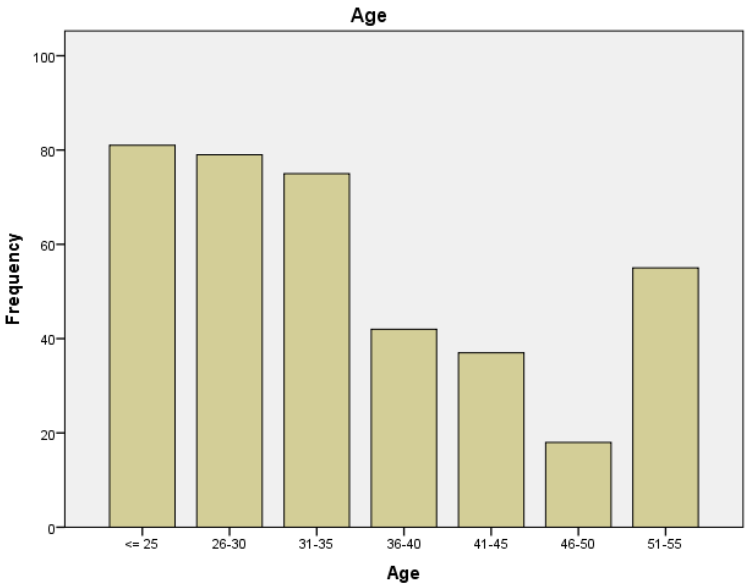

Figure 4.2
Frequency distribution for age
Source: Developed for this research

Years of experience

‘

387 responded to the demographic variables, years of service and are presented in Table 4.13 and Figure 4.11. The years of service is divided into seven subsets. The highest frequency is the group who has 1-5 years of working experience with 107 respondents or 27.6%, followed by the group with 11-15 years with 79 respondents or 20.4%, less than 1 year with 53 respondents or 13.7%, 16-20 years working experience with 49 respondents or 12.7 6-10 years with 38 respondents or 9.8%, 21-25 years with 37 respondents or 9.6% and the lowest is 26-30 with 24 respondents or 6.2% only.

Table 4.7

Frequency distribution for years of working experience

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	< 1 yr	53	13.7	13.7	13.7
	1-5 yr	107	27.6	27.6	41.3
	6-10 yr	38	9.8	9.8	51.2
	11-15 yr	79	20.4	20.4	71.6
	16-20 yr	49	12.7	12.7	84.2
	21-25 yr	37	9.6	9.6	93.8
	26-30 yr	24	6.2	6.2	100.0
	Total	387	100.0	100.0	

Figure 4.3

Frequency distribution for years of working experience

Source: Developed for this research

4.3.2 Frequency Distribution for Dependent Variables and Independent Variables

4.3.2.1 Frequency Distribution for LPI

Modelling the way

Based on data collection and data analysis, the respondent's distribution for six questions for modelling the way is shown.

Table 4.8
Sets a personal example of what he/she expects of others (m1)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	never	1	.3	.3	.3
	seldom	9	2.3	2.3	2.6
	once in a while	2	.5	.5	3.1
	occasionally	3	.8	.8	3.9
	often	194	50.1	50.1	54.0
	very frequent	110	28.4	28.4	82.4
	always	68	17.6	17.6	100.0
	Total	387	100.0	100.0	

Table 4.8 illustrates that from 387 respondents, 194 or 50.1% of respondents selected their superior where they work, as "often" sets a personal example of what he/she expects of others. 110 or 28.4% of respondents selected "very frequent" and 68 or 17.6% of respondents selected "always". From this analysis, it explains that more than half of the respondents selected their superior where they work as setting a personal example of what he/she expects of others.

Table 4.9
Spends time and energy making certain that the people he/she works with adhere to principles and standards that we have agreed on (m2)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	1	.3	.3	.3
	Seldom	8	2.1	2.1	2.3
	once in a while	3	.8	.8	3.1
	occasionally	4	1.0	1.0	4.1
	Often	237	61.2	61.2	65.4
	very frequent	95	24.5	24.5	89.9
	Always	39	10.1	10.1	100.0
	Total	387	100.0	100.0	

Table 4.9 illustrates that from 387 respondents, 237 or 61.2% of respondents selected their superior where they work, as “often” spends time and energy in making certain that the people he/she works with adhere to principles and standards that they have agreed on. 95 or 24.5% of respondents selected “very frequent” and 39 or 10.1% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work as often spending time and energy making certain that the people he/she works with adhere to the principles and standards that they have agreed on.

Table 4.10
Follows through on promises and commitments he/she makes (m3)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	2	.5	.5	.5
	Seldom	7	1.8	1.8	2.3
	once in a while	3	.8	.8	3.1
	occasionally	6	1.6	1.6	4.7
	Often	189	48.8	48.8	53.5
	very frequent	116	30.0	30.0	83.5
	Always	64	16.5	16.5	100.0
	Total	387	100.0	100.0	

Table 4.10 illustrates that from 387 respondents, 189 or 48.8% of respondents selected their superior where they work, “often” follows through on promises and commitments he/she makes. 116 or 30% of respondents selected “very frequent” and 64 or 16.5% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work as following through on promises and commitments he/she makes.

Table 4.11
Asks for feedback on how his/her actions affect other people's performance (m4)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	never	1	.3	.3	.3
	seldom	8	2.1	2.1	2.3
	once in a while	3	.8	.8	3.1
	occasionally	3	.8	.8	3.9
	often	177	45.7	45.7	49.6
	very frequent	151	39.0	39.0	88.6
	always	44	11.4	11.4	100.0
	Total	387	100.0	100.0	

Table 4.11 illustrates that from 387 respondents, 177 or 45.7% of respondents selected their superior where they work, “often” asks for feedback on how his/her actions affect other people's performance. 151 or 39% of respondents selected “very frequent” and 44 or 11.4% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work, asks for feedback on how his/her actions affect other people's performance.

Table 4.12
Builds consensus around a common set of values for running our organization (m5)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	2	.5	.5	.5
	Seldom	6	1.6	1.6	2.1
	once in a while	3	.8	.8	2.8
	occasionally	7	1.8	1.8	4.7
	Often	196	50.6	50.6	55.3
	very frequent	123	31.8	31.8	87.1
	Always	50	12.9	12.9	100.0
	Total	387	100.0	100.0	

Table 4.12 illustrates that from 387 respondents, 196 or 50.6% of respondents selected their superior where they work, “often” builds consensus around a common set of values for running the organization. 123 or 31.8% of respondents selected “very frequent” and 50 or 12.9% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work, builds consensus around a common set of values for running the organization.

Table 4.13
Is clear about his/her philosophy of leadership (m6)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	never	1	.3	.3	.3
	seldom	8	2.1	2.1	2.3
	once in a while	3	.8	.8	3.1
	occasionally	12	3.1	3.1	6.2
	often	136	35.1	35.1	41.3
	very frequent	192	49.6	49.6	91.0
	always	35	9.0	9.0	100.0
	Total	387	100.0	100.0	

Table 4.13 illustrates that from 387 respondents, 136 or 35.1% of respondents selected their superior where they work, “often” is clear about his/her philosophy of leadership. 192 or 49.6% of respondents selected “very frequent” and 35 or 9% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work is clear about his/her philosophy of leadership.

Inspiring a shared vision

Based on data collection and analysis, the respondent’s distribution for six questions for inspiring a shared vision is shown.

Table 4.14
Talks about future trends that will influence how our work gets done (i1)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	never	1	.3	.3	.3
	seldom	3	.8	.8	1.0
	once in a while	7	1.8	1.8	2.8
	occasionally	1	.3	.3	3.1
	often	199	51.4	51.4	54.5
	very frequent	144	37.2	37.2	91.7
	always	32	8.3	8.3	100.0
	Total	387	100.0	100.0	

Table 4.14 illustrates that from 387 respondents, 199 or 51.4% of respondents selected their superior where they work, “often” talks about future trends that will influence how work gets done. 144 or 37.2% of respondents selected “very frequent” and 32 or 8.3% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work, talks about future trends that will influence how work gets done.

Table 4.15
Describes a compelling image of what our future could be like (i2)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	seldom	4	1.0	1.0	1.0
	once in a while	7	1.8	1.8	2.8
	occasionally	3	.8	.8	3.6
	often	191	49.4	49.4	53.0
	very frequent	127	32.8	32.8	85.8
	always	55	14.2	14.2	100.0
	Total	387	100.0	100.0	

Table 4.15 illustrates that from 387 respondents, 191 or 49.4% of respondents selected their superior where they work, "often" describes a compelling image of what the future could be like. 127 or 32.8% of respondents selected "very frequent" and 55 or 14.2% of respondents selected "always". From this analysis, it explains that more than half of the respondents selected their superior where they work, describes a compelling image of what the future could be like.

Table 4.16
Appeals to others to share an exciting dream of the future (i3)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	never	1	.3	.3	.3
	seldom	5	1.3	1.3	1.6
	once in a while	5	1.3	1.3	2.8
	occasionally	3	.8	.8	3.6
	often	147	38.0	38.0	41.6
	very frequent	147	38.0	38.0	79.6
	always	79	20.4	20.4	100.0
	Total	387	100.0	100.0	

Table 4.16 illustrates that from 387 respondents, 147 or 38% of respondents selected their superior where they work, "often" appeals to others to share an exciting dream of the future. 147 or 38% of respondents selected "very frequent"

and 79 or 20.4% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work, appeals to others to share an exciting dream of the future.

Table 4.17
Shows others how their long-term interests can be realized by enlisting in a common vision (i4)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	seldom	8	2.1	2.1	2.1
	once in a while	3	.8	.8	2.8
	occasionally	3	.8	.8	3.6
	often	153	39.5	39.5	43.2
	very frequent	154	39.8	39.8	82.9
	always	66	17.1	17.1	100.0
	Total	387	100.0	100.0	

Table 4.17 illustrates that from 387 respondents, 147 or 38% of respondents selected their superior where they work, “often” shows others how their long-term interests can be realized by enlisting in a common vision. 147 or 38% of respondents selected “very frequent” and 79 or 20.4% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work, shows others how their long-term interests can be realized by enlisting in a common vision.

Table 4.18
Paints the "Big Picture" of what we aspire to accomplish (i5)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	1	.3	.3	.3
	Seldom	2	.5	.5	.8
	once in a while	8	2.1	2.1	2.8
	occasionally	4	1.0	1.0	3.9
	Often	183	47.3	47.3	51.2
	very frequent	121	31.3	31.3	82.4
	Always	68	17.6	17.6	100.0
	Total	387	100.0	100.0	

Table 4.18 illustrates that from 387 respondents, 183 or 47.3% of respondents selected their superior where they work, “often” paints the "Big Picture" of what we aspire to accomplish. 121 or 31.3% of respondents selected “very frequent” and 68 or 17.6% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work, paints the "Big Picture" of what we aspire to accomplish.

Table 4.19
Speaks with genuine conviction about the higher meaning and purpose of our work (i6)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	never	1	.3	.3	.3
	seldom	5	1.3	1.3	1.6
	once in a while	4	1.0	1.0	2.6
	occasionally	2	.5	.5	3.1
	often	177	45.7	45.7	48.8
	very frequent	149	38.5	38.5	87.3
	always	49	12.7	12.7	100.0
	Total	387	100.0	100.0	

Table 4.19 illustrates that from 387 respondents, 177 or 45.7% of respondents selected their superior where they work, “often” speaks with genuine

conviction about the higher meaning and purpose of our work. 149 or 38.5% of respondents selected “very frequent” and 49 or 12.7% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work, speaks with genuine conviction about the higher meaning and purpose of work.

Challenging the process

Based on data collection and analysis, the respondent’s distribution for six questions for challenging the process is shown.

Table 4.20
Seeks out challenging opportunities that test his/her own skills and abilities (c1)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	never	1	.3	.3	.3
	seldom	5	1.3	1.3	1.6
	once in a while	5	1.3	1.3	2.8
	often	145	37.5	37.5	40.3
	very frequent	197	50.9	50.9	91.2
	always	34	8.8	8.8	100.0
	Total	387	100.0	100.0	

Table 4.20 illustrates that from 387 respondents, 145 or 37.5% of respondents selected their superior where they work, “often” seeks out challenging opportunities that test his/her own skills and abilities. 197 or 50.9% of respondents selected “very frequent” and 34 or 8.8% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work, seeks out challenging opportunities that test his/her own skills and abilities.

Table 4.21
Challenges people to try out new and innovative ways to do their work (c2)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	1	.3	.3	.3
	Seldom	3	.8	.8	1.0
	once in a while	7	1.8	1.8	2.8
	occasionally	2	.5	.5	3.4
	Often	205	53.0	53.0	56.3
	very frequent	107	27.6	27.6	84.0
	Always	62	16.0	16.0	100.0
	Total	387	100.0	100.0	

Table 4.21 illustrates that from 387 respondents, 205 or 53% of respondents selected their superior where they work, “often” challenges people to try out new and innovative ways to do their work. 107 or 27.6% of respondents selected “very frequent” and 62 or 16% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work, challenges people to try out new and innovative ways to do their work.

Table 4.22
Searches outside the formal boundaries of his/her organization for innovative ways to improve what we do (c3)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	never	1	.3	.3	.3
	seldom	4	1.0	1.0	1.3
	once in a while	6	1.6	1.6	2.8
	occasionally	2	.5	.5	3.4
	often	167	43.2	43.2	46.5
	very frequent	136	35.1	35.1	81.7
	always	71	18.3	18.3	100.0
	Total	387	100.0	100.0	

Table 4.22 illustrates that from 387 respondents, 167 or 43.2% of respondents selected their superior where they work, “often” searches outside the formal boundaries of his/her organization for innovative ways to improve what they do. 136 or 35.1% of respondents selected “very frequent” and 71 or 18.3% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work, searches outside the formal boundaries of his/her organization for innovative ways to improve what they do.

Table 4.23
Asks "What can we learn?" when things don't go as expected (c4)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	never	1	.3	.3	.3
	seldom	4	1.0	1.0	1.3
	once in a while	6	1.6	1.6	2.8
	occasionally	4	1.0	1.0	3.9
	often	157	40.6	40.6	44.4
	very frequent	157	40.6	40.6	85.0
	always	58	15.0	15.0	100.0
	Total	387	100.0	100.0	

Table 4.23 illustrates that from 387 respondents, 157 or 40.6% of respondents selected their superior where they work, “often” asks "What can we learn?" when things don't go as expected. 157 or 40.6% of respondents selected “very frequent” and 58 or 15% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work, asks "What can we learn?" when things don't go as expected.

Table 4.24
Makes certain that we set achievable goals, make concrete plans, and establish measurable milestones for the projects and programs that we work on (c5)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	never	1	.3	.3	.3
	seldom	6	1.6	1.6	1.8
	once in a while	4	1.0	1.0	2.8
	occasionally	4	1.0	1.0	3.9
	often	158	40.8	40.8	44.7
	very frequent	117	30.2	30.2	74.9
	always	97	25.1	25.1	100.0
	Total	387	100.0	100.0	

Table 4.24 illustrates that from 387 respondents, 158 or 40.8% of respondents selected their superior where they work, “often” makes certain that we set achievable goals, make concrete plans, and establish measurable milestones for the projects and programs that we work on. 117 or 30.2% of respondents selected “very frequent” and 97 or 25.1% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work, makes certain that we set achievable goals, make concrete plans, and establish measurable milestones for the projects and programs that we work on.

Table 4.25
Experiments and takes risks, even when there is a chance of failure (c6)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	never	1	.3	.3	.3
	seldom	2	.5	.5	.8
	once in a while	8	2.1	2.1	2.8
	occasionally	1	.3	.3	3.1
	often	151	39.0	39.0	42.1
	very frequent	185	47.8	47.8	89.9
	always	39	10.1	10.1	100.0
	Total	387	100.0	100.0	

Table 4.25 illustrates that from 387 respondents, 151 or 39% of respondents selected their superior where they work, “often” experiments and takes risks, even when there is a chance of failure. 185 or 47.8% of respondents selected “very frequent” and 39 or 10.1% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work, experiments and takes risks, even when there is a chance of failure.

Enabling others to act

Based on data collection and analysis, the respondent’s distribution for six questions for enabling others to act is shown.

Table 4.26
Develops cooperative relationships among the people he/she works with (e1)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	never	1	.3	.3	.3
	seldom	6	1.6	1.6	1.8
	once in a while	1	.3	.3	2.1
	occasionally	5	1.3	1.3	3.4
	often	145	37.5	37.5	40.8
	very frequent	162	41.9	41.9	82.7
	always	67	17.3	17.3	100.0
	Total	387	100.0	100.0	

Table 4.26 illustrates that from 387 respondents, 145 or 37.5% of respondents selected their superior where they work, “often” develops cooperative relationships among the people he/she works with. 162 or 41.9% of respondents selected “very frequent” and 67 or 17.3% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their

superior where they work, develops cooperative relationships among the people he/she works with.

Table 4.27
Actively listens to diverse points of view (e2)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	never	1	.3	.3	.3
	seldom	4	1.0	1.0	1.3
	once in a while	3	.8	.8	2.1
	occasionally	2	.5	.5	2.6
	often	184	47.5	47.5	50.1
	very frequent	134	34.6	34.6	84.8
	always	59	15.2	15.2	100.0
	Total	387	100.0	100.0	

Table 4.27 illustrates that from 387 respondents, 184 or 47.5% of respondents selected their superior where they work, “often” actively listens to diverse points of view. 134 or 34.6% of respondents selected “very frequent” and 59 or 15.2% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work, actively listens to diverse points of view.

Table 4.28
Treats others with dignity and respect (e3)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	seldom	6	1.6	1.6	1.6
	once in a while	1	.3	.3	1.8
	occasionally	4	1.0	1.0	2.8
	often	163	42.1	42.1	45.0
	very frequent	130	33.6	33.6	78.6
	always	83	21.4	21.4	100.0
	Total	387	100.0	100.0	

Table 4.28 illustrates that from 387 respondents, 163 or 42.1% of respondents selected their superior where they work, “often” treats others with dignity and respect. 130 or 33.6% of respondents selected “very frequent” and 83 or 21.4% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work, treats others with dignity and respect.

Table 4.29
Supports the decisions that people make on their own (e4)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	never	1	.3	.3	.3
	seldom	6	1.6	1.6	1.8
	once in a while	1	.3	.3	2.1
	occasionally	4	1.0	1.0	3.1
	often	150	38.8	38.8	41.9
	very frequent	157	40.6	40.6	82.4
	always	68	17.6	17.6	100.0
	Total	387	100.0	100.0	

Table 4.29 illustrates that from 387 respondents, 150 or 28.8% of respondents selected their superior where they work, “often” supports the decisions that people make on their own. 157 or 40.6% of respondents selected “very frequent” and 68 or 17.6% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work is supports the decisions that people make on their own.

Table 4.30
Gives people a great deal of freedom and choice in deciding how to do their work (e5)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	never	1	.3	.3	.3
	seldom	4	1.0	1.0	1.3
	once in a while	4	1.0	1.0	2.3
	often	159	41.1	41.1	43.4
	very frequent	124	32.0	32.0	75.5
	always	95	24.5	24.5	100.0
	Total	387	100.0	100.0	

Table 4.30 illustrates that from 387 respondents, 159 or 41.1% of respondents selected their superior where they work, "often" gives people a great deal of freedom and choice in deciding how to do their work. 124 or 32% of respondents selected "very frequent" and 95 or 24.5% of respondents selected "always". From this analysis, it explains that more than half of the respondents selected their superior where they work, gives people a great deal of freedom and choice in deciding how to do their work.

Table 4.31
Ensures that people grow in their jobs by learning new skills and developing themselves (e6)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Never	2	.5	.5	.5
	Seldom	1	.3	.3	.8
	once in a while	5	1.3	1.3	2.1
	Often	164	42.4	42.4	44.4
	very frequent	167	43.2	43.2	87.6
	Always	48	12.4	12.4	100.0
	Total	387	100.0	100.0	

Table 4.31 illustrates that from 387 respondents, 164 or 42.4% of respondents selected their superior where they work, "often" ensures that people

grow in their jobs by learning new skills and developing themselves. 167 or 43.2% of respondents selected “very frequent” and 48 or 12.4% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work, ensures that people grow in their jobs by learning new skills and developing themselves.

Encouraging the heart

Based on data collection and analysis, the respondent’s distribution for six questions for encouraging the heart is shown.

Table 4.32
Praises people for a job well done (enc1)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	never	1	.3	.3	.3
	seldom	7	1.8	1.8	2.1
	occasionally	4	1.0	1.0	3.1
	often	144	37.2	37.2	40.3
	very frequent	177	45.7	45.7	86.0
	always	54	14.0	14.0	100.0
	Total	387	100.0	100.0	

Table 4.32 illustrates that from 387 respondents, 144 or 37.2% of respondents selected their superior where they work, “often” praises people for a job well done. 177 or 45.7% of respondents selected “very frequent” and 54 or 14% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work, praise people for a job well done.

Table 4.33
Makes it a point to let people know about his/her confidence in their abilities (enc2)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	never	1	.3	.3	.3
	seldom	3	.8	.8	1.0
	once in a while	4	1.0	1.0	2.1
	occasionally	1	.3	.3	2.3
	often	199	51.4	51.4	53.7
	very frequent	119	30.7	30.7	84.5
	always	60	15.5	15.5	100.0
	Total	387	100.0	100.0	

Table 4.33 illustrates that from 387 respondents, 199 or 51.4% of respondents selected their superior where they work, “often” makes it a point to let people know about his/her confidence in their abilities. 119 or 30.7% of respondents selected “very frequent” and 60 or 15.5% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work, makes it a point to let people know about his/her confidence in their abilities.

Table 4.34
Makes sure that people are creatively rewarded for their contributions to the success of projects (enc3)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	never	1	.3	.3	.3
	seldom	3	.8	.8	1.0
	once in a while	4	1.0	1.0	2.1
	occasionally	3	.8	.8	2.8
	often	166	42.9	42.9	45.7
	very frequent	145	37.5	37.5	83.2
	always	65	16.8	16.8	100.0
	Total	387	100.0	100.0	

Table 4.34 illustrates that from 387 respondents, 166 or 42.9% of respondents selected their superior where they work, “often” makes sure that people are creatively rewarded for their contributions to the success of projects. 145 or 37.5% of respondents selected “very frequent” and 65 or 16.8% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work, makes sure that people are creatively rewarded for their contributions to the success of projects.

Table 4.35
Publicly recognizes people who exemplify commitment to shared values (enc4)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	never	1	.3	.3	.3
	seldom	5	1.3	1.3	1.6
	once in a while	2	.5	.5	2.1
	occasionally	2	.5	.5	2.6
	often	171	44.2	44.2	46.8
	very frequent	136	35.1	35.1	81.9
	always	70	18.1	18.1	100.0
	Total	387	100.0	100.0	

Table 4.35 illustrates that from 387 respondents, 171 or 44.2% of respondents selected their superior where they work, “often” publicly recognizes people who exemplify commitment to shared values. 136 or 35.1% of respondents selected “very frequent” and 70 or 18.1% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work, publicly recognizes people who exemplify commitment to shared values.

Table 4.36
Finds ways to celebrate accomplishments (enc5)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	never	1	.3	.3	.3
	seldom	4	1.0	1.0	1.3
	once in a while	3	.8	.8	2.1
	occasionally	3	.8	.8	2.8
	often	179	46.3	46.3	49.1
	very frequent	125	32.3	32.3	81.4
	always	72	18.6	18.6	100.0
	Total	387	100.0	100.0	

Table 4.36 illustrates that from 387 respondents, 179 or 46.3% of respondents selected their superior where they work, “often” finds ways to celebrate accomplishments. 125 or 32.3% of respondents selected “very frequent” and 72 or 18.6% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work, finds ways to celebrate accomplishments.

Table 4.37
Gives the members of the team lots of appreciation and support for their contributions (enc6)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	never	1	.3	.3	.3
	seldom	2	.5	.5	.8
	once in a while	5	1.3	1.3	2.1
	often	236	61.0	61.0	63.0
	very frequent	114	29.5	29.5	92.5
	always	29	7.5	7.5	100.0
	Total	387	100.0	100.0	

Table 4.37 illustrates that from 387 respondents, 236 or 61% of respondents selected their superior where they work, “often” gives the team members lots of appreciation and support for their contributions. 114 or 29.5% of respondents

selected “very frequent” and 29 or 7.5% of respondents selected “always”. From this analysis, it explains that more than half of the respondents selected their superior where they work, gives the members of the team lots of appreciation and support for their contributions.

4.3.2.2 Frequency Distribution for OCQ

Based on data collection and analysis, the respondent’s distribution for fifteen questions for engineer’s organizational commitment is shown.

Table 4.38
I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful (oc1)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	3	.8	.8	.8
	moderately disagree	3	.8	.8	1.6
	slightly disagree	6	1.6	1.6	3.1
	neither disagree nor agree	32	8.3	8.3	11.4
	slightly agree	32	8.3	8.3	19.6
	moderately agree	164	42.4	42.4	62.0
	strongly agree	147	38.0	38.0	100.0
	Total	387	100.0	100.0	

Table 4.38 illustrates that from 387 respondents, 32 or 8.3% of respondents selected, “slightly agree” that they are willing to put in a great deal of effort beyond that is normally expected in order to help the organization to be successful. 164 or 42.4% of respondents selected “moderately agree” and 147 or 38% of respondents selected “strongly agree”. From this analysis, it explains that more than half of the respondents selected that they agree and are willing to put in a great deal of effort beyond that is normally expected in order to help the organization to be successful.

Table 4.39
I talk up this organization to my friends as a great organization to work for (oc2)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	3	.8	.8	.8
	moderately disagree	1	.3	.3	1.0
	slightly disagree	4	1.0	1.0	2.1
	neither disagree nor agree	5	1.3	1.3	3.4
	slightly agree	68	17.6	17.6	20.9
	moderately agree	212	54.8	54.8	75.7
	strongly agree	94	24.3	24.3	100.0
	Total	387	100.0	100.0	

Table 4.39 illustrates that from 387 respondents, 68 or 17.6% of respondents selected, “slightly agree” that they do talk about the organization to their friends as a great organization to work for. 212 or 54.8% of respondents selected “moderately agree” and 94 or 24.3% of respondents selected “strongly agree”. From this analysis, it explains that more than half of the respondents selected do agree that they talk about the organization to their friends as a great organization to work for.

Table 4.40
I feel very loyal to this organization (oc3)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	3	.8	.8	.8
	moderately disagree	1	.3	.3	1.0
	slightly disagree	2	.5	.5	1.6
	neither disagree nor agree	17	4.4	4.4	5.9
	slightly agree	89	23.0	23.0	28.9
	moderately agree	125	32.3	32.3	61.2
	strongly agree	150	38.8	38.8	100.0
	Total	387	100.0	100.0	

Table 4.40 illustrates that from 387 respondents, 89 or 23% of respondents selected, “slightly agree” that they feel very loyal to this organization. 125 or 32.3%

of respondents selected “moderately agree” and 150 or 38.8% of respondents selected “strongly agree”. From this analysis, it explains that more than half of the respondents selected agree that they feel very loyal to this organization.

Table 4.41
I would accept almost any type of job assignment in order to keep working for this organization (oc4)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	3	.8	.8	.8
	moderately disagree	1	.3	.3	1.0
	slightly disagree	23	5.9	5.9	7.0
	neither disagree nor agree	44	11.4	11.4	18.3
	slightly agree	63	16.3	16.3	34.6
	moderately agree	129	33.3	33.3	68.0
	strongly agree	124	32.0	32.0	100.0
	Total	387	100.0	100.0	

Table 4.41 illustrates that from 387 respondents, 63 or 16.3% of respondents selected “slightly agree” that they would accept almost any type of job assignment in order to keep working for this organization. 129 or 33.3% of respondents selected “moderately agree” and 124 or 32% of respondents selected “strongly agree”. From this analysis, it explains that more than half of the respondents selected agree that they would accept almost any type of job assignment in order to keep working for this organization.

Table 4.42
I find that my values and the organization's values are very similar (oc5)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	3	.8	.8	.8
	moderately disagree	3	.8	.8	1.6
	slightly disagree	6	1.6	1.6	3.1
	neither disagree nor agree	38	9.8	9.8	12.9
	slightly agree	126	32.6	32.6	45.5
	moderately agree	140	36.2	36.2	81.7
	strongly agree	71	18.3	18.3	100.0
	Total	387	100.0	100.0	

Table 4.42 illustrates that from 387 respondents, 126 or 32.6% of respondents selected “slightly agree” that their values and the organization's values are very similar. 140 or 36.2% of respondents selected “moderately agree” and 71 or 18.3% of respondents selected “strongly agree”. From this analysis, it explains that more than half of the respondents selected agree that their values and the organization's values are very similar.

Table 4.43
I am proud to tell others that I am part of this organization (oc6)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	3	.8	.8	.8
	moderately disagree	2	.5	.5	1.3
	slightly disagree	6	1.6	1.6	2.8
	neither disagree nor agree	16	4.1	4.1	7.0
	slightly agree	47	12.1	12.1	19.1
	moderately agree	160	41.3	41.3	60.5
	strongly agree	153	39.6	39.6	100.0
	Total	387	100.0	100.0	

Table 4.43 illustrates that from 387 respondents, 47 or 12.1% of respondents selected, “slightly agree” that they are proud to tell others that I am part of this

organization. 160 or 41.3% of respondents selected “moderately agree” and 153 or 39.6% of respondents selected “strongly agree”. From this analysis, it explains that more than half of the respondents selected agree that they are proud to tell others that I am part of this organization.

Table 4.44
I could just as well be working for a different organization as long as the type of work is similar (oc7)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	3	.8	.8	.8
	moderately disagree	2	.5	.5	1.3
	slightly disagree	1	.3	.3	1.6
	neither disagree nor agree	47	12.1	12.1	13.7
	slightly agree	91	23.5	23.5	37.2
	moderately agree	132	34.1	34.1	71.3
	strongly agree	111	28.7	28.7	100.0
	Total	387	100.0	100.0	

Table 4.44 illustrates that from 387 respondents, 91 or 23.5% of respondents selected, “slightly agree” that they could not be working for a different organization as long as the type of work is similar. 132 or 34.1% of respondents selected “moderately agree” and 111 or 28.7% of respondents selected “strongly agree”. From this analysis, it explains that more than half of the respondents selected agree that they could not be working for a different organization as long as the type of work is similar.

Table 4.45
This organization really inspires the very best in me in the way of job performance (oc8)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	3	.8	.8	.8
	moderately disagree	2	.5	.5	1.3
	slightly disagree	1	.3	.3	1.6
	neither disagree nor agree	24	6.2	6.2	7.8
	slightly agree	95	24.5	24.5	32.3
	moderately agree	161	41.6	41.6	73.9
	strongly agree	101	26.1	26.1	100.0
	Total	387	100.0	100.0	

Table 4.45 illustrates that from 387 respondents, 95 or 24.5% of respondents selected “slightly agree” that this organization really inspires the very best in me in the way of job performance. 161 or 41.6% of respondents selected “moderately agree” and 101 or 26.1% of respondents selected “strongly agree”. From this analysis, it explains that more than half of the respondents selected agree that this organization really inspires the very best in me in the way of job performance.

Table 4.46
It would take very little change in my present circumstances to cause me to leave this organization (oc9)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	3	.8	.8	.8
	moderately disagree	3	.8	.8	1.6
	neither disagree nor agree	40	10.3	10.3	11.9
	slightly agree	100	25.8	25.8	37.7
	moderately agree	145	37.5	37.5	75.2
	strongly agree	96	24.8	24.8	100.0
	Total	387	100.0	100.0	

Table 4.46 illustrates that from 387 respondents, 100 or 25.8% of respondents selected, “slightly agree” that would take very little change in their

present circumstances to cause them to leave the organization. 145 or 37.5% of respondents selected “moderately agree” and 96 or 24.8% of respondents selected “strongly agree”. From this analysis, it explains that more than half of the respondents selected agree that would take very little change in their present circumstances to cause them to leave this organization.

Table 4.47
I am extremely glad that I chose this organization to work for over others I was considering at the time I joined (oc10)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	3	.8	.8	.8
	moderately disagree	2	.5	.5	1.3
	slightly disagree	4	1.0	1.0	2.3
	neither disagree nor agree	22	5.7	5.7	8.0
	slightly agree	105	27.1	27.1	35.1
	moderately agree	127	32.8	32.8	68.0
	strongly agree	124	32.0	32.0	100.0
	Total	387	100.0	100.0	

Table 4.47 illustrates that from 387 respondents, 105 or 27.1% of respondents selected, “slightly agree” that they are extremely glad that they chose this organization to work for over others I was considering at the time I joined. 127 or 32.8% of respondents selected “moderately agree” and 124 or 32% of respondents selected “strongly agree”. From this analysis, it explains that more than half of the respondents selected agree that they are extremely glad that I chose this organization to work for over others I was considering at the time I joined.

Table 4.48
There's much to be gained by sticking with this organization indefinitely (oc11)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	3	.8	.8	.8
	moderately disagree	1	.3	.3	1.0
	slightly disagree	2	.5	.5	1.6
	neither disagree nor agree	43	11.1	11.1	12.7
	slightly agree	98	25.3	25.3	38.0
	moderately agree	136	35.1	35.1	73.1
	strongly agree	104	26.9	26.9	100.0
	Total	387	100.0	100.0	

Table 4.48 illustrates that from 387 respondents, 98 or 25.3% of respondents selected, “slightly agree” that there's much to be gained by sticking with this organization indefinitely. 136 or 35.1% of respondents selected “moderately agree” and 104 or 26.9% of respondents selected “strongly agree”. From this analysis, it explains that more than half of the respondents selected agree that there's much to be gained by sticking with this organization indefinitely.

Table 4.49
Often, I agree with this organization's policies on important matters relating to its employees (oc12)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	3	.8	.8	.8
	moderately disagree	2	.5	.5	1.3
	slightly disagree	1	.3	.3	1.6
	neither disagree nor agree	8	2.1	2.1	3.6
	slightly agree	98	25.3	25.3	28.9
	moderately agree	150	38.8	38.8	67.7
	strongly agree	125	32.3	32.3	100.0
	Total	387	100.0	100.0	

Table 4.49 illustrates that from 387 respondents, 98 or 25.3% of respondents selected “slightly agree” that often, I agree with this organization's policies on important matters relating to its employees. 150 or 38.8% of respondents selected “moderately agree” and 125 or 32.3% of respondents selected “strongly agree”. From this analysis, it explains that more than half of the respondents selected agree that often, I agree with this organization's policies on important matters relating to its employees.

Table 4.50
I really care about the fate of this organization (oc13)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	3	.8	.8	.8
	moderately disagree	2	.5	.5	1.3
	slightly disagree	1	.3	.3	1.6
	neither disagree nor agree	31	8.0	8.0	9.6
	slightly agree	59	15.2	15.2	24.8
	moderately agree	171	44.2	44.2	69.0
	strongly agree	120	31.0	31.0	100.0
	Total	387	100.0	100.0	

Table 4.50 illustrates that from 387 respondents, 59 or 15.2% of respondents selected, “slightly agree” that they really care about the fate of this organization. 171 or 44.2% of respondents selected “moderately agree” and 120 or 31% of respondents selected “strongly agree”. From this analysis, it explains that more than half of the respondents selected agree that they really care about the fate of this organization.

4.4 Scale Measurement

While continuing the analysis, reliability and validity of the data must be carried out. Good measurement should be both consistent (reliable) and accurate (valid). Although a lack of reliability constitutes a negative evidence for validity, reliability does not in itself imply validity. Reliability is necessary, but not sufficient condition for validity. Hence, the following section will use these two major criteria for evaluating measurement of this report.

4.4.1 Reliability Test for LPI

After collecting the required data, the researcher again conducted a reliability test for the questionnaire utilized by Kouzes and Posner's Five Leadership Practices Inventory (LPI) to ensure the stability and consistency of the instrument measured Field (2013). The data was analyzed on the 387 respondents based on the five leadership practices index constructs.

4.4.1.1 Modelling the Way

Table 4.51
Reliability statistics – Modelling the way

Cronbach's Alpha	N of Items
.835	6

Table 4.52
Item-total statistics – Modelling the way

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Sets a personal example of what he/she expects of others (m1)	27.43	12.095	.639	.802
Spends time and energy making certain that the people he/she works with adhere to principles and standards that we have agreed on (m2)	27.62	12.713	.623	.805
Follows through on promises and commitments he/she makes (m3)	27.44	12.304	.604	.809
Asks for feedback on how his/her actions affect other people's performance (m4)	27.44	12.973	.555	.819
Builds consensus around a common set of values for running our organization (m5)	27.49	12.567	.605	.809
Is clear about his/her philosophy of leadership m6)	27.41	12.579	.625	.805

Table 4.51 illustrates the reliability statistics – Modelling the way with Cronbach's Alpha value of 0.835. However, in Table 4.52, none of the Cronbach's Alpha value "if item deleted" is higher than 0.835. Therefore, no item is to be deleted.

4.4.1.2 Inspiring a Shared Vision

Table 4.53
Reliability statistics – Inspiring a shared vision

Cronbach's Alpha	N of Items
.815	6

Table 4.54
Item-total statistics – Inspiring a shared vision

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Talks about future trends that will influence how our work gets done (i1)	28.05	11.060	.646	.774
Describes a compelling image of what our future could be like (i2)	27.97	11.046	.584	.785
Appeals to others to share an exciting dream of the future (i3)	27.81	10.701	.581	.786
Shows others how their long-term interests can be realized by enlisting in a common vision (i4)	27.86	11.102	.525	.798
Paints the "Big Picture" of what we aspire to accomplish (i5)	27.93	11.059	.544	.794
Speaks with genuine conviction about the higher meaning and purpose of our work (i6)	27.95	10.966	.601	.782

Table 4.53 illustrates the reliability statistics – Inspiring a shared vision with Cronbach's Alpha value of 0.815. However, in Table 4.54, none of the Cronbach's Alpha value "if item deleted" is higher than 0.815. Therefore, no item is to be deleted.

4.4.1.3 Challenging the Process

Table 4.55
Reliability statistics – Challenging the process

Cronbach's Alpha	N of Items
.833	6

Table 4.56
Item-total statistics – Challenging the process

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
out challenging opportunities that test his/her own skills and abilities (c1)	28.11	12.094	.582	.810
Challenges people to try out new and innovative ways to do their work (c2)	28.20	11.502	.620	.803
Searches outside the formal boundaries of his/her organization for innovative ways to improve what we do (c3)	28.08	11.426	.612	.804
Asks "What can we learn?" when things don't go as expected (c4)	28.10	11.711	.586	.810
Makes certain that we set achievable goals, make concrete plans, and establish measurable milestones for the projects and programs that we work on (c5)	28.01	11.041	.610	.806
Experiments and takes risks, even when there is a chance of failure (c6)	28.11	11.902	.630	.802

Table 4.55 illustrates the reliability statistics – Challenging the process with Cronbach's Alpha value of 0.833. However, in Table 4.56, none of the Cronbach's Alpha value "if item deleted" is higher than 0.833. Therefore, no item is to be deleted.

4.4.1.4 Enabling Others to Act

Table 4.57
Reliability statistics – Enabling others to act

Cronbach's Alpha	N of Items
.814	6

Table 4.58
Item-total statistics – Enabling others to act

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Develops cooperative relationships among the people he/she works with (e1)	28.35	11.052	.568	.786
Actively listens to diverse points of view (e2)	28.45	11.129	.585	.783
Treats others with dignity and respect (e3)	28.34	10.706	.624	.774
Supports the decisions that people make on their own (e4)	28.36	11.287	.524	.796
Gives people a great deal of freedom and choice in deciding how to do their work (e5)	28.29	10.699	.597	.780
Ensures that people grow in their jobs by learning new skills and developing themselves (e6)	28.42	11.513	.557	.789

Table 4.57 illustrates the reliability statistics – Enabling others to act with Cronbach's Alpha value of 0.814. However, in Table 4.58, none of the Cronbach's Alpha value "if item deleted" is higher than 0.814. Therefore, no item is to be deleted.

4.4.1.5 Encouraging the Heart

Table 4.59
Reliability statistics – Encouraging the heart

Cronbach's Alpha	N of Items
.806	6

Table 4.60
Item-total statistics – Encouraging the heart

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Praises people for a job well done (enc1)	27.88	9.830	.618	.764
Makes it a point to let people know about his/her confidence in their abilities (enc2)	27.98	10.101	.575	.774
Makes sure that people are creatively rewarded for their contributions to the success of projects (enc3)	27.89	10.028	.580	.772
Publicly recognizes people who exemplify commitment to shared values (enc4)	27.89	10.028	.553	.779
Finds ways to celebrate accomplishments (enc5)	27.91	10.132	.530	.784
Gives the members of the team lots of appreciation and support for their contributions (enc6)	28.15	10.812	.536	.783

Table 4.59 illustrates the reliability statistics – Enabling others to act with Cronbach's Alpha value of 0.806. However, in Table 4.60, none of the Cronbach's Alpha value "if item deleted" is higher than 0.806. Therefore, no item is to be deleted.

4.4.2 Reliability Test for OCQ

After collecting the required data, the researcher again conducted a reliability test for the questionnaire utilized by Mowday, Steers, and Poster's Organizational Commitment Questionnaire (OCQ) to ensure the stability and consistency of the instruments measured Field (2013). The data was analyzed on the 387 respondents.

Table 4.61
Original reliability statistics – OCQ

Cronbach's Alpha	N of Items
.928	15

Table 4.61 illustrates the first reliability statistic Cronbach's Alpha value for OCQ is 0.928. However, in Table 4.62, Item "For me this is the best of all possible organizations for which to work (oc14)" and "Deciding to work for this organization was a definite mistake on my part (oc15) Cronbach's Alpha value "if item deleted" is higher than 0.928.

Table 4.62

Original item-total statistics – OCQ

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful (oc1)	82.12	107.796	.795	.919
I talk up this organization to my friends as a great organization to work for (oc2)	82.18	113.446	.698	.923
I feel very little loyalty to this organization (oc3)	82.13	111.814	.667	.923
I would accept almost any type of job assignment in order to keep working for this organization (oc4)	82.43	108.210	.668	.923
I find that my values and the organization's values are very similar (oc5)	82.59	110.532	.701	.922
I am proud to tell others that I am part of this organization (oc6)	82.05	110.410	.727	.921
I could just as well be working for a different organization as long as the type of work were similar (oc7)	82.40	110.924	.654	.923
This organization really inspires the very best in me in the way of job performance (oc8)	82.31	111.682	.692	.922
It would take very little change in my present circumstances to cause me to leave this organization (oc9)	82.42	110.768	.689	.922
I am extremely glad that I chose this organization to work for over others I was considering at the time I joined (oc10)	82.29	110.311	.707	.922
There's not too much to be gained by sticking with this organization indefinitely (oc11)	82.41	111.916	.629	.924
Often, I find it difficult to agree with this organization's policies on important matters relating to its employees (oc12)	82.18	112.726	.666	.923
I really care about the fate of this organization (oc13)	82.21	111.584	.677	.923
For me this is the best of all possible organizations for which to work (oc14)	82.14	117.756	.396	.930
Deciding to work for this organization was a definite mistake on my part (oc15)	82.05	115.108	.479	.929

In order to ensure the stability and consistency of the instrument measured, Item "Deciding to work for this organization was a definite mistake on my part (oc15) to be deleted. Table 4.63 and Table 4.64 illustrate the adjusted reliability statistics value after deleting the Item "Deciding to work for this organization was a definite mistake on my part (oc15).

Table 4.63
Adjusted reliability statistics – OCQ to 14 items

Cronbach's Alpha	N of Items
.929	14

Table 4.63 illustrates the adjusted reliability statistic – OCQ to 14 items Cronbach's Alpha value for OCQ is 0.929. However, in Table 4.64, Item "For me this is the best of all possible organizations for which to work (oc14)" Cronbach's Alpha value "if item deleted" is higher than 0.928.

Table 4.64
Adjusted Item-total statistics – OCQ to 14 items

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful (oc1)	76.04	96.405	.794	.919
I talk up this organization to my friends as a great organization to work for (oc2)	76.09	101.680	.701	.923
I feel very little loyalty to this organization (oc3)	76.05	100.156	.668	.923
I would accept almost any type of job assignment in order to keep working for this organization (oc4)	76.35	96.472	.680	.923
I find that my values and the organization's values are very similar (oc5)	76.51	98.655	.716	.922
I am proud to tell others that I am part of this organization (oc6)	75.97	98.691	.735	.921
I could just as well be working for a different organization as long as the type of work were similar (oc7)	76.31	99.195	.660	.924

Table 4.64 (continued)

This organization really inspires the very best in me in the way of job performance (oc8)	76.23	99.908	.700	.923
It would take very little change in my present circumstances to cause me to leave this organization (oc9)	76.34	98.956	.700	.922
I am extremely glad that I chose this organization to work for over others I was considering at the time I joined (oc10)	76.21	98.710	.709	.922
There's not too much to be gained by sticking with this organization indefinitely (oc11)	76.33	100.199	.632	.925
Often, I find it difficult to agree with this organization's policies on important matters relating to its employees (oc12)	76.09	101.157	.659	.924
I really care about the fate of this organization (oc13)	76.12	100.114	.669	.923
For me this is the best of all possible organizations for which to work (oc14)	76.06	106.861	.343	.933

In order to ensure the stability and consistency of the instrument measured, Item "For me this is the best of all possible organizations for which to work (oc14)" to be deleted. Table 4.65 and Table 4.66 illustrate the adjusted reliability statistics value after deleting Item "For me this is the best of all possible organizations for which to work (oc14)".

Table 4.65

Adjusted reliability statistics – OCQ to 13 items

Cronbach's Alpha	N of Item
.933	13

Table 4.65 illustrates the adjusted Reliability Statistics – OCQ to 13 items with Cronbach's Alpha value of 0.933. However, in Table 4.66, none of the Cronbach's Alpha value "if item deleted" is higher than 0.933. Therefore, no item is to be deleted anymore.

Table 4.66

Adjusted item-total statistics – OCQ to 13 items

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful (oc1)	70.05	88.775	.798	.924
I talk up this organization to my friends as a great organization to work for (oc2)	70.10	93.935	.700	.928
I feel very little loyalty to this organization (oc3)	70.06	92.442	.668	.929
I would accept almost any type of job assignment in order to keep working for this organization (oc4)	70.36	88.759	.686	.929
I find that my values and the organization's values are very similar (oc5)	70.52	90.882	.723	.927
I am proud to tell others that I am part of this organization (oc6)	69.97	90.953	.740	.926
I could just as well be working for a different organization as long as the type of work were similar (oc7)	70.32	91.286	.672	.929
This organization really inspires the very best in me in the way of job performance (oc8)	70.24	92.151	.704	.928
It would take very little change in my present circumstances to cause me to leave this organization (oc9)	70.35	91.181	.706	.927
I am extremely glad that I chose this organization to work for over others I was considering at the time I joined (oc10)	70.22	91.176	.704	.928
There's not too much to be gained by sticking with this organization indefinitely (oc11)	70.33	92.373	.638	.930
Often, I find it difficult to agree with this organization's policies on important matters relating to its employees (oc12)	70.10	93.650	.646	.929
I really care about the fate of this organization (oc13)	70.13	92.736	.652	.929

4.4.3 Validity Test

After measuring the reliability for all the questionnaires, the researcher conducted a validity test. Validity test is a scale to measure what was intended to measure (Zikmund, 2010). Indeed, The Kaiser-Meyer-Olkin (KMO) was carried out first to measure the sampling adequacy to assist users to assess the adequacy of their correlation matrix for factor analysis. According to Zikmund (2010), higher value of KMO (from 0.5 to 1.0) indicates that the higher appropriateness of the data collected. According to Hutcheson and Sofroniou (1999), the KMO standard measurements are:-

KMO	**Indication**
0.50 and below	very unsuitable for factor analysis
0.60	slightly unsuitable for factor analysis
0.70	average for factor analysis
0.80	suitable for factor analysis
0.9 and above	very suitable for factor analysis

Source: Hutcheson and Sofroniou (1999)

Table 4.67
KMO and Bartlett's test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.894
Bartlett's Test of Sphericity	Approx. Chi-Square	8359.963
	df	903
	Sig.	.000

Table 4.67 shows that the (KMO) result obtained for this study is 0.894 and the significant level ($p < 0.005$). It means that the data obtained is very suitable for factor analysis.

Table 4.68 was generated using SPSS rotated component matrix. The process of rotation improves the interpretability of factors by discriminating between factors (Field, 2013). Generally most of the variables consist of high loading which will maximize the loading on all other factors. Small loadings will minimize the loading on all other factors. As a result, this study is statistically significant as the items were within the same group for independent variable: modelling the way, inspiring a shared vision, challenging the process, enabling others to act, encouraging the heart and dependent variable: organizational commitment.

Table 4.68
Factor analysis - rotated component matrix

	Component					
	1	2	3	4	5	6
I am willing to put in a great deal of effort beyond that normally expected in order to help this organization be successful (oc1)	.827					
I am proud to tell others that I am part of this organization (oc6)	.780					
I find that my values and the organization's values are very similar (oc5)	.764					
I talk up this organization to my friends as a great organization to work for (oc2)	.754					
This organization really inspires the very best in me in the way of job performance (oc8)	.754					
It would take very little change in my present circumstances to cause me to leave this organization (oc9)	.747					
I am extremely glad that I chose this organization to work for over others I was considering at the time I joined (oc10)	.744					
I feel very little loyalty to this organization (oc3)	.733					
I would accept almost any type of job assignment in order to keep working for this organization (oc4)	.726					
I could just as well be working for a different organization as long as the type of work were similar (oc7)	.717					

Table 4.68 (continued)

I really care about the fate of this organization (oc13)	.708					
Often, I find it difficult to agree with this organization's policies on important matters relating to its employees (oc12)	.702					
There's not too much to be gained by sticking with this organization indefinitely (oc11)	.701					
Is clear about his/her philosophy of leadership m6)		.744				
Builds consensus around a common set of values for running our organization (m5)		.676				
Spends time and energy making certain that the people he/she works with adhere to principles and standards that we have agreed on (m2)		.671				
Follows through on promises and commitments he/she makes (m3)		.669				
Sets a personal example of what he/she expects of others (m1)		.667				
Asks for feedback on how his/her actions affect other people's performance (m4)		.650				
Experiments and takes risks, even when there is a chance of failure (c6)			.727			
Searches outside the formal boundaries of his/her organization for innovative ways to improve what we do (c3)			.705			
Challenges people to try out new and innovative ways to do their work (c2)			.695			
Asks "What can we learn?" when things don't go as expected (c4)			.650			
Makes certain that we set achievable goals, make concrete plans, and establish measurable milestones for the projects and programs that we work on (c5)			.580			
out challenging opportunities that test his/her own skills and abilities (c1)			.548			
Publicly recognizes people who exemplify commitment to shared values (enc4)				.676		
Finds ways to celebrate accomplishments (enc5)				.674		
Gives the members of the team lots of appreciation and support for their contributions (enc6)				.672		
Makes sure that people are creatively rewarded for their contributions to the success of projects (enc3)				.641		
Makes it a point to let people know about his/her confidence in their abilities (enc2)				.599		

Table 4.68 (continued)

Praises people for a job well done (enc1)				.595		
Develops cooperative relationships among the people he/she works with (e1)					.693	
Treats others with dignity and respect (e3)					.687	
Actively listens to diverse points of view (e2)					.645	
Supports the decisions that people make on their own (e4)					.625	
Gives people a great deal of freedom and choice in deciding how to do their work (e5)					.618	
Ensures that people grow in their jobs by learning new skills and developing themselves (e6)					.581	
Appeals to others to share an exciting dream of the future (i3)						.715
Paints the "Big Picture" of what we aspire to accomplish (i5)						.702
Talks about future trends that will influence how our work gets done (i1)						.679
Shows others how their long-term interests can be realized by enlisting in a common vision (i4)						.614
Describes a compelling image of what our future could be like (i2)						.570
Speaks with genuine conviction about the higher meaning and purpose of our work (i6)						.503

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

4.5 Inferential Analysis

Inferential analysis is used to make judgment of the probability (William & Trochim, 2006). Unlike descriptive analysis, it is to make inferences from the data to become more general.

In order to test the hypotheses of this study, Table 4.69 illustrates the type of measuring tools used for this study.

Table 4.69
Various adopted statistical techniques in this research

Research Gaps	**Research Problems**	**Research Hypothesis**	**Statistical Test**
The relation between perceived leadership practices and consulting engineer's organizational commitment yet to be studied in Malaysia, particularly in engineering sector (Johari, Abdullah, Osman, Sapuan, Marium, Jaafar, Omar, & Rosnah, 2002); Lo, Ramayah, & Min, 2009; Jeremy, 2010).	How the consulting engineer's perceived leadership practice relates with engineer's organizational commitment at their working place?	**H_1**: There is a significant relation between Perceived Leadership Practice – modeling the way and consulting engineer's organizational commitment at their working place.	Spearman Correlation
		H_2: There is a significant relation between Perceived Leadership Practice – inspire a shared vision and consulting engineer's organizational commitment at their working place.	Spearman Correlation
		H_3: There is a significant relation between Perceived Leadership Practice – challenge the process and consulting engineer's organizational commitment at their working place.	Spearman Correlation
		H_4: There is a significant relation between Perceived Leadership Practice – enable others to act and consulting engineer's organizational commitment at their working place.	Spearman Correlation
		H_5: There is a significant relation between Perceived Leadership Practice – encourage the heart and consulting engineer's organizational commitment at their working place.	Spearman Correlation
Limited study in the extend literature to measure the different of demographic variables and consulting engineer's organizational commitment (Eker, 2008; Mohamed, Kader, & Anisa, 2012).	How the demographic variables differentiate consulting engineer's organizational commitment at their working place?	**H_6**: There is a significant difference on consulting engineer's organizational commitment based on gender.	Wilcoxon signed rank test
		H_7: There is a significant difference of consulting engineer's organizational commitment based on age.	Kruskal wallis test
		H_8: There is a significant difference of consulting engineer's organizational commitment based on years of working experience.	Kruskal wallis test

4.5.1 Spearman-Rho Correlation Analysis

As the data is not normal, Spearman rho correlation is used for this study (Field, 2013). The correlation study comprises six variables indicated in scale scores. It includes five Kouzes and Posner leadership practices (1987), and one organizational commitment from Mowday, Porter and Steer (1979). The five independent variables derived from thirty survey items in the response scale ranging from 1 (never) to 7 (always). Each of the five leadership practice scores are added, and obtained an average from the six items. For engineer's organizational commitment variable, fifteen survey items ranging from 1 (strongly disagree) to 7 (strongly agree) are added, and obtained an average from the one discrete items. The Pearson correlation for each component is shown in Table 4.70.

Table 4.70

Spearman-rho correlation analysis

		modelling	inspiring	challenging	enabling	encouraging	OC
modelling	Correlation Coefficient	1.000	.184**	.184**	.225**	.341**	.172**
	Sig. (2-tailed)	.	.000	.000	.000	.000	.001
	N	387	387	387	387	387	387
inspiring	Correlation Coefficient	.184**	1.000	1.000**	.342**	.226**	.199**
	Sig. (2-tailed)	.000	.	.	.000	.000	.000
	N	387	387	387	387	387	387
challenging	Correlation Coefficient	.184**	1.000**	1.000	.342**	.226**	.199**
	Sig. (2-tailed)	.000	.	.	.000	.000	.000
	N	387	387	387	387	387	387
enabling	Correlation Coefficient	.225**	.342**	.342**	1.000	.471**	.241**
	Sig. (2-tailed)	.000	.000	.000	.	.000	.000
	N	387	387	387	387	387	387
encouraging	Correlation Coefficient	.341**	.226**	.226**	.471**	1.000	.148**
	Sig. (2-tailed)	.000	.000	.000	.000	.	.004
	N	387	387	387	387	387	387
OC	Correlation Coefficient	.172**	.199**	.199**	.241**	.148**	1.000
	Sig. (2-tailed)	.001	.000	.000	.000	.004	.
	N	387	387	387	387	387	387

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4.70 shows the significant at the 0.01 significant level ($p<0.01$) between independent and dependent variables. The consulting engineers organizational commitment correlation with modelling the way is 0.172, inspiring a shared vision is 0.199, challenging the process is 0.199, enabling other to act is 0.241 and encouraging the heart is 0.148.

Hypothesis 1

H_1: There is a significant relation between Perceived Leadership Practice – modeling the way and consulting engineer's organizational commitment at their working place.

Accept H_1 if $p < 0.05$

Table 4.70 illustrates that $r = 0.172$ ($p = 0.001$) is lower than alpha value of 0.05. Thus, we accept H_1.

In conclusion, there is a significant positive relation between Perceived Leadership Practice – modeling the way and consulting engineer's organizational commitment at their working place.

Hypothesis 2

H_2: There is a significant relation between Perceived Leadership Practice – inspire a shared vision and consulting engineer's organizational commitment at their working place.

Accept H_2 if $p < 0.05$

Table 4.70 illustrates that $r = 0.199$ ($p = 0.000$) is lower than alpha value of 0.05. Thus, we accept H_1.

In conclusion, there is a significant positive relation between Perceived Leadership Practice – inspire a shared vision and consulting engineer's organizational commitment at their working place.

Hypothesis 3

H_3: There is a significant relation between Perceived Leadership Practice – challenge the process and consulting engineer's organizational commitment at their working place.

Accept H_3 if $p < 0.05$

Table 4.70 illustrates that $r = 0.199$ ($p = 0.000$) is lower than alpha value of 0.05. Thus, we accept H_3.

In conclusion, there is a significant positive relation between Perceived Leadership Practice – challenge the process and consulting engineer's organizational commitment at their working place.

Hypothesis 4

H_4: There is a significant relation between Perceived Leadership Practice – enable others to act and consulting engineer's organizational commitment at their working place.

Accept H_4 if $p < 0.05$

Table 4.70 illustrates that r = 0.241 (p = 0.000) is lower than alpha value of 0.05. Thus, we accept H_4.

In conclusion, there is a significant positive relation between Perceived Leadership Practice – inspire a shared vision and consulting engineer's organizational commitment in their working place.

Hypothesis 5

H_5: There is a significant relation between Perceived Leadership Practice – encourage the heart and consulting engineer's organizational commitment at their working place.

Accept H_5 if $p < 0.05$

Table 4.70 illustrates that r = 0.148 (p = 0.004) is lower than alpha value of 0.05. Thus, we accept H_5.

In conclusion, there is a significant positive relation between Perceived Leadership Practice – challenge the process and consulting engineer's organizational commitment at their working place.

4.5.2 Test of Difference

Test of difference is used to determine whether there is a significant difference between two sets of scores (Coakes and Steed, 2007). Test of difference was carried out for Hypothesis 6 to Hypothesis 8.

4.5.2.1 Test of Significance for Difference

Hypothesis 6

H_6: There is a significant difference on consulting engineer's organizational commitment based on gender.

Accept H_6 if $p < 0.05$

Wilcoxon Signed Rank test is a version of the dependent sample t-test used to analyse the difference of engineer's organizational commitment according to consulting engineer's gender. Table 4.72 shows a significant difference between the independent variable of gender and dependent variable of the engineer's organizational commitment. The *p*-value of the test showed the significance level which is less than the significance level for the test 0.05 ($z = -17.051$, $p < .05$). Therefore, we have no reason to accept null hypothesis because there is a significant difference of engineer's organizational commitment according to consulting engineer's gender in their working place. Thus, the alternative hypothesis is accepted. Table 4.71 illustrates the ranks of the test and Table 4.72 illustrates the p-value ($p<0.05$).

Table 4.71
Gender wilcoxon signed ranks

		N	Mean Rank	Sum of Ranks
OC – Gender	Negative Ranks	0[a]	.00	.00
	Positive Ranks	387[b]	194.00	75078.00
	Ties	0[c]		
	Total	387		

a. OC < Gender

b. OC > Gender

c. OC = Gender

Table 4.72
Gender and consulting engineer's organizational commitment - Wilcoxon signed ranks

Test Statistics[b]	OC – Gender
Z	-17.051[a]
Asymp. Sig. (2-tailed)	.000

a. Based on negative ranks.

b. Wilcoxon Signed Ranks Test

In conclusion, there is a significant positive difference of consulting engineer's organizational commitment based on gender.

Hypothesis 7

H_7: There is a significant difference of consulting engineer's organizational commitment based on age.

Accept H_7 if $p < 0.05$

The Kruskal-Wallis test is a version of the independent measures that used to analyse the difference of consulting engineer's organizational commitment according to consulting engineer's age. The result showed a statistically significant difference

of the independent variable of age and dependent variable of the consulting engineer's organizational commitment. In this study, the degree of freedom (*df*) is 6. According to Sekaran (2013) the critical value is 12.59. As the Chi-square value for H_6 is 43.974 (in Table 4.75) which is higher than the critical value, we have no reason to accept null hypothesis because there is a significant difference of consulting engineer's organizational commitment according to consulting engineer's age in their working place. Thus, the alternative hypothesis is accepted. Table 4.73 illustrates the age ranks and Table 4.74 illustrates the Chi-square value of $p<0.05$.

Table 4.73
Age ranks

	Age	N	Mean Rank
OC	<= 25	81	183.66
	26-30	79	214.11
	31-35	75	141.86
	36-40	42	184.57
	41-45	37	168.57
	46-50	18	252.50
	51-55	55	256.61
	Total	387	

Table 4.74
Age and consulting engineer's organizational commitment - Kruskal wallis

	OC[a,b]
Chi-square	43.974
df	6
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: Age

In conclusion, there is a significant positive difference of consulting engineer's organizational commitment based on age.

Hypothesis 8

H8: There is a significant difference of consulting engineer's organizational commitment based on years of working experience.

Accept H_8 if $p < 0.05$

The Kruskal-Wallis test is used to analyse the difference of consulting engineer's organizational commitment according to consulting engineer's working experience. The result showed a significant difference between the independent variable of working experience and dependent variable of the consulting engineer's organizational commitment. In this study, the degree of freedom (*df*) is 6. According to Sekaran (2013) the critical value is 12.59. As the Chi-square value is 40.695 which is higher than the critical value. Thus, we have no reason to accept null hypothesis because there is a significant difference of consulting engineer's organizational commitment according to consulting engineer's working experience in their working place. Thus, the alternative hypothesis is accepted. Table 4.75 illustrates the working experience ranks of the test and Table 4.76 illustrates the Chi-square value of the test.

Table 4.75
Year of working experience ranks

Working Experience		N	Mean Rank
OC	< 1 yr	53	235.24
	1-5 yr	107	166.45
	6-10 yr	38	192.67
	11-15 yr	79	157.46
	16-20 yr	49	223.83
	21-25 yr	37	264.23
	=>26 yr	24	178.98
	Total	387	

Table 4.76
Year of working experience and consulting engineer's organizational commitment - Kruskal Wallis

	OC
Chi-square	40.695
df	6
Asymp. Sig.	.000

a. Kruskal Wallis Test

b. Grouping Variable: Working Experience

In conclusion, there is a significant positive difference of consulting engineer's organizational commitment based on years of working experience.

4.6 **Summary for Chapter 4**

Chapter 4 reports the results of 387 respondent's data analysis for this study. The raw data consists of independent variables (modelling, inspiring, challenging, enabling and encouraging) and the dependent variable (consulting engineer's organizational commitment). The data shows not normal and therefore, non-parametric test is adopted.

Furthermore, reliability test were conducted to ensure the consistency of the measurement after the assumption test and multi co-linearity analysis. The result shows that all items were consistent except "for me this is the best of all possible organizations for which to work (oc14)" and "deciding to work for this organization was a definite mistake on my part (oc15)". Thus, these two items were removed.

Spearman-rho analysis was carried out to test the relationship for five hypotheses (H1 to H5). Hypothesis 6 to hypothesis 8 was tested for the differences based on demographic variables (age, gender and years of experience). All the results of the hypothesis testing are shown in Table 4.77.

Table 4.77

Summary of the results of hypotheses testing

Hypotheses	Significant	Support (Yes/No)
H1: There is a significant relation between Perceived Leadership Practice – modeling the way and consulting engineer's organizational commitment at their working place.	0.001 ($p<0.05$)	Yes
H2: There is a significant relation between Perceived Leadership Practice – inspire a shared vision and consulting engineer's organizational commitment at their working place	0.000 ($p<0.05$)	Yes
H3: There is a significant relation between Perceived Leadership Practice – challenge the process and consulting engineer's organizational commitment at their working place	0.000 ($p<0.05$)	Yes
H4: There is a significant relation between Perceived Leadership Practice – enable others to act and consulting engineer's organizational commitment at their working place	0.000 ($p<0.05$)	Yes
H5: There is a significant relation between Perceived Leadership Practice – encourage the heart and consulting engineer's organizational commitment at their working place	0.004 ($p<0.05$)	Yes
H6: There is a significant difference of consulting engineer's organizational commitment based on age	0.000 ($p<0.05$)	Yes
H7: There is a significant difference on consulting engineer's organizational commitment based on gender	0.000 ($p<0.05$)	Yes
H8: There is a significant difference of consulting engineer's organizational commitment based on year of working experience	0.000 ($p<0.05$)	Yes

In Chapter 5, the researcher will discuss in detail about the findings of the eight hypotheses and will conclude with the recommendations and suggestions for future research.

CHAPTER 5

DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

The results in Chapter 4 revealed the support for hypotheses 1 to 8 will provide the interpretation for chapter 5. This chapter includes implication of the findings and also describe the suitability of the related research and recommendations.

This study addresses the consulting engineer’s perceived leadership practices with regards to the engineer’s organizational commitment at their working place. The quantitative data were collected within Malaysia based engineering association: Association of Consulting Engineers, Malaysia (ACEM). The main intention of this study is to scrutinize the consulting engineer's perceived leadership practices at their working place that is related to the level of consulting engineer's organizational commitment at their working place, followed by scrutinizing the differences between consulting engineer's commitment at their working place and the specific demographic variables, including gender, age and years of working experience.

This study involved 394 participants who voluntarily participated in the research. The participants responded to 45 survey items via an email sent to them. The questionnaires consisted of independent variables - perceived leadership practices of modeling the way, inspiring a shared vision, challenging the process, enabling others to act and encouraging the heart developed by Kouzes and Posner

(1987) and, dependent variables which consists of a strong belief in and acceptance of the organization's goals and values, a willingness to exert considerable effort on behalf of the organization, and a strong desire to maintain membership in the organization developed by Mowday, Steers, and Porter (1979). This study focuses on the subject matter that is narrowed down to the research sampling group for those individuals who earned an engineering degree and work under one of the organization registered with Association of Consulting Engineers, Malaysia.

5.2 Study Participation, Data Collection and Research Questions

The research is derived from the research problems and the objectives of the study identified by the researcher.

Of importance to the findings of this research study is the 394 participants who were located in different locations within Malaysia. Such a geographical diversity enabled the researcher to consider the participants who worked in various locations and different organizations. Thus, a statistically significant influence between the five leadership practices and engineer's organizational commitment is applicable not only within organizational members working in a single employer, but also for a diverse group that is in different geographical areas with different leaders/employers.

The research questions were as follows:-

1. How would the perceived leadership practice - *model the way* relates with consulting engineer's organizational commitment at their working place?
2. How would the perceived leadership practice - *inspire a shared vision* relates with consulting engineer's organizational commitment at their working place?
3. How would the perceived leadership practice - *challenge the process* relates with consulting engineer's organizational commitment at their working place?
4. How would the perceived leadership practice - *enable others to act* relates with consulting engineer's organizational commitment at their working place?
5. How would the perceived leadership practice - *encourage the heart* relates with consulting engineer's organizational commitment at their working place?
6. To what extent the gender differentiates the consulting engineer's organizational commitment at their working place?
7. To what extent the age differentiates the consulting engineer's organizational commitment at their working place?
8. To what extent the years of experience differentiates the consulting engineer's organizational commitment at their working place?

5.3 Interpretations of Hypotheses Findings

The study in this section incorporates eight hypotheses. Hypotheses 1 to hypothesis 5 were tested using Spearman-rho analysis as the statistical technique. Hypothesis 6 and 7was tested using t-test as the statistical technique. Hypothesis 7 and hypothesis 8 were tested using ANOVA test as the statistical technique.

Hypotheses

The positive impact of the five perceived leadership practices (modelling the way, inspiring a shared vision, challenging the process, enabling other to act and encouraging the heart) were proved in the current study and this finding is consistent with the previous research.

Hypothesis 1 predicted that consulting engineers perceived the ability of their superior, on modeling the way by making "clear shared values and set the example by aligning personal action", Modelling the way gives a positive influence on consulting engineer's organizational commitment at their work place. This result again confirms Kouzes and Posner (2003b) findings. Amadei (2009) indicated that the reaction of engineers on performing their work is related to the effective communication between superior and engineers in their daily work. It provides an innovative way to educate engineers interested in addressing the problems with solutions. Indeed, consulting engineers perceive their superiors' creativity and innovativeness in identifying opportunities to them and manage to deal with major problems is cited as a main strength. This in turn will attract an influx of new faces

and at the same time motivate the consulting engineers in the organization (Amadei, 2009).

Hypothesis 2 predicted that consulting engineers perceived the ability of their superior on inspiring a shared vision which will enable them to forecast future development by imagining exciting and creating strategic move for the organization. Superior inspires a shared vision by enlisting consulting engineers in the same goal and vision by tempting to a shared ambition. The consulting engineers' sole goal is to define their inspirational vision. In moving forward, consulting engineers believe if their superior recognizes and shares their vision, it will:

- Provide an opportunity to collaborate. Engaging in various partnerships will help in the knowledge sharing process.
- Develops a relationship with international engineering community and provides a channel for the engineers to learn.
- Implement corporate social responsibilities by introducing a policy that allows their profession to serve society to the fullest.
- Encourage staff development program for engineers. To develop engineers today, it must include and go beyond the required technical competencies.

This result again confirms Kouzes and Posner (2003b) findings and Gordon's (2011) leadership practices – inspiring a shared vision and consulting engineer's organizational commitment has a positive relation at work place.

Hypothesis 3 predicted that consulting engineers perceived the ability of their superiors on challenging the process has relation with consulting engineer's commitment at their work place in this research. The ability of engineering superiors in moving strategically via innovative changes and this creates a positive perception to consulting engineers to achieve organization's vision. Consulting engineers perceived their superiors on how they commit to a clear observation and risk taking by constantly creating small wins and learning from mistakes. This was supported by Kishimoto and McGuire (2010,) whereby consulting engineers are more technical oriented who were trained to overcome complicated problems using solving approaches which may not be 100% correct at the beginning. Thus, superiors play an important role of re-shaping engineer's mentality to challenge the process. As the engineering superior increases his or her ability by challenging the process, the engineer also increases his or her level of commitment at their work place.

The findings also support the relational aspect of leadership from the Board of Engineer, Malaysia. (BEM, 2010) It encourages their members to adapt to the changes in their professional practices in order to cope with current and future engineering development practices. Consulting engineers who are willing to take the challenges will develop their confidence in practicing engineering practices in both industry and academic knowledge. Kouzes and Posner (2003b), Amadei (2009) supported the findings that engineering superior's experiments, taking risks and accepting the inevitable disappointments are all learning opportunities.

Hypothesis 4 predicts that consulting engineers perceived the ability of their superior on enabling others to act as "cultivating the collaboration by promoting

cooperative goals and building trust". Engineering superiors "reinforce every consulting engineer by giving them appropriate power and decision making powers. Consulting engineers perceived their superiors to be equipped with the ability to build supportive relationship with the team members and, develop the team members into competent and confident employees. This finding is supported by Kouzes and Posner (2003b), that superior coaching given to consulting engineers on how to use their skills and talents, as well as from their experience to make them well aware of their own strength and potential. At the same time, making consulting engineers feel valued seems to be one of the key ingredients to let them feel confident and responsible to take control and initiatives.

Hypothesis 5 predicts that consulting engineers perceived the ability of their superior on encouraging the heart. The superior recognizes the engineer's hard work by identifying the individual's excellence, and engineering leaders celebrate their values and victories by creating a spirit of community. Furthermore, it encourages committed engineers to further their education enhancement in management related subjects which will prepare the trained engineers in leadership and management skills technically and non-technically. Compared to Kouzes and Posner (2003b) and Woods (2007) studies, there were similar findings despite the study having geographical and industry difference.

Hypothesis 6, 7 and 8 predict that there is a significant difference between consulting engineer's organizational commitment and demographic variables (gender, age and years of working experience). These finding are consistent and supported by the research findings in year 1960s, 1970s and 1980s (Mowday, Porter, & Posner, 1982). Even though in recent research finding, Xu, Wang, and Liu (2013)

concluded that in construction industry, gender has a significant influence and women were more committed to their organization as compared to men because females have gone through many barriers in getting their current job positions. Salami (2008); Kanchana and Panchanatham (2012) found that age and working status had a positive correlation with the commitment level in an organization. On the other hand, apart from age and years of experience, Kumari, Bahuguna, and Pandey (2012) concluded that engineers always create a situation that will suit their experiences and skills. This will allow them to be great in influencing their present organization and competing organizations. Overall, the insight possessed by consulting engineer's organizational commitment is differentiated by the demographic variables (gender, age, and years of working experience).

5.4 The Contributions of Research

The research makes five contributions to the body on the knowledge of consulting engineer's perceived leadership practices and organizational commitment in the engineering industry.

The first contribution provides an imminent concern of the consulting engineers toward organizational leadership style and effectiveness. The identification of perceived leadership practices in modeling the way at work helps to project an oriented organization which will promote competent staff towards managerial level. At the same time, to incorporate a positive aspect via modeling to achieve consulting engineer's organizational commitment.

The second contribution provides a platform that the organization is concerned about consulting engineer’s progress of work by giving them guidelines to build them together. The inspiration of a shared vision creates the confidence of consulting engineers to work hard in order to achieve the goals at the given time frame.

The third contribution enables the consulting engineers to develop their knowledge implicitly and explicitly. The knowledge gained by challenging the process will only benefit the person who is willing to take the challenge that is assigned by their organization.

The fourth contribution allows top management to understand that consulting engineers today, besides being innovative, have to grow together to achieve the company's goals. The encouragement by enabling others to act develops the consulting engineer's skill with technical competencies at their work place.

The fifth contribution provides a platform to the organizations on encouraging, recognizing and developing the level of consulting engineer's commitment in an organization. This plays an important role in retaining competent engineers to stay with the organization without having the intent to leave.

Overall, this study has added to the knowledge base concerning leadership practices and organizational commitment that is found in, but not limited to, research by Stonestreet (2002), Chen (2007), Woods (2007) and William (2009).

Table 5.1 summarizes the five contributions of research in response to the research gap, questions and hypotheses.

Table 5.1
Research gap, research problems, research questions and contribution for this research

Research Gaps	**Research Problems**	**Research Hypothesis**	**Contributions**
The relation between perceived leadership practices and organizational commitment yet to be studied in Malaysia, particularly in engineering sector (Johari, Abdullah, Osman, Sapuan, Marium, Jaafar, Omar, & Rosnah, 2002); Lo, Ramayah, & Min, 2009; Jeremy, 2010).	How the perceived leadership practices relates with consulting engineer's organizational commitment at their working place?	**H_1**: There is a significant relation between Perceived Leadership Practices – modeling the way and consulting engineer's organizational commitment at their working place.	Help researcher to better comprehend leadership practices via modelling the way, inspiring a shared vision, challenging the process, enabling other to act, and encouraging the heart to build consulting engineer's organizational commitment at their work place
		H_2: There is a significant relation between Perceived Leadership Practices – inspire a shared vision and consulting engineer's organizational commitment at their working place.	
		H_3: There is a significant relation between Perceived Leadership Practices – challenge the process and consulting engineer's organizational commitment at their working place.	
		H_4: There is a significant relation between Perceived Leadership Practices – enable others to act and consulting engineer's organizational commitment at their working place.	
		H_5: There is a significant relation between Perceived Leadership Practices – encourage the heart and consulting engineer's organizational commitment at their working place.	
Limited study in the extended literature to measure the differences in demographic variables and consulting engineer's organizational commitment (Eker, 2008; Mohamed, Kader, & Anisa, 2012).	How demographic variables differentiate an engineer's organizational commitment at their work place?	**H_6**: There is a significant difference in consulting engineer's organizational commitment based gender.	Help researcher to better comprehend demographic variables (gender, age and years of working experience) and to differentiate consulting engineer's organizational commitment
		H_7: There is a significant difference in consulting engineer's organizational commitment based on age.	
		H_8: There is a significant difference in consulting engineer's organizational commitment based on years of working experience.	

5.5 Implications of the Study

Implications for research

As mentioned in chapter 2, drawing on prior study of perceived leadership practices and organizational commitments (Woods, 2007; William, 2009; Grafton, 2009), the related issues related to consulting engineer's perceived leadership practices and consulting engineer's organizational commitment at their work place have not been sufficiently studied. Many studies focus on different industries but not on consulting engineers and yet to explore employee's organizational commitment level (Stonestreet, 2002; Grafton, 2009). Thus, this study focuses on the perceived power of consulting engineers on engineering superior capabilities. This is done by supporting the hypothesis that engineer's perceived leadership practices has relationship consulting engineer's organizational commitment level This study lends explanation to the additional variances of perceived leadership practices, organizational commitments and understanding to the interdependence of both variables. This model integrates the two theoretical views and may serve as a template for researchers in investigating the leadership practices and organizational commitment. On the other hand, this study has also developed a strategic move for the organization in attracting, maintaining and promoting the engineers in diverse factors (gender, age and years of working experience). This research has illustrated that gender, age and years of working experience differentiate consulting engineer's organizational commitment.

Implications for practice

By conducting the research on consulting engineering industry and their perception of leadership practices of engineering leaders in their work place and consulting engineer's level of organizational commitment, a thorough understanding has been developed about the relation between two variables. This study has expanded the study of leadership practices and organizational commitment by focusing on those engineers who have added their work experience with engineering consulting firm.

This study has added to the knowledge base concerning consulting engineer's perceived leadership practices and organizational commitment that is found in, but not limited to research by Stonestreet (2002), Woods (2007), William (2009) and Grafton (2009). Thus, the present study provides an insight into developing effective leadership practices to increase consulting engineer's level of organizational commitment. Historically, engineers do not possess the competencies required for management or leadership. Consulting engineers perceived that their superiors can coach and lead them in an effort to guide them to grow in the organization.

Organizational commitment level relates with leadership practices – modeling the way by finding the right interacting way and creating the respect from followers to lead through directly an individual's involvement and action Grafton (2009). The finding for this research confirms the mentioned characteristic as well. The consulting engineer's superior should find ways in which he can guide and lead

the team by creating opportunities for them. As the model interacts with finding the right interaction to let the consulting engineers to follow, this will bring consulting engineers to work closely with the superior via frequent discussions. Consulting engineers appear to listen, and this can be a valuable source of information given by the superior when decision is made about what kind of task to be delivered and how to deliver them.

Organizational commitment level relates with leadership practices – inspiring a shared vision creates belief and commitment to the vision that ignites the flame of inspiration (Kouzes and Posner, 2003b). Applying leadership practices by inspiring a shared vision allows consulting engineers to be aware of the company's vision on what to achieve in a given time. This creates a clear picture to consulting engineers to work in accordance to common goals.

Organizational commitment level relates with leadership practices – challenging the process lets consulting engineer's superior to pay much attention to the capacity of consulting engineers constituent to take control of challenging situations and become capable of committing to change (Eslami and Gharakhani, 2012). The new set of challenges for the consulting engineers to move into new territories within the organization and its members, give new ways of thinking and new strategies at their work place.

Organizational commitment level relates with leadership practices – enabling others to act by establishing an environment of trust within the organization (Kouzes and Posner, 2003b). The findings of this research confirm the mentioned

characteristic as well. The function of enabling others to act incorporates the consulting engineer’s superior with modeling the way for team members by empowering team members and acting in a trustworthy manner to facilitate others to act.

Organizational commitment level relates with leadership practices – encouraging the heart to use a motivational force to guide consulting engineers through long and short-term strategies. Besides, to challenge the organization’s operating environment by acknowledging and celebrating the achievements and accomplishments of consulting engineers. Making consulting engineers feel valued seems to be one of the key ingredients to increase the level of organizational commitment (Jens and Wolff, 2009).

5.6 Research Result Limitations

The researcher aimed to investigate the relation between five leadership practices and organizational commitment in consulting engineering organization. This study also investigates the differences between gender, age and years of working experience and engineer's commitment level in their organization. This lead this study into eight factors tested for consulting engineer's commitment in an engineering organization. However, some potential limitations should be addressed. This research is limited on finding the relation with other dependent variables which may have different significant relationship level with the dependent variables of an engineer's commitment level in consulting engineering organization. In addition, testing the model validity in other context is suggested. A few researchers have

studied the antecedents of organizational commitment empirically (Gautam, Van Dick, Wagner, Upadhyay and Davis, 2005; Huang, Lawler, and Lee, 2007; Yahaya, Yahaya, Halimah Ma'alip, Shahrin Hashim, Yousaf, Riaz, Ahmad, Ehsan, and Mirza, 2011; Alwee, 2012). So, there seems to be a need of more studies in different contexts in future.

Another limitation of this research is that it does not take into account the total years of experience of the leader who may have attended or participated in trainings related to the five leadership practices. This research was not designed to determine in such a way if the years of experience of a leader increases leadership practices (Ali and Baloch, 2009; Lew, 2009; Xu, Wang, and Liu, 2013).

5.7 Recommendations for Future Research

This research objectively on the relation between the five perceived leadership practices with consulting engineer's commitment level in the engineering organization. Given the potential impact of this research model and the domain of this investigation, the researcher suggests future research should focus on engineer's personality, role of trust, cooperation agreement, and industry expert in collaboration with organizational commitment in engineering organization.

Another focus lies on the differences between engineer's organizational commitment and gender scores. This is because the current research did not investigate why the scores for female participants are higher as compared to male

participants. This may also lead to investigate underemployed engineers in relation to gender and organizational commitment.

5.8 Summary of Chapter 5

In this chapter, the contribution of this research related to the research gap and research questions were highlighted by comparing the extant literature in Chapter 2 and the research results in Chapter 4. The conclusions about the research problems and research questions were made. The implications of the research and practices were also addressed, followed by providing the limitations and future research of this study.

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