

**ESSENTIAL CHARACTERISTICS OF A SUCCESSFUL CONSTRUCTION
PROJECT MANAGER IN THE MALAYSIAN CONSTRUCTION INDUSTRY**

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**A project report submitted in partial fulfilment of the
requirements for the award of Master of Science (Project Management)**

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November 2019

DECLARATION

I hereby declare that this project report is based on my original work except for citations and quotations which have been duly acknowledged. I also declare that it has not been previously and concurrently submitted for any other degree or award at UTAR or other institutions.

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ABSTRACT

ESSENTIAL CHARACTERISTICS OF A SUCCESSFUL CONSTRUCTION PROJECT MANAGER IN THE MALAYSIAN CONSTRUCTION INDUSTRY

The construction industry is an important industry in any country in the world, more so in the developing countries. While it may contribute a relatively small percentage to the Gross Domestic Product in any country as compared to the other major industry like the mining or agricultural industries, its importance lie in the fact that due to its nature, the construction industry is directly link to a long list of supply chain industries and therefore have a high multiplier effects to the country's overall economy. In a developing country like Malaysia, the annual spending on the physical infrastructural development aspect of the country occupies a significant percentage of the country's annual budget. Having a poor project management team in implementing these high projects would mean that billions of tax payers money would be wasted unnecessarily. It is therefore imperative that an effective project management team be deployed for these high projects. It is therefore the aim of this study to evaluate on the essential characteristics that a successful construction project manager should possess in the Malaysian construction industry. The survey data was collected from fifty four respondents out of a total of about three hundreds survey questionnaire emailed to the relevant and selected industry practitioners. The data collected was then evaluated by statistical method using Microsoft Office Excel and SPSS (Statistical Package for the Social Science) where appropriate to produce a ranking of a list of essential characteristics for a successful construction project manager in the Malaysian construction industry. The top ten essential characteristics are: critical analysis and judgement; leadership qualities; strategic perspective; determination on objective; engaging communication and feedback; conflict management; resource management abilities; vision and imagination of impact of action taken; trustworthiness and verbal skill. This study have resulted in a useful list of essential characteristics for a successful construction project managers that is relevant to the Malaysian construction industry. This list of essential characteristics can be utilise as a reference point for the future soft skill training of prospective construction project manager both in the tertiary

educational programme as well as upgrading of soft skill training for junior construction project manager. It is hope that this will in turn lead to more effective and efficient management of our Malaysian governmental infrastructural development projects and thus minimise the wastage of billions of tax payer's money. On a broader perspective, these will also hopefully lead to better efficiency in the overall management of the country resources in term of managing construction projects.

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LIST OF SYMBOLS / ABBREVIATIONS

c_p	specific heat capacity, J/(kg·K)
h	height, m
K_d	discharge coefficient
M	mass flow rate, kg/s
P	pressure, kPa
P_b	back pressure, kPa
R	mass flow rate ratio
T	temperature, K
v	specific volume, m ³
α	homogeneous void fraction
η	pressure ratio
ρ	density, kg/m ³
ω	compressible flow parameter
ID	inner diameter, m
MAP	maximum allowable pressure, kPa
MAWP	maximum allowable working pressure, kPa
OD	outer diameter, m
RV	relief valve

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CHAPTER 1

INTRODUCTION

1.1 Background

The construction industry is an important industry in any country in the world, more so in the developing countries. One of the most crucial sectors for the development and economic growth of a developing nation is the construction industry (Haseeb et al., 2011). While it may contribute a relatively small percentage to the Gross Domestic Product in any country as compared to the other major industry like the mining or agricultural industries, its importance lies in the fact that due to its nature, the construction industry is directly linked to a long list of supply chain industries and therefore has a high multiplier effect on the country's overall economy. In Malaysia, the construction sector is a major contributor to the country's economy (Memon et al., 2014). In a developing country like Malaysia, the annual spending on the physical infrastructural development aspect of the country occupies a significant percentage of the country's annual budget. Malaysia has in recent years been embarking on high infrastructural development of its transport sector, for example the three Mass Rail Transit projects in the capital city of Kuala Lumpur and the Pan Borneo Highway that serve to efficiently link the states of Sabah and Sarawak in the Borneo Island which cost hundreds of billions of Malaysian Ringgit. Whether these expenditures are being effectively and efficiently spent will depend largely on the project management team being set up to manage these projects on top of all other considerations. Having a poor project management team in implementing these high projects would mean that billions of taxpayers' money would be wasted unnecessarily. It is therefore imperative that an effective project management team be deployed for these high projects.

1.2 Importance of the Study

A successful construction project should be completed within budget, on time and in accordance with the specifications which satisfied the key stakeholders (Majid, 2006).

Completion of projects within the time stipulated in the contract is often acknowledged as an indicator of efficiency (Chan and Kumaraswamy, 1997). There had been numerous studies on the effective implementation of project especially on construction projects but few researchers had look into one very important facet of the project management process that have hugh impact on the efficiency and effectiveness of the project management team itself: whether the personal characteristic of the Project Manager himself will impact the successful implementation of the project management process. In the Malaysian context and in view of the hugh annual budget provision for the construction of infrastructural development, this is an important research area so that the Malaysian tax payers monies are well spend and does not get wasted or used ineffectively. It is the aim of this study to evaluate on the essential characteristics that a successful construction project manager should possess in the Malaysian construction industry.

1.3 Problem Statement

A construction project is always liken to be a one-off hugh manufacturing process that have no predecessor. As such, all project is unique in its implementation whether in term of site, personnel management, supply chain management, financial management, construction management or the overall project management itself. It is obvious that a large part of these management process involve the formation of teams and teams of personnel to overseas and actually implementing the necessary action to put things into motion. Every team leader is a crucial part of the successful implementation of those activities under the team's purview. As such, the personal traits of the team leader can make or break the team management target objective. Many research had been conducted on coordination, management principles, facilities provisions etc to ensure a successful outcome of all these function i.e. the process of project management itself. However, the personal traits or characteristics of the person at the top pinnacle of all these, i.e. the Project Manager itself that will ensure the successful implementation of all these project management processes had rarely been research upon. Likewise, there is rarely any research on the essential characteristics of successful project managers in the construction industry in the context of the Malaysian construction industry. This study therefore intend to investigate the necessary personal characteristics that a

Malaysian construction project manager must have to ensure the success of the construction project under his purview.

1.4 Aims and Objectives

1.4.1 Aim of Research

The aim of this research is to identify the essential characteristics of a successful construction project manager in the Malaysian construction industry.

1.4.2 Objectives of Research

The objective of this research are:

- a) To explore whether the leadership profile of project manager will affect the successful implementation of project management process.
- b) To identify those characteristic of the Malaysian construction project managers which are significant issue in the implementation of the project management functions in Malaysian construction project.

1.5 Scope and Limitation of the Study

Unlike other scientific research that has no time limit and can stretch over a few years, the time frame and corresponding scope of this research is pretty much limited to the two semester allowable by the university. It is therefore necessary to limit the scope of the research to Malaysia and also only to construction project managers due to the above limited time frame. As such, the first scope is to find out whether there are any established leadership profile for successful or competent project managers. The second scope is to determine the relevant characteristic or competency for the Malaysian construction project managers.

1.6 Contribution of the Study

This research relate to the search for the critical competency that the construction project manager must have for the successful implementation of Malaysian

construction project. For a developing country like Malaysia where effective and efficient implementation of infrastructural development project are crucial for its progression into more advance economic development stages, the successful choice of the correct construction project manager for its infrastructural development projects can be critical to ensure that the high annual financial expenses are not unnecessarily wasted by abandoned or grossly delayed projects as a result of the incompetency of the construction project manager selected. This research therefore aim to identify the crucial characteristic of a successful construction project manager to fulfil the above need.

1.7 Outline of the Dissertation

This report is arranged in five chapters. Chapter 1 which is the background of the study, outlines the overall idea of the research topic, the importance of the study, the problem statement, the aim and objectives, the scope and limitation and lastly the contribution of the research to Malaysia as a developing country.

Chapter 2 on literature review will discuss on the relevant literature on the issues of the leading schools of leadership theories, the leadership profiles of successful leaders, competency profiles of project managers, whether there exist any differences in competency requirement for project managers in different sector of the economy and finally the essential characteristics of successful project manager.

Chapter 3 is on methodology adopted for this research and briefly describe the basis behind the theory, how data is designed to be collected by means of a online survey questionnaire and the statistical analysis procedure to verify consistencies of data analysed, the ways to interpret the data collected and to draw conclusions.

Chapter 4 on results and discussions for this research will present the data collected in tabulated and graphical format, the process of verification of the validity and consistencies of the data collected, interpretation of the results and the implication of these results to the Malaysian construction industry and infrastructural development for Malaysia in its next stage of development cycle.

Chapter 5 will be on conclusion and recommendation from the result of this research. It will draw conclusion based on the results of analysis on the data collected. It will also propose some recommendation for future research to follow up on the outcome derived from this study.

CHAPTER 2

LITERATURE REVIEW

2.1 Overview

Throughout history, mankind has attributed the success of major accomplishment eg, warfare, revolution, watershed events or major breakthrough to that certain unique qualities of the collective or individual leadership that spearheaded the movement eg, the brilliant leadership of Napoleon Bonaparte in the Anglo French war; Abraham Lincoln in unifying America; Ghandi in the independence of India and the independence of the states of Malaya under Malaysia's very own Bapa Malaysia, Tunku Abdul Rahman Putra (without a single drop of blood being shed!). So what are those unique qualities that made these legends so successful?

In this chapter, the author shall first take a dive into the existing literature on the various theories on leadership qualities, subsequently to research how these leadership qualities will relates to the performance of project manager in their management of project and finally to see whether is there any different qualities needed for project managers in different sector of the economy. This part of the research will be by way of a desktop research and this will fulfil the requirement of the research objective (a) under item "1.4.2 Objective of Research". Subsequent to this is a survey questionnaire to Malaysian construction industry practitioners to find out their perception of the essential characteristics of a successful construction project manager in the Malaysian construction industry.

2.2 Leadership Theories

Exploring leadership hypotheses of most recent 90 years indicate that preliminary hypotheses began from an attention on individual leader characteristics (Muller and Turner, 2010). Subsequently leadership theory evolved:

(a) Initially by bearing in mind the situation of the leadership (Muller and Turner, 2010).

(b) Then by moving attention from the discernible conduct of individual characteristics to the scholarly exchange and interpersonal connections (Muller and Turner, 2010).

A few writers describe these changes as phases of Schools of Leadership (Partington, 2007; Turner and Muller, 2005). These began around the 1930–1940s, by paying attention on leaders' attributes, for example, their physical features, capacities and characters (Muller and Turner, 2010). These researches are often called the *trait school* of leadership (Muller and Turner, 2010). The outstanding members of this school in recent history are Kirkpatrick and Locke (1991) on general leadership, also Turner (1999) for project management leadership (Muller and Turner, 2010).

Then in the 1940s emerge the *behavior school* of studies, that underscored the styles used by leaders within their specific leadership traits (Muller and Turner, 2010). The new fundamental hypothesis from this school proposes the idea leadership can be acquired, and isn't a quality people are brought into the world with (Muller and Turner, 2010). The popular 2 x 2 matrices of Blake and Mouton (1978) or Hersey and Blanchard (1988) represent some of the outstanding examples (Muller and Turner, 2010). They stressed on leadership disparity in concern for people against concern for production (Muller and Turner, 2010).

During the 1960s the *contingency school* surfaced, which was worried about suitability of various leadership patterns for various leadership circumstances by coordinating the leadership attributes to the leadership circumstance (Muller and Turner, 2010). Example is Robbins' (1997) with the four patterns of directive, supportive, participative and achievement oriented leadership, depending on character of those being led and the circumstances arising (Muller and Turner, 2010).

The *visionary and charismatic school* surfaced around 1980s, paying attention on organizational change (Muller and Turner, 2010). Features of this school is the contrast between transformational and transactional leadership patterns (Bass 1990). Transformational styles accentuate supporter rewards dependent upon meeting

determined execution targets, while the transactional styles stresses the advancement of mission, extent of leaders appeal, regard and trust (Muller and Turner, 2010).

Continuing the trend towards soft skill of leadership emerges a *emotional intelligence school* in no time before the year 2000 (Muller and Turner, 2010). This school focuses on personal management and interpersonal management (Muller and Turner, 2010). Daniel Goleman (1995) as the most noticeable delegate speculated that emotional capacities have higher significance for leadership over scholarly abilities (Goleman, 1995). Together with Boyatzis and McKee (2002) he proposes six leadership pattern, such as visionary, coaching, affiliative, democratic, pacesetting, and commanding (Goleman, Boyatzis and Mckee, 2002). These styles moves from extremely fair to complimentary to autocratic (Muller and Turner, 2010). Strict adherence and ordering is just recommended in instances of crisis, on account of their innate string for long haul connection among leader and subordinates (Goleman et al., 2002).

Lately the *competence school* appear that take into account all the previous schools (Muller and Turner, 2010). Competence in this instance encompasses a mixture of knowledge, skills and personal traits (Boyatzis, 1982; Crawford, 2003). Leading example are Dulewicz and Higgs (2005) who did a broad audit of current theories and their appraisal apparatuses, and recognized 15 leadership measurements, which was classified into three competencies of intellectual (IQ), emotional (EQ) and managerial (MQ) (Dulewicz and Higgs, 2005).

2.3 Leadership in Managers

Past motivational writers such as Mc Gregor (1967), Blake and Mouton (1964) and Likert and Hayes (1957) think an effective manager must practice consideration for individuals, develop trust, show compassion and consider individuals' feelings, for instance, in taking care of issues (Fisher, 2011). Honey (1988) add to this in early 1980s and recommend that interaction abilities are person to person practices that individuals adopt when aspiring to accomplish something valuable with the assistance of others (Fisher, 2011).

Peters and Waterman (1982) think of personal attributes and competences which constitutes effective people manager (Fisher, 2011). They propose that a successful people manager should have excellent communication skill, rouse others, lead their kin and show compassion (Fisher, 2011). It seems that more recently, there has been some advancement in the observation that managerial abilities, all alone, don't make an effective people manager (Fisher, 2011). Fisher (2006) recommends that the underlying personal character that support these competencies are getting progressively perceived as the main thrust that gave effect to the effective management of individuals (Fisher, 2011).

Kets de Vries (2001) proposes the smooth functioning of a person ought to be a priority on managers' aim (Fisher, 2011). He thinks that personal conduct is discernible and managers must exude transparent behaviour to establish enduring relationship with their team members (Fisher, 2011). Managers need to assemble a comprehension of things that trigger a person or what is critical to them (Fisher, 2011). He classify this as authentizotic behaviour (Fisher, 2011).

Trompenaars and Hampden-Turner (1993, 1997) think that knowing others culture is a notable people expertise (Fisher, 2011). They recommend that managers must comprehend the qualities and convictions of individuals from various societies have, why this is so and what the immediate effects are on their behaviour in, for instance, work circumstances (Fisher, 2011). Managers need to comprehend what functions admirably in one culture, may not really work similarly elsewhere (Fisher, 2011). They recommend that managers need to build up a comprehension of what the different patterns, groupings and customs are for the individuals they work with to oversee individuals adequately at global level (Fisher, 2011). More organizations these days work at worldwide level, regularly extending their business exercises past the fringes of numerous nations at the same time (Fisher, 2011).

2.4 Leadership in Project Manager

Kliem and Ludin (1992) believe that good project managers understand the significance of overseeing individuals in ventures viably by having and applying various people managing abilities (Fisher, 2011). They recommend that project

managers must create and use excellent interpersonal abilities, for example, indicating compassion for the sentiments of others, empathises with others (Fisher, 2011). Verma (1996) thinks that management of conflict in a project situation is as unavoidable as change (Fisher, 2011). He recommends that project managers be aware that there are various level of conflict and each requires a different way to deal with and settle (Fisher, 2011). Project managers must adjust their practices, contingent upon the conflict complexity they are managing (Fisher, 2011).

Thamhain (2004) consider that project managers motivate their team members and make everybody feel pleased to be a piece of the task and its importance (Fisher, 2011). Clearness, reason and arrangement of individual and hierarchical objectives are important for a brought together group culture to develop (Fisher, 2011). He recommends that successful people project managers support their team members, show individual acknowledgment for work accomplishments and make the subtleties of commitments exceptionally obvious to others within the team (Fisher, 2011). This refuels and continues individuals' commitment and cement the group behind its objective (Fisher, 2011).

Kadefors (2004) recommends that development of trust is a notable people capability of project managers (Fisher, 2011). She thinks that project managers must construct levels of dedication with colleagues so that the two show regard for one another and share a mutual vision (Fisher, 2011). They have to show elevated levels of care and show transparency (Fisher, 2011). Rosenau (1998) believe that project managers are bound to achieve their assignments with the respect of their colleagues by showing practices, for example, being courteous and sensible (Fisher, 2011). Individuals will react all the more well to such approaches (Fisher, 2011). Project managers will discover their desires are completed wilfully and regularly with enthusiasm (Fisher, 2011). He proposes that effective people project managers are people oriented with solid authority and great correspondence capacities (Fisher, 2011). They should be adaptable, innovative, creative and versatile to adapt to a heap of surprising issues, project managers need great and powerful relationship building abilities instead of technical aptitudes to deal with their team members (Fisher, 2011).

Edmondson et al. (2005) think that powerful people manager make a domain that is helpful for group learning (Fisher, 2011). They think that project managers

should be open so as to show that opinion are invited and esteemed (Fisher, 2011). They should be accessible, not reserved and make a climate of transparency and fortified by an express solicitation of project manager for suggestions from colleagues (Fisher, 2011). Wysocki (2007) recommends all successful project managers urge their colleagues to think 'fresh' and come out with inventive answers for issues and to settle on educated choices dependent on the quality of proof from gathered data (Fisher, 2011). Project managers ought to apply a collective way to deal with and settle clashes in project, urging team members to take a functioning part in the goals of contentions and not to try to make clashes pointlessly (Fisher, 2011).

Jiang et al. (1999) propose that a few relationship building abilities that make a compelling project manager are: being conciliatory and prudent when managing others, indicating sympathy, understanding what propels people, powerful management of conflict and strengthening messages vide facial and outward gestures (Fisher, 2011). In the context of integrated project management, Barkley (2006) proposes that competent project managers make a domain of genuineness, trust, open interchanges, self-esteem and duty (Fisher, 2011). They build up a positive 'can do' frame of mind and they listen effectively to other people (Fisher, 2011).

2.5 Competency in Project Manager

The maturation of the project management discipline, coupled with collapsing project budgets, shortening of project deadlines and the increasing risk of costly project failure, has led industries and academia alike to investigate and identify sources of project success (Stevenson and Starkweather, 2010). While a few researchers utilize a frameworks approach stressing development of progress, others underscore human qualities which is important to make these progress (Stevenson and Starkweather, 2010).

The method of reasoning to concentrate on human issues instead of frameworks information depended on the priority of human issues as contributions to the possible framework milieu (Stevenson and Starkweather, 2010). The volume of academic discourse on the requirement for more noteworthy accentuation on soft skills in the preparation and training of project managers prove that essentialness of

interpersonal issues are a reasonable point of convergence for foreseeing inevitable task achievement (Pant and Baroudi, 2008; Wateridge, 1997; Wirth, 1992). Common sense dictates that project manager ability is a key factor affecting the eventual result of the undertaking (Stevenson and Starkweather, 2010).

Boyatzis (1982) defined competency as "a hidden attribute of an individual. . .counting thought processes, attributes, abilities, parts of one's mental self-view or social job, or a collection of information which the person employs." (Stevenson and Starkweather, 2010).

Woodruffe (1991) proposed competency could be used in an occupation related sense (region of competency) and additionally in an individual related sense (competency) (Stevenson and Starkweather, 2010). In the former instance, he is alluding to the general capacity to complete work skillfully; in the latter, he refers to "one of the arrangements of conduct that the individual must show so as to play out the errands and elements of work with skill" (Stevenson and Starkweather, 2010). Each competency is a discrete dimension of behaviour (Stevenson and Starkweather, 2010). Furthermore, it is an estimation of direct action that is appropriate to execution in the movement (Woodruffe, 1991).

In spite of the fact that there are shared traits characteristic in the lead and structure of projects, observational research concentrated on the undertaking project managers properties and abilities related with progress has regularly been constrained to industry explicit examples (Stevenson and Starkweather, 2010). Work by Cheng et al. (2005) suggests a chance for the improvement of a conventional competency structure through dichotomizing capabilities as social or occupation skills (Stevenson and Starkweather, 2010). In the latter case, work task skills would be bound to differ dependent on the industry sector (Stevenson and Starkweather, 2010). In the former case, it is speculated that regardless of industry, project managers show comparative practices (e.g., initiative, diagnostic and applied reasoning, adaptability, etc) (Stevenson and Starkweather, 2010).

Cheng et al. (2005) have displayed proof in the construction industry for a project manager competency model incorporating the accompanying 12 abilities:

accomplishment direction, activity, data chasing, center around customer's needs, effect and impact, directiveness, collaboration and participation, group administration, expository reasoning, calculated reasoning, poise and adaptability (Stevenson and Starkweather, 2010).

Thamhain (2004) recorded the significance of team leadership properties in innovation based venture conditions (Stevenson and Starkweather, 2010). Clearly, the significance of behavioral competencies in highly technical environments has been amply demonstrated (Stevenson and Starkweather, 2010).

In a nutshell, the early studies concentrated on defining competency versus information, aptitude, and capacity (Stevenson and Starkweather, 2010). In the mean time, a valuable differentiation incorporates a thought of time versus experience, i.e., entry level workers may bring information, aptitudes, and capacities into the activity, however capabilities are the aftereffect of experience (Gokhale, 2005).

2.6 Conclusion

This literature review has sail firstly through the theoretical basis of leadership thinking on successful leaders, then on the personal profile of manager and finally the characteristics of project manager. It was clear from these previous studies that the leadership profile of the managers / project managers will definitely affect the way these managers / project managers manages the project and will have a direct bearing on the success or failure of the project under their management. It relates these successful characteristics of manager to that of a project manager in the handling of project and lastly it point to the fact that different project environment may requires a somewhat different set of characteristics or competencies for the project managers to be successful. This has thus provided the answer to the objective (a) of item “1.4.2 Objective of Research” in chapter 1.

However, there are very few research on the characteristics of successful project managers in the construction industry, even more so in the context of the Malaysian construction industry. Hence the rationale of this study aims to find out the essential characteristics of a successful construction project manager that is relevant and

specific to the Malaysian construction industry. The result of this study will be useful as a reference for the future training of construction project manager both in the enhancement of tertiary educational programmes as well as the soft skill training to upgrade existing junior construction project manager.

CHAPTER 3

METHODOLOGY AND WORK PLAN

3.1 Introduction

This chapter discuss about the research methods available, the study framework, the strategy of the study, sources of data possible, how the study is to be approached, the methods of data collection available, the design of data collection, the analysis of the collected data, the interpretation of the data collected and finally the research project milestones.

3.2 Research Framework

The research framework is as shown in the following figure:



Figure 3.1: Research framework

3.3 Research Strategy

3.3.1 Qualitative Research

Qualitative research is a subjective method of research. It is used to find an understanding of the underlying phenomenon, thoughts and opinions of an event. This method let the researcher gain some deep insights into the issues and in proposing hypothesis. Observation, personal interviews and focus group discussions are some

common methods in collecting of qualitative data. Typically only a small amount of carefully chosen samples are selected to conduct the research due to the time consuming nature of data collection.

3.3.2 Quantitative Research

Quantitative research is used to quantify the research issues by the use of numerical data and subsequently to make use of statistical analysis to interpret these data. These data can be in the form of perception, opinion and views etc. commonly collected via a series of questions design to capture these perception, opinion and views etc. It is a kind of objective methods of conducting research. Typically, the data are drawn from a large pool of sample population and the resulting data are taken to be representative of the population at large. Postal survey, internet survey, questionnaire and telephone survey are some of the common method adopted to collect data.

3.4 Methods for Data Collection

3.4.1 Observation

Observation is a method used to observe a subject or phenomenon and to record the pattern and behaviour and to subsequently draw conclusion based on these observation.

3.4.2 Personal Interview

This method is used to collect the opinion and view of a group of respondent either randomly or from carefully selected grouping due to the nature of the research topic. It is very important that all respondent must be very clear about the question being asked. This is normally conducted in a face-to-face manner using a structured questionnaire in a consistent format to ensure that the all respondent are being ask the same question to ensure accuracy of data collected.

3.4.3 Poster Survey

Postal survey by questionnaire is the popular method adopted if the researcher intend to collect data from a large sample. The researcher will normally sent the questionnaire through the post and invite respondent to respond on the postage paid reply document.

3.4.4 Online Internet Survey

With the advent of the internet, this has become a popular method to conduct survey due to its ease and practically cost free. The most common method is to email the respondent a structured questionnaire to ensure consistency of data collected. However, this can be varied to become a video face-to face online survey via common apps like Skype or Whatapps. This method can extend the range of the survey easily to a large sample of global respondent as long as they are connected to the internet.

3.4.5 Telephone Survey

The researcher will call up a number randomly or targeting selected groups in this method and then clarifying the purpose of the call and inviting respondent to participate in the survey. This is normally conducted based on a structured type of questionnaire to ensure consistency of data collection.

3.4.6 Method Adopted

Due to time and cost constraint, the author has adopted to using online internet survey questionnaire basing on Google form survey and limited to local Malaysian respondent only.

3.5 Data Analysis

The data collected was evaluated by statistical method using Microsoft Office Excel and SPSS (Statistical Package for the Social Science) where appropriate.

3.5.1 Descriptive Statistic

This is considered as one of the simplest method to analyse data under Quantitative Research method and seek to provide an overview of the data collected. Its aim is to present the data collected via bar chart, pie chart or other pictorial means to ease the understanding of the research result.

3.5.2 Cronbach's Alpha Coefficient

Cronbach's alpha reliability test will be used to examine the internal consistencies of the data collected using five point Likert scale questionnaire. The greater the value of the coefficient means that the data collected are more consistent and reliable. For this, any value above 0.70 will be accepted as being consistent and reliable result. The standard formula for Cronbach's Alpha is as shown below:

$$\alpha = \frac{n}{n-1} \left(1 - \frac{\sum Vi}{V_{test}} \right)$$

- n = number of questions
- Vi = variance of scores on each question
- Vtest = total variance of overall scores (not %'s) on the entire test

Figure 3.2: Formula for Cronbach's Alpha Coefficient

3.5.3 Relative Importance Index (RII) Analysis

Relative Importance Index (RII) was used to convert the five point Likert scale used in the questionnaire survey to calculate the relative importance of each of the essential characteristics listed in the questionnaire. The scale used in this research ranged from 1 to 5 as shown below:

1. Strongly Disagree
2. Disagree
3. Neutral or fair
4. Agree

5. Strongly Agree

The formula used for Relative Importance Index is as shown below:

$$\text{Conversion Formula} = \frac{5N_5 + 4N_4 + 3N_3 + 2N_2 + N_1}{5(N_5 + N_4 + N_3 + N_2 + N_1)}$$

N_5 = Number of respondents with strongly agree
 N_4 = Number of respondents with agree
 N_3 = Number of respondents with fair
 N_2 = Number of respondents with disagree
 N_1 = Number of respondents with strongly disagree

Figure 3.3: Formula for Relative Importance Index

The Relative Importance Index value ranges from 0 to 1, by which 0 is excluded. The higher the value of Relative Importance Index, the more important the factor is.

CHAPTER 4

RESULTS AND DISCUSSIONS

4.1 Introduction

The data collected in the survey will be organised firstly, then analysed using SPSS (Statistical Package for the Social Science) software to confirm data consistency using Cronbach's Alpha Coefficient Test and then to rank the data relative importance using the Relative Importance Index and lastly to follow with discussions on the results presented by these data.

A total of approximately 300 sets of survey questionnaire in Google Forms format were emailed to various players in the construction industry within a span of about three weeks inviting them to participate in the research survey. The construction players targeted includes consultant engineering firms, consultant quantity surveying firms, property developers firms, main contractor firms, consultant project management firms and lastly consultant architectural firms. Only 54 responses were received at the close of the survey. While the response is just lukewarm, it is believed that it is sufficient to provide the needed data for further analysis and discussion for the purpose of this research.

4.2 Demographic Information of Respondents

Survey respondents were surveyed on their demographic information on gender, age group, academic qualification, job description, area of specialisation in the construction industry and lastly number of years of working experience in the construction industry.

4.2.1 Gender of Respondents

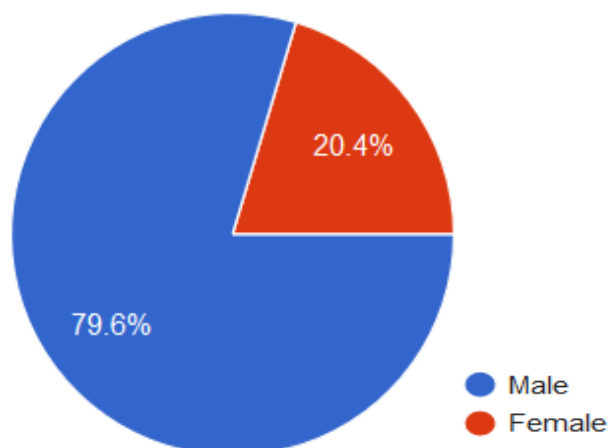


Figure 4.1: Gender of Respondents

Figure 4.1 above show the distribution of genders of respondents in this survey. 79.6% of the respondents are male whereas 20.4% are female. This is to be expected as construction industry professionals are male dominated due to the nature of the industry which entail tough conditions on the site.

4.2.2 Age Grouping of Respondents

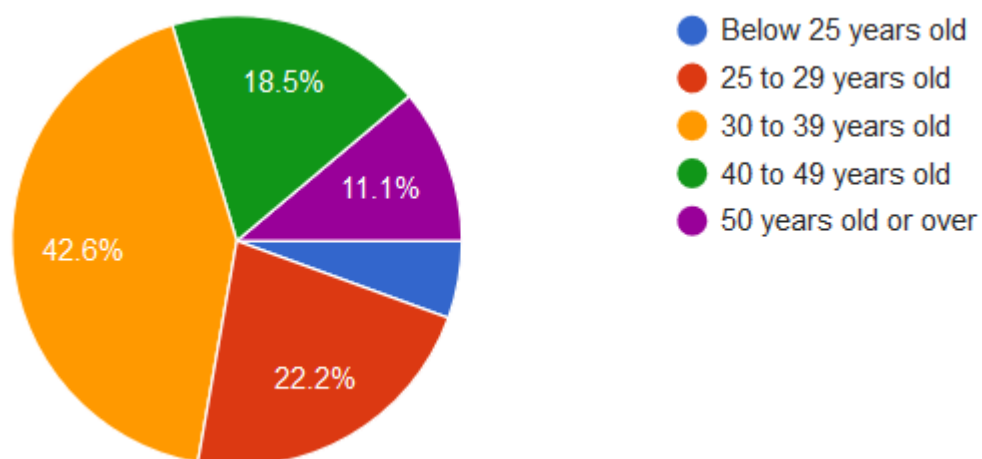


Figure 4.2: Age Grouping of Respondents

Figure 4.2 above shows the age grouping distribution of the respondents. This shows that the biggest group of respondents which occupy 42.6% of the total number of respondents are between the ages of 30 to 39 years. The second biggest group of

respondents occupy 22.2% of the total number of respondents and belongs to the age group of between 25 to 29 years old. Next in line is the group with 18.5% and are from the age group of between 40 to 49 years old. The fourth largest group which occupies 11.1% comes from those above 50 years old. Lastly comes the smallest of respondents which occupies only 5.60% of the total number of respondents.

4.2.3 Academic Qualification of Respondents

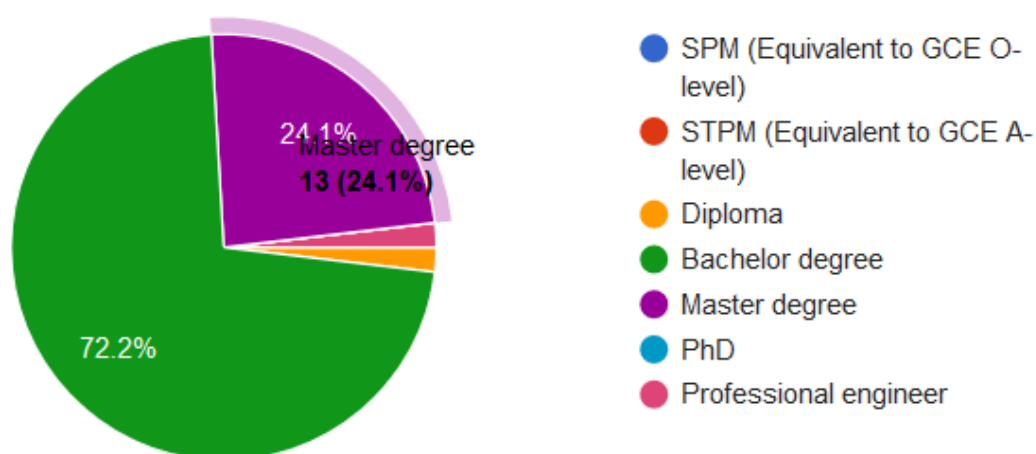


Figure 4.3: Academic Qualification of Respondents

Figure 4.3 above shows that 72.2% of the respondents have a bachelor degree as their highest academic qualification. The second biggest group with 24.1% of the respondents have master degree as their highest academic qualification. The balance of 3.7% of the respondents have diploma and STPM (equivalent to GCE A-level) as their highest academic qualification.

4.2.4 Profession of Respondents

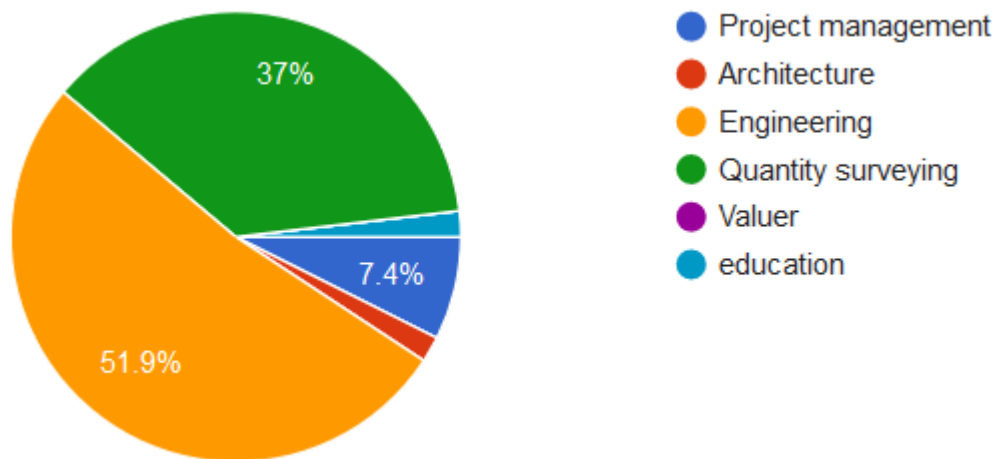


Figure 4.4: Profession of Respondents

Figure 4.4 above indicates that the biggest group of 51.9% of the respondents are from the engineering profession. The second biggest group occupying 37% belongs to the quantity surveying profession. The third biggest of respondents with 7.4% comes from the project management profession. The balance 3.7% of the respondents comes from the architecture and education profession.

4.2.5 Job Description of Respondents

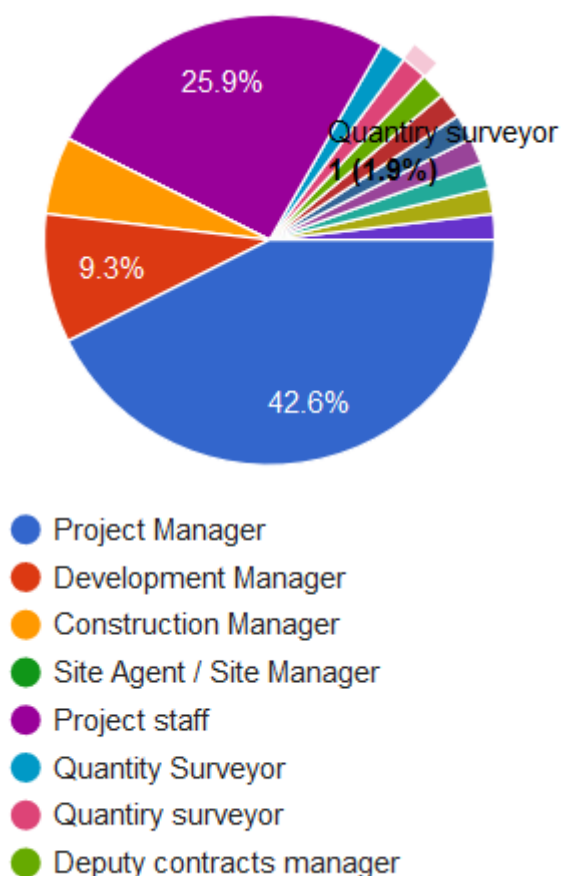


Figure 4.5: Job Description of Respondents

Figure 4.5 above shows that the biggest group of the respondents at 42.6% are working as project managers. The second biggest group of respondents at 25.9% are working as project staff which means that while they are not project managers, they are managing construction project for their company and are in constant liaison with project managers externally. The third biggest group of respondents at 9.3% are working as development managers typically from property developers. The fourth biggest group with 8.5% work as construction managers presumably with contracting firms. The balance 13.7% of the respondents comprises site managers, site agents, contracts managers and quantity surveyors.

4.2.6 Area of Specialization of Respondents

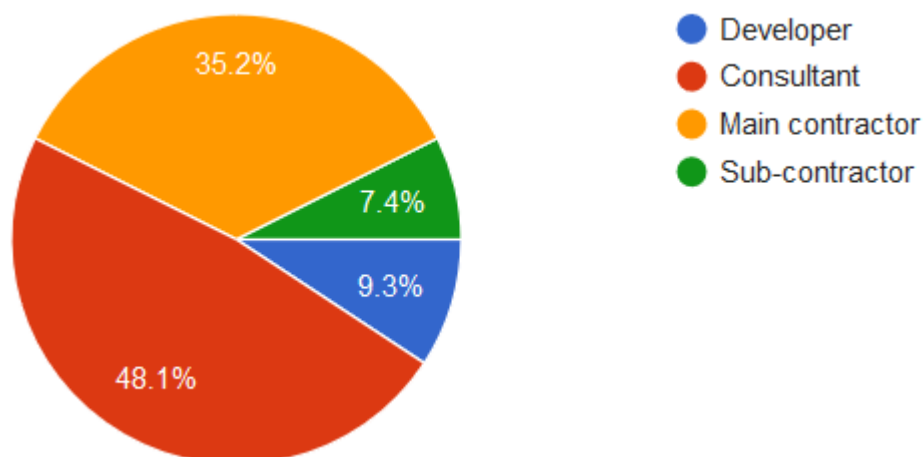


Figure 4.6: Area of specialisation of Respondents

Figure 4.6 above shows that the biggest group of respondent at 48.1% are working in consultant firm. The second biggest group at 35.2% are working in main contracting firm whereas 9.3% representing the third largest group works in property development firm. The balance 7.4% of the respondents work in sub-contractor firm.

4.2.7 Respondents Number of Years of Working in the Construction Industry

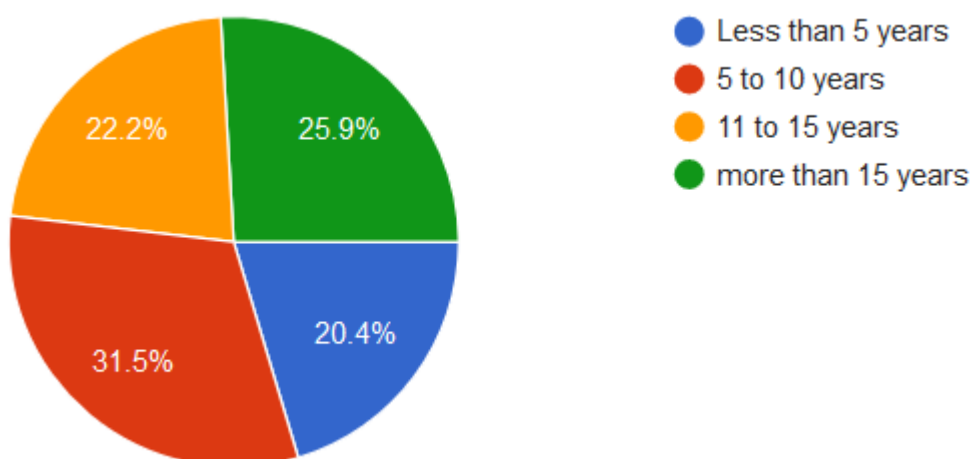


Figure 4.7: Respondents Number of Years of Working in the Construction Industry

Figure 4.7 above shows that the biggest group of respondent at 31.5% has been working in the construction industry for 5 to 10 years. Whereas the second biggest

group at 25.9% has been working for more than 15 years in the construction industry. The third biggest group at 22.2% has been working for 11 to 15 years in the construction industry with the last group at 20.4% working for less than 5 years in the construction industry.

4.3 Project Experience with Project Manager / Project Management Personnel

4.3.1 Major Types of Construction Project Experience

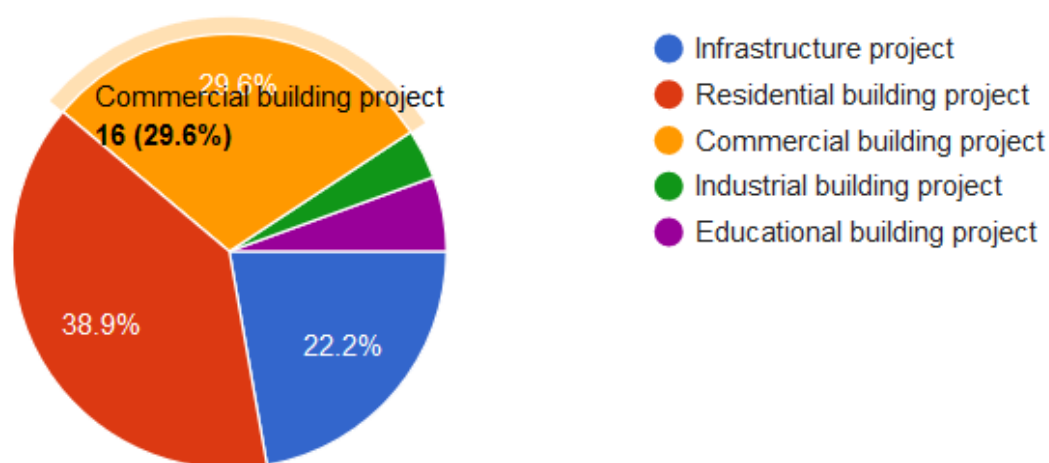


Figure 4.8: Major Types of Construction Project Experience

Figure 4.8 above shows that the biggest group of respondents at 38.9% have major experience with residential building projects whereas the second biggest group of respondents at 29.6% has major experience with commercial building projects. The third biggest group at 22.2% of the respondents are having major experience in infrastructure projects. The fourth largest group of respondents at 6.5% are having major experience in educational building projects. The smallest group at 2.8% of the respondents have major project experience in industrial building projects.

4.3.2 Value of Single Largest Project Experience

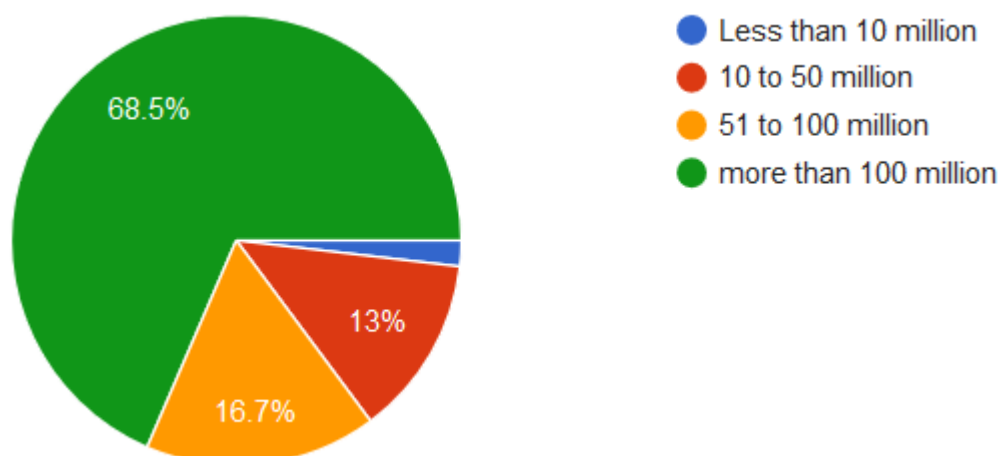


Figure 4.9: Value of Single Largest Project Experience

Figure 4.9 above indicates that the biggest group of respondents with 68.5% have single largest value of construction project experience of more than 100 million. The second biggest group at 16.7% have value of single largest value of project experience at 51 to 100 million. The third biggest group of 13% of respondents have value of single largest project at 10 to 50 million whereas smallest group of respondents at 1.8% have value of single largest project at less than 10 million.

4.3.3 Number of Construction Project Involving Project Managers / Project Management Personnel

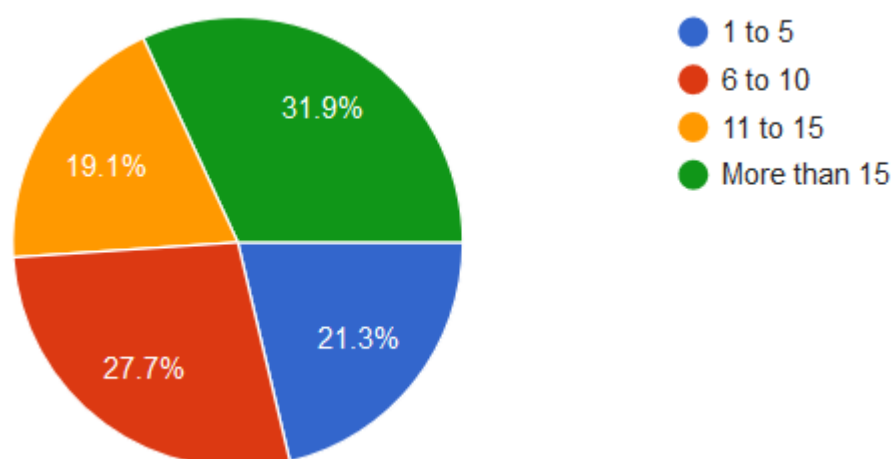


Figure 4.10: Number of Construction Project Involving Project Managers / Project Management Personnel

Figure 4.10 above shows that the biggest group of respondents at 31.9% have more than 15 projects involving project managers / project management personnel. For the second biggest group of respondents at 27.7%, they have 6 to 10 projects involving project managers / project management personnel. The third biggest group of respondents with 21.3% have 1 to 5 projects involving project managers / project management personnel. The smallest group of respondents at 19.1% have 11 to 15 projects involving project managers / project management personnel.

4.4 Cronbach's Alpha Coefficient Test

Table 4.1 – Reliability Test of Essential Characteristics Data from the Likert Scale Questionnaire

Cronbach's Alpha Coefficient	N of Items
0.781	28

Table 4.2 – Internal Consistency of Cronbach's Alpha Coefficient

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

As indicated in table 4.1 above, the Cronbach's Alpha Coefficient is 0.781 for the data for "essential characteristics of successful project managers" under the survey questionnaire. Based on table 4.2 above, any Cronbach's Alpha Coefficient value of between 0.7 to 0.8 is acceptable. Therefore, this means that the survey data collected are reliable and consistent.

4.5 Relative Importance Index

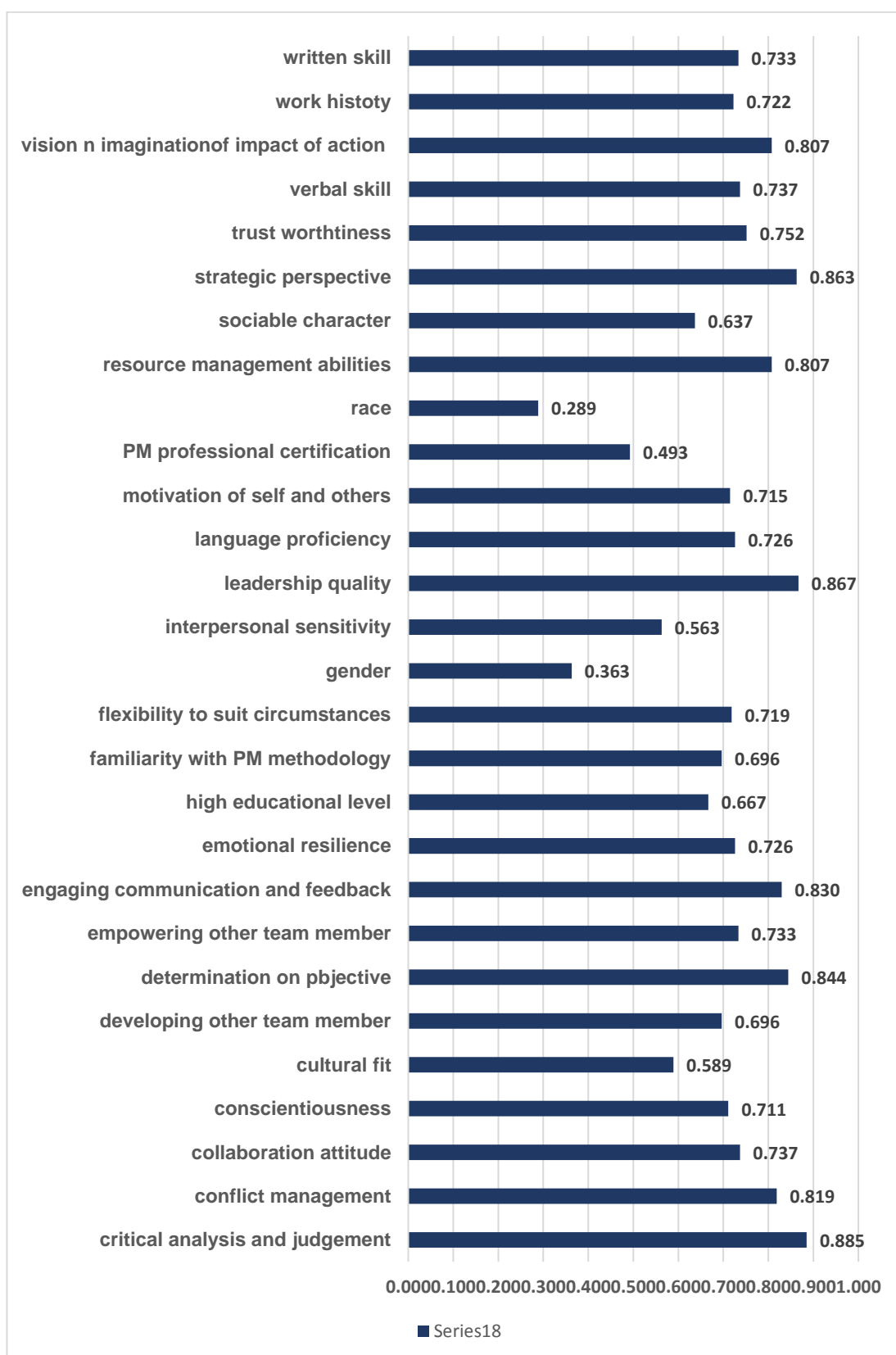


Figure 4.11: Relative Importance Index of Essential Characteristics

Figure 4.11 above shows the Relative Importance Index (RII) values of all the essential characteristics data collected from the survey questionnaire arranged in a chart. The value are being rearranged in a descending order in the following figure 4.12.:

Rank	Essential Characteristic of Successful Construction Project Manager	RII
1	Critical analysis and judgement	0.885
2	Leadership qualities	0.867
3	Strategic perspective	0.863
4	Determination on objective	0.844
5	Engaging communication and feedback	0.830
6	Conflict management	0.819
7	Resource management abilities	0.807
8	Vision and imagination of impact of action taken	0.807
9	Trustworthiness	0.752
10	Verbal skill	0.737
11	Collaboration attitude	0.737
12	Empowering other team members	0.733
13	Written skill	0.733
14	Emotional resilience	0.726
15	Language proficiency	0.726
16	Work history	0.722
17	Flexibility to suit circumstances	0.719
18	Motivation of staff and others	0.715
19	Conscientiousness	0.711
20	Developing other team members	0.696
21	Familiarity with project management methodology	0.696
22	High educational level	0.667
23	Sociable character	0.637
24	Cultural fit	0.589
25	Interpersonal sensitivity	0.563
26	Project management certification	0.493
27	Gender	0.363
28	Race	0.289

Figure 4.12: Ranking of Relative Importance Index

With reference to the Relative Importance Index as tabulated in Figure 4.12, “Critical Analysis and Judgement” is ranked as the most important at 0.885. This may be because in the role as a construction project manager, his daily main function may involve the chairing of routine and ad-hoc meeting to not only to discuss and coordinate a lot of matter arising due to design team members coordination and conflict, but also on construction site problems and also matters arising between the consultants

and the contractor. Using the raw survey data, the number of respondent who answer as “strongly agree” are at 48% whereas the number of respondent answering as “agree” is at 50% and only one respondent at 1.85% answer under the two categories of “disagree” and “strongly disagree”.

The issue of “Leadership quality” at Relative Importance Index value of 0.867 is rank as the number two most important essential characteristics. As the project leader of the management team, it is normal and expected that the construction project manager will be showing the direction for the entire management team be it in the design coordination side or on the site construction management. It is very important that the construction project manager are able to not only to lead the diverse team members but also to steer them clear of potential conflicts. Using the raw survey data, the number of respondent who answer “strongly agree” are at 40.74% wheras those who answered “agree” are at 55.55%. only one respondent at 1.85% answered under the two category of “disagree” and “strongly disagree”.

The essential characteristics of “Strategic Perspective” is ranked as number 3 with a relative Importance Index value of 0.863. This may be because in these days of fast paced construction activities and trend of mega project of not only multimillion but multibillion, it is of the utmost importance that a successful construction project manager must have the ability to strategize well ahead in the very early stage of project planning and designing and are able to forsee important mega trends so that the final product will not be out of fashion by the time of its completion few years down the road. Utilising the raw survey data, the number of respondent who answer “strongly agree” are at 46.30% wheras those who answered “agree” are at 42.60%. only one respondent at 1.85% answered under the two category of “disagree” and “strongly disagree”.

The fourth ranked essential characteristic is “Determination on Objective” at a Relative Importance Index value of 0.844. The reason for this may be because as a team leader of the construction project, the successful construction project manager are obviously expected to be very determined on the achievement of the project objective of not only on the issues of cost, time and quality but more and more, he has to meet the expectation and aspiration of all the stakeholders including satisfaction of the buyers of the end product. Anything that fall short of these expectation of all of

these stakeholder may implied partial failure of the overall project success target. Based on the raw survey data, the number of respondent who answer “strongly agree” are at 33.33% whereas those who answered “agree” are at 59.26%. Only one respondent at 1.85% answered under the two category of “disagree” and “strongly disagree”.

Next come the characteristic of ‘Engaging Communication and Feedback’ at number five in the list at a Relative Importance Index value of 0.830. This may very well be because a modern successful project manager need to be a people manager instead of just being a technical manager as he is leading the entire team of specialist who can very well managed their own technical issues at their respective professional level. However, it is the overall coordination of these professionals who each are leaders in their own field that requires engagement and communication and feedback via a “central command” that can filter and fuse these sometimes seemingly conflicting information and demands so as to achieve a coherent outcome for the overall project objective and this is exactly where a people manager will fit in. Based on the raw survey data, the number of respondent who answer “strongly agree” are at 29.63% whereas those who answered “agree” are at 59.26%. Only one respondent at 1.85% answered under the two category of “disagree” and “strongly disagree”.

The characteristics of “Conflict Management” is ranked as number six on the list with a Relative Importance Index value of 0.819. Being the overall team leader of a diverse team of equal professional in their very own special technical field such as in a modern construction project, the successful construction project manager need to be able to not only understand the diverse requirement of each and every professional members of the team but must also be well verse in deflecting and fusing these seemingly conflicting requirements and demands. Based on the raw survey data, the number of respondent who answer “strongly agree” are at 25.96% whereas those who answered “agree” are at 61.11%. Only one respondent at 1.85% answered under the two category of “disagree” and “strongly disagree”.

The second least important characteristic ranked with a Relative Importance Index value of 0.363 is “Gender”. This is to be expected because in these modern world where education and information flow is almost universally available in the majority

region of the free world, the abilities of the female gender to be on par with their male counterpart should never be an issue anymore. Based on the raw survey data, the number of respondent who answer “strongly disagree” are at 44.44% whereas those who answered “disagree” are at 37.03%. Only three respondent at 5.56% answered under the two category of “agree” and “strongly agree”.

Finally, the least important characteristic ranked with a Relative Importance Index value at 0.289 is “Race”. This is to be expected because in these modern world where education and information flow is almost universally available in the majority region of the free world, the abilities of the different races on the face of earth to acquire and assimilate knowledge should never be an issue anymore. Based on the raw survey data, the number of respondent who answer “strongly disagree” are at 70.37% whereas those who answered “disagree” are at 16.67%. Only one respondent at 1.85% answered under the two category of “agree” and “strongly agree”.

4.6 Summary

In summary, this chapter has demonstrated that the survey data collected are consistent and reliable with the Cronbach’s Alpha Coefficient test. Thus, the twenty eight numbers of essential characteristic for a successful construction project manager has been properly ranked as listed in figure 4.12. To recap, the top ten essential characteristics of a successful construction project manager are as listed below:

1. Critical analysis and judgement
2. Leadership qualities
3. Strategic perspective
4. Determination on objective
5. Engaging communication and feedback
6. Conflict management
7. Resource management abilities
8. Vision and imagination of impact of action taken
9. Trustworthiness
10. Verbal skill

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter will summarise the results of the research based on the survey data collected. It will also relate the findings of the research to the research aims and objective as listed in Chapter one. Lastly, some recommendation for future research will also be proposed.

5.2 Conclusions

The aim of this study is to find out the essential characteristics of a successful construction project manager in the Malaysian construction industry. As listed in figure 4.12, these essential characteristics have been ranked according to the Relative Importance Index. The list of top ten essential characteristics are as listed in item 4.6 above.

In addition to the research aim, this research has set out two research objectives at the beginning of this study. All the objectives have been duly achieved. The first objective of exploring whether the leadership characteristics of project manager will affect the successful implementation of the project management process has been positively answered in the literature reviewed via a desktop research.

The second objective of identifying those characteristics of the Malaysian construction project managers that are a significant factor in the implementation of the project management functions in Malaysian construction project has also been achieved with the list of essential characteristics all properly ranked using the data from the survey respondents and the Relative Importance Index.

In conclusion, this study has resulted in a useful list of essential characteristics for a successful construction project manager that is relevant to the Malaysian construction industry. This list of essential characteristics can be used as a reference point for the future soft skill training of prospective construction project manager both in the tertiary educational programme as well as upgrading of soft skill training for

junior construction project manager. It is hope that this will in turn lead to more effective and efficient management of our Malaysian governmental infrastructural development projects and thus minimise the wastage of billions of tax payer's money. On a broader perspective, these will also hopefully lead to better efficiency in the overall management of the country's resources in term of managing construction projects.

5.3 Limitation

The limitation of this research is small numbers of respondents which is only 54 numbers even though the author has emailed around 300 survey questionnaire. However, the author do have confidence that the 54 numbers of respondents are a true representation of the greater population which means the result are still true and valid.

5.4 Recommendation for further Research

Based on the results of the research, the author wish to recommend that further research to be conducted to establish ways to train the many essential characteristic needed in the making of the successful Malaysian construction project managers.

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APPENDICES

APPENDIX A: QUESTIONNAIRE FORM

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

**RE: MASTER OF SCIENCE (PROJECT MANAGEMENT) - FINAL YEAR
PROJECT - SURVEY QUESTIONNAIRE**

I am Chang Khong Thong, a final year master student undertaking a Master of Science (Project Management) postgraduate study from Institute of Postgraduate Studies and Research, Universiti Tunku Abdul Rahman. I am currently carrying out a research on the following topic: “**Essential Characteristics of a Successful Project Managers in the Malaysian Construction Industry**”.

I would appreciate if you could kindly contribute to my research by responding to the following short survey which should take no more than 5-10 minutes to complete.

There are three separate sections, responses to which will remain anonymous. It covers the survey on the perception of Malaysian construction industry practitioners on the essential characteristics that a project manager (or person of similar designation eg. site agent, construction manager, development manager etc) should possess to be successful in carrying out their role.

Please do not hesitate to contact me for further information.

Thank you for your time in helping me to complete my research.

Yours faithfully,

Chang Khong Thong

Contact number: 019-3202623

Email: ckt1963@gmail.com

Respondent particulars

Name of respondent : _____

Company name : _____

Designation : _____

Section A: Demographic Information**1. What is your gender? Please select one.**

- a. Male
- b. Female

2. How old are you? Please select one.

- a. Below 25 years old
- b. 25 to 29 years old
- c. 30 to 39 years old
- d. 40 to 49 years old
- e. Above 50 years old

3. Which of the following best describe your highest academic qualification?

Please select one.

- a. SPM (Equivalent to GCE O-Level)
- b. STPM (Equivalent to GCE A-Level)
- c. Diploma
- d. Bachelor degree
- e. Master degree
- f. PhD
- g. Others (Please specify): _____

4. Which of the following best describe your profession or area of specialization in the construction industry? Please select one.

- a. Developer
- b. Consultant
- c. Contractor
- d. Sub-Contractor
- e. Others (Please specify): _____

5. Which of the following best describe your work experience in construction industry? Please select one.

- a. Less than 5 years
- b. 5 to 10 years
- c. 11 to 15 years
- d. More than 15 years

Section B: Project Experience with Project Manager / Project Management Personnel

(Project Management personnel are defined as project team leader that does not carry the designation of “Project Manager” but nevertheless perform function similar to that of a Project Manager eg. Site Agent, Construction Manager, Development Manager etc.)

- 1. What are the major project experience that you have had with construction project? Please select one.**
 - a. Infrastructure
 - b. Residential building
 - c. Commercial building
 - d. Industrial building
 - e. Educational building
 - f. Other specialize building eg. hospital, airport, army camp etc
- 2. Do you have any project experience with Project Manager / Project management personnel? Please select one.**
 - a. Yes
 - b. No (Please proceed to Section C)
- 3. How many number of construction project have you been involved with Project Manager / Project management personnel? Please select one.**
 - a. 1 - 5
 - b. 6 - 10
 - c. 11 - 15
 - d. more than 15
- 4. What is the value of the single largest construction project that you had been involved? Please select one.**
 - a. Less than 10 million
 - b. 10 – 50 million
 - c. 51 – 100 million

d. more than 100 million

Section C: Essential Characteristic of a Successful Construction Project Manager

Construction projects are typically one-off project due to its very nature and are generally complex in its implementation. The role of the project team leader or project manager is therefore of critical importance for the successful implementation and completion of the project to meet the cost, time and quality requirements. In this respect, the personal characteristic of the project manager will directly influence the way he/she manages the construction project which will in turn directly impact on the success or failure of the project.

For each of the following questions, please select one of the following choice:

- 1 – Strongly disagree
- 2 – Disagree
- 3 – Neutral
- 4 – Agree
- 5 – Strongly agree

Essential characteristics of a construction project manager	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
	1	2	3	4	5
Critical analysis and judgement	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conflict management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Collaboration attitude	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Conscientiousness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cultural fit	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Developing other team member	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Determination on objective	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Empowering other team member	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Engaging communication and feedback	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Emotional resilience	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Education level	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Familiarity with project management methodology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Flexibility to suit circumstances	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Gender	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Interpersonal sensitivity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Leadership qualities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Language proficiency	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Motivation of self and others	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Project management professional (PMP) certification	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Race	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Resource management	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sociable character	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Strategic perspective	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trustworthiness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Verbal skill	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vision and imagination of impact of action taken	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Work history	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Written skill	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

End of survey and thank you very much for your participation!