

UNIVERSITI MALAYSIA PAHANG

BORANG PENGESAHAN STATUS TESIS**JUDUL: A STUDY ON EFFECTIVENESS OF PROJECT
MANAGEMENT CONSULTANCY (PMC) SERVICES****SESI PENGAJIAN: 2009/2010**

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I hereby declare that I have read this report and in my opinion this report is sufficient in term of scope and quality for the award of the degree of Bachelor of Civil Engineering.

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CONSULTANCY (PMC) SERVICES**

NAZIRA BINTI MAHMUD

A report submitted in partial fulfillment of
the requirements for the award of the degree of
Bachelor of Civil Engineering.

Faculty of Civil Engineering and Earth Resources
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NOVEMBER 2009

STUDENT DECLARATION

I hereby declare that this thesis entitled “*A Study on Effectiveness of Project Management Consultancy (PMC) Services*” is the result of my own research except as cited in the references. The thesis has not been accepted for my degree and is not concurrently candidature of any other degree.

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CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

In the fields of architecture and civil engineering, construction is a process that consists of the building or assembling of infrastructure. Far from being a single activity, large scale construction is a feat of multitasking. Normally the job is managed by the project manager and supervised by the construction manager, design engineer, construction engineer or project architect. Efficiency in management is needed to gain a higher level in competitiveness.

Project Management Consultancy (PMC) is one of the management solutions to improve the efficiency of a project in construction. The use of these services has been increased construction industry around the world. Even though the practice of using PMC services is new in Malaysia, more widely applied only after Malaysia

had successfully completed the PETRONAS Twin Tower Project and the KL International Airport (KLIA Project), there are more than 100 private companies of various sizes and track records registered under the Treasury that have procured Project Management Consultancy (PMC) services since 1999 (Dzulkarnaen, 2005).

The question is whether the services provided by PMC is adequate in ensuring that projects are completed accordingly within the budget or cheaper, are of high quality and meet the client needs. Hence, this study was carried out to investigate the services that are currently and should be provided by Project Management Consultants (PMC) in the Malaysian construction industry as well as to measure the level of satisfaction which is the effectiveness of the services provided by Project Management Consultant in the construction industry.

1.2 BACKGROUND OF PROBLEM

Most individual companies and organizations, which require the Project Management Consultancy services, do not have enough resources and expertise to carry the role of PMC. By considering these factors, the government of Malaysia under the Ministry of Finance had entrusted the Project Management Consultant (PMC) to manage government projects with the intention that these projects are completed efficiently on time, within budget and of the specified quality.

However, the government's good intention to obtain services provided by Project Management Consultants has recently raised several issues and problem that are discussed by the public and government. From the issues of computer labs and 16 "sick" schools and five community colleges with structural defects, the closing of Sultan Ismail Hospital in Johor Bharu due to fungal outbreak caused by faulty air-

conditioning and the latest issue where the key Middle Ring Road in Kuala Lumpur had to be closed after cracks were found (Dzulkarnaen Ismail, 2005).

The Board of Bintulu Port should act against a consultant for changes made to construction plans which caused delays in completing its one-stop administration centre, said the 2005 Auditor-General's report. It said the delays should also not have occurred if the contractor for the job had the financial capability to manage the project. An audit checked showed that the contractor had cash flow and labor problems. The report said as of October 2005, 61 directives for changes to be made to the building which raised the cost by RM4.85mil (THE STAR, 2006).

Vice President of Persatuan Kontraktor Melayu Malaysia (PKMM), Datuk Muhammad Muhiyudin said that the overload works and projects given to the consultants and contractors also bring delays to certain projects (BERNAMA. 2001)

According to Andrew A.L Tan (2004), a project without Project Management Consultancy (PMC) is like "a ship without captain". In the absence of "watch dog" the design consultants will submit mediocre and interior and non-functional designs and drawings resulting in difficulty in construction leading to project delays and extra cost and poor aesthetic. Without PMC to vet and comment on their designs, mistakes go unchecked and the client is short changed. There is no strategic, effective and efficient and knowledgeable project leader to set and monitor and control high standards in design parameters and construction. The net result is chaos and non-performance of the project team and surely, the project will suffer massive project delay, time and cost overrun and poor quality in design and construction and is sure recipe for project failure. Yet appointing the wrong guys for the job is sure recipe for the project failure.

1.3 PROBLEM STATEMENT

The service of Project Management Consultancy (PMC) was no longer been used by the government after some issues such as the failure of Highland Tower. According Andrew A.L Tan, corporate leader, project director and PMCs is the key responsible for project success or failures. This means that, if a certain project is fail or success, it was not because of PMC alone. Some of the issues that been talked about the services of consultant firms are the delays that seldom happens and over-budget situations.

This is one of the reason that the government did not use the services that been provided by PMCs. The question here is, are the services by PMCs seriously not sufficient enough as been told by the Media? This has influenced the Government decision to stop the services of PMCs firms. Hence, this negative perspective can be stopped if they (media, clients and government) understand the responsibility, scope of work and understand what the roles of PMCs really are.

Therefore, it is important to define what exactly is PMC, the importance of PMCs services and what are the services that they provide, so that their scope of work are clear in order to avoid misunderstanding on their services on future and to change the fact that the failure of a project is not fully the PMCs fault.

1.4 OBJECTIVES OF STUDY

The objectives of this study are as follows:

- i) To study what is Project Management Consultancy (PMC)
- ii) To identify what are the roles and responsibilities of PMC
- iii) To identify the effectiveness of PMC Services

1.5 SCOPE OF STUDY

This study was carried out based on the literature review, and data collected by the given questionnaires to certain consultants and construction company that has been selected. The study is limited to Project Management of construction and infrastructure project undertaken by Project Management Consultant in Bintulu, Sarawak.

1.6 METHODOLOGY

The methodology that been used in this study are Literature review, and data collection by giving questionnaires. Literature review studies were important to determine what exactly Project Management Consultancy (PMC) is. The questionnaires study is to identify what are the services that been provided by PMCs and also to determine the effectiveness of using PMC services, which will results the importance of the PMCs service.

Figure 1.0 below shows the methodology that been used in this study. The chart shows the process from beginning of this project until the project is finished. This project starts with literature review and ends with conclusion and recommendation.

Scope of this study includes these following procedures:

- i) Literature review of the journals, articles and reference books.
- ii) Interview with person in charge at any chosen consultancy companies and with any contractors.
- iii) Data collection includes questionnaires and observation to the respondents in Bintulu.

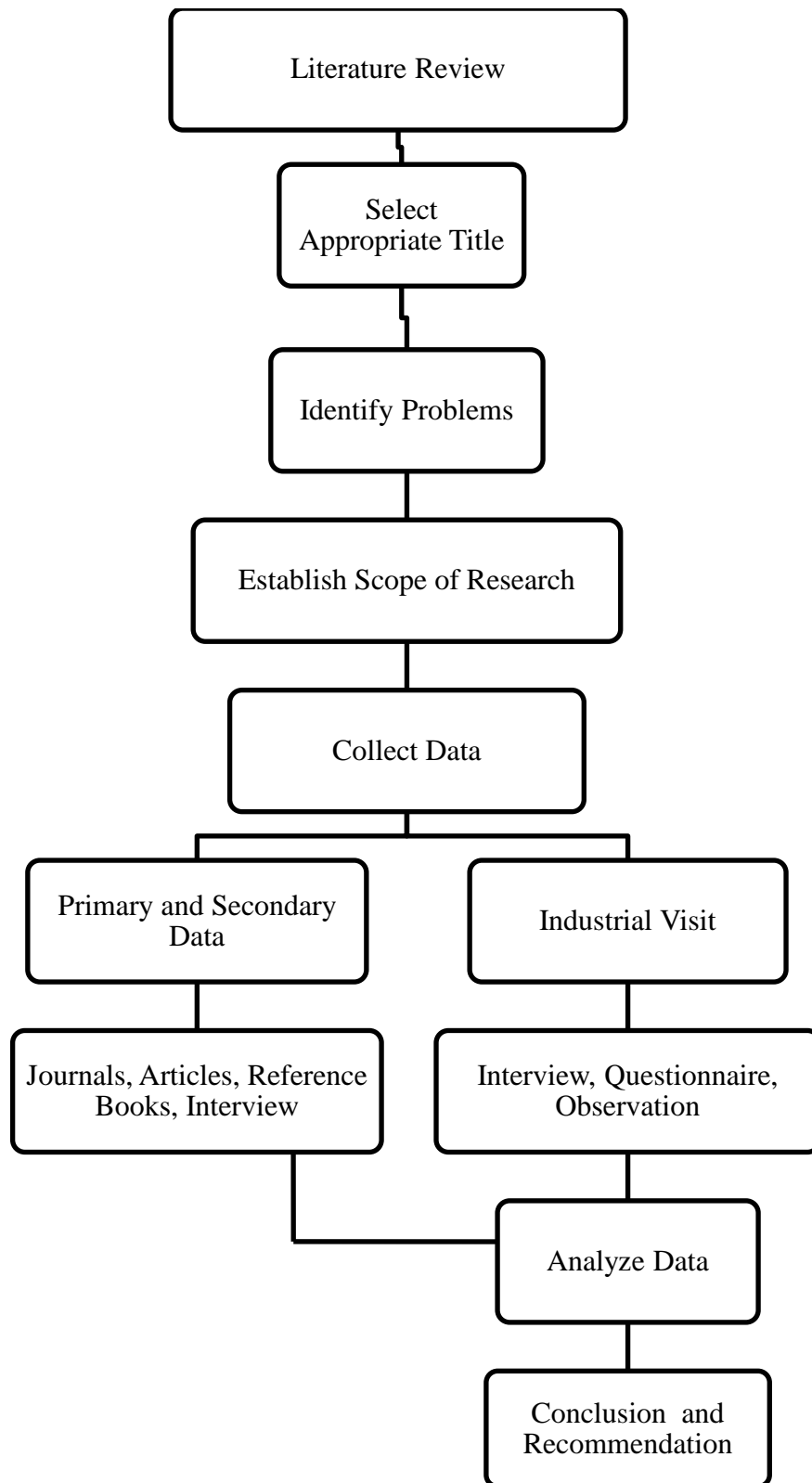


Figure 1.0: Flowchart of Methodology

1.8 SIGNIFICANCE OF STUDY

The consultant groups were set up in the 1990s to help the government manage infrastructure projects. These consultancies were formed after the Works Ministry's Public Works Department was deemed to have too few engineers and inadequate expertise to handle so many diverse projects at the same time. Most are run by Bumiputra Consultant Firms and with the termination of the Project Management Consultancy (PMC) system, many of these firms may have to close down. As a result, many professionals and the university graduates in this field will have fewer opportunities in finding a job. (Dzulkarnaen, 1990)

Even though the problem has been caused by the several parties and factors, the credibility of PMC's need to be realigned. Hopefully that after this study has been carried out, it could provide necessary information and knowledge for the parties interested in using services of Project Management Consultancy (PMC) and also can help the consultants to provide better service to the clients to clear all the misunderstanding and to know the reasons of the negative perspective since the crisis among PMC and Ministry of Finance that happens in early millennium. Hence, the PMC can improve themselves especially in their skill and experienced whenever they handling a project.

1.8 EXPECTED OUTCOME

After doing this study, it was expected that all the objectives of the study can be achieved which is the definition of the Project Management Consultancy (PMC) can be defined. Besides that, at the end of this study, the importance of these services can be determined by determining the effectiveness of PMCs Firms.

Hopefully that their scopes of work are clear in order to avoid misunderstanding on their services on future and to change the fact that the failure of a project is not fully the Project Management Consultancy (PMC) faults. Besides that, hopefully this study can help the consultants themselves to improve their services by knowing their roles and responsibilities.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

Project Management Consultancy (PMC) is one of the management solutions to improve the efficiency of a project in construction. The use of these services has been increased construction industry around the world. Many companies have invested a lot of effort into training project managers to employ this approach. Some have achieved a more efficient way of completing projects; others have not been able to integrate project management into a project to successful level. Some organizations had to use the capability of others who offer the Project Management Consultancy (PMC) services in order to accomplish their goals and objectives.

This chapter presents the background Project Management Consultants by defining the meaning of consultant in order to clarify any misunderstanding the services provided by the PMCs. The discussion also recovered the responsibilities of PMC and some issues that evolve PMCs.

2.2 Definition of Project

A project is a finite endeavor (having specific start and completion dates) undertaken to create a unique product or service which brings about beneficial change or added value. This finite characteristic of projects stands in sharp contrast to processes, or operations, which are permanent or semi-permanent functional work to repetitively produce the same product or service. In practice, the management of these two systems is often found to be quite different, and as such requires the development of distinct technical skills and the adoption of separate management (Wikipedia,2009)

According to James and Albert, 1994, a project can be defined as an item of work that required planning, organizing and dedicating resources and expenditure funds, in order to produce a concept, a product or a plant.

On the other hand, Dhillon (2002) define project as a plan of work or assignment, which is also referred as a task or a job. Harold (2003) also defined project as any series of activities and task that have a specific objective to be completed within certain specification, have defined start and end dates, have funding limits, consume human and non-human resources and are multifunctional.

2.3 Definition of Project Management

Dhillon, (2002) defines project management as the art of directing and coordinating material and human resource by throughout the project life span by utilizing various management methods and techniques to achieve effectively predetermined goal of scope, quality, time, cost and participation satisfaction.

Project Management also defined as the systematic application of management and construction expertise-through planning,design and construction processes-for the purpose of controlling the time, cost and quality of design and construction. Although the success of a project is influenced by a variety of factors, in practically all cases, successful project management will improved project quality while helping to maintain project budget and scope (Kuprenas,et al, 1999).

Project Management is defined as the process by which the appointed Project Management Consultancy (PMC) or Project Manager such as plan, organize, schedule, implement, manage, monitor, control, track, solve problems, make decisions, lead, inspire and motivate the entire project consortium team involve in a project that consume resources (time, people, space, money, computers, machineries, plants, landscaping, materials, internet, knowledge-based experts, etc) in order to achieve set and stipulated project objectives and deliverables usually in terms of but not limited to primary triple objectives of time, cost and quality and secondary objectives of promoting shareholders, stakeholders and company's interest and tertiary objectives of excellence in all aspects of design, finance and construction while enhancing the aesthetic of the built environment and taking care of client's interests in terms of functional and financial definitions, end-users well being and social and moral obligations to society, community, nation-building and the world (Andrew A.L Tan, 2004).

2.4 Definition of Project Management Consultancy

There is no specific definition of project consultant. Most definition described management consultant by their roles and responsibility and services that they provide using tools and skills they have in delivering a task assigned by the client or the owner of the project (Dzulkarnaen, 2005).

There is some confusion with the terms to describe the word consultant. Some of the contractors do some consulting, and some of the consultant also acts as contractors. This happens because the roles and responsibilities of consultants is very wide and depends on their skills and experiences.

Consultation is happening if the clients seek expert knowledge or some opinions on some engineering problems or anything that involves engineering matters. Consultation maybe brief or extended which some involve only few hours of time, with the clients sitting across the desk of the consultant. Other consultation may require traveling, some period a substantial portion of a consultant's time over a period of several months, and repeated presentations and discussions with the client (Maxwell, 1982).

Foxhall (1976) has a clearer definition of both construction consultant and construction manager. Construction manager is a firm that applies knowledge of construction techniques, conditions and costs to the three phases of decision, design and 14 delivery of a project. First, as a construction consultant he clarifies the time and cost consequences of decision and design options as they occur. Second, as a construction manager he enters, still as a professional, into construction scheduling, repurchasing of critical materials, advising on the method of obtaining contractors and awarding contracts, and coordination and direction of all construction activities, including those of the producers of systems and sub-systems.

The service provided to business, public or other undertakings by an independent and qualified person or persons in identifying and investigating problems concerned with policy, organization, procedures and methods, recommending appropriate action and helping to implement those recommendation

Management consulting is an advisory service contracted for and provided to organizations by specially trained and qualified persons who assist, in an objective and independent manner the client organization to identify problems, analyze such problems, and recommend solutions to these problems and help, when requested, in the implementation of solutions. (L Greiner and R Metzger, 1983)

2.5 Roles and Responsibilities of Project Management Consultancy

A project comprises a complex and complicated host of activities with specific objectives. Therefore the role of the Project manager as the Project Leader is often complex as well (Andrew, 1996). The roles and duties of a project manager according to CIOB (2002) will vary depending on the client's expertise and requirements, the nature of the project, the timing of the appointment and similar factors. This is similar to Philip's (2000) view which state that the Project manager's role and scope of duties can be structured to suit the individual needs of a particular client.

PMCs/PMs have different roles or scope of works and services depending on whom they represent, but the principles and fundamentals of project management as enshrined in the Project Manual Body of Knowledge manual area applicable to each of the three category: (Andrew A.L Tan2004)

- 1) PMCs representing the Clients (public/government) and private sectors (developers, investors, landowners)
- 2) PMCs representing the Designers (architects, engineer ,etc)
- 3) PMCs representing ht Contractor (traditional, turnkey, design and build)

The “Institution of Project Management-Malaysian Chapters” has simplified six roles and responsibilities of Project Consultant, which are:

- Handling the project by analyzing the goal and works that will be done
- Handling all the people involve with the project
- Ensure that all the information is enough to make the project flow consistent by handling the connection with all the parties that involve with the project.
- Deal with the time according to plan.
- Survey the quality to ensure the work is satisfying
- Manage the cost of the project, hence the project will be done at the minimum cost which is according to the amount of money that been provided by the clients.

Project Management Consultancy (PMC) that been selected is basically to produce a product by considering the technical specification, cost and timetable by using the existing organization sources. PMC also responsible in making decision to ensure all the objectives of the project has been reached.

Andrew (1996) added that in the building and construction sector, the project manager plays various roles which cover aspects such as planning, leading, organizing, guiding, coordinating, complementing, supplementing, controlling, supervising, motivating, inspiring, monitoring the activities of the entire project consortium team of consultant and contractors. The objective is of course to achieve set and stipulated corporate visions, policies, goals and project objectives.

Edwin (1984) in his research which investigated the use of project management for four public sector clients found that the project manager's role was seen as that of a liaison officer interfacing between the client and the rest of the contributors to the project with the primary role to ensure that the project was systematically planned and built within agreed cost, programmed time and specified quality standards.

Whatever the project manager's specific duties in relation to the various stages of project are, there is the continuous duty of exercising control of project time, cost and performance (CIOB, 2002).

Figure 1 is an illustration produced by CIOB (1988) which demonstrates in general terms the pivotal role of project management in representing the clients in his relationship with the design and construction organizations.

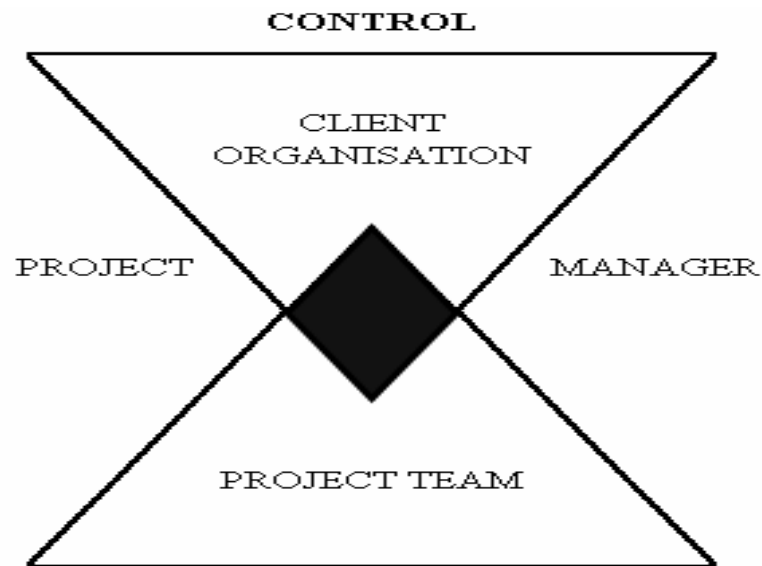


Figure 2.0: Role of Project Management in representing the client

The role of Project Management Consultancy (PMC) is to achieve corporate goals and project objectives. His primary role is to lead, guide, coordinate and synchronize the professional inputs from various specialist consultants. It also includes monitoring, controlling, solving problems, conflicts management and making decisions. His role is multi-disciplinary and his responsibility is to synthesize and integrate all the aspects of a project into a cohesive whole.

The PM role is to lead, guide, steer, inspire, and motivate his entire project team and to marshal all necessary resources to implement and manage tasks and activities in order to achieve milestones and project deliverables, usually in terms of time cost and quality in order to ensure project success, avoid or reduce project failure altogether (Andrew A.L Tan, 2004).

2.6 Services Provided by Project Management Consultancy

Project management services are not a substitute for top management's own reporting structure. They are the independent sources of objective information that prudent management demands from a situation involving risk (Philips, 2000).

In line with Philip's (2000) views, CIOB in 1988 clarified that the intention of the appointment of a Project Manager is to relieve the client of responsibility of providing an organization to deal with the design and construction of the project. The client retains the degree of control necessary for him to satisfy his wishes and preferences and will be required to make key decisions. There are five stages which require the services of Project Management Consultant (PMC): initial stages with the client, feasibility stage, pre-construction phase, construction phase and completion stage as listed by Chartered Institute of Building in 1988. Figure shows the services provided by PMC.

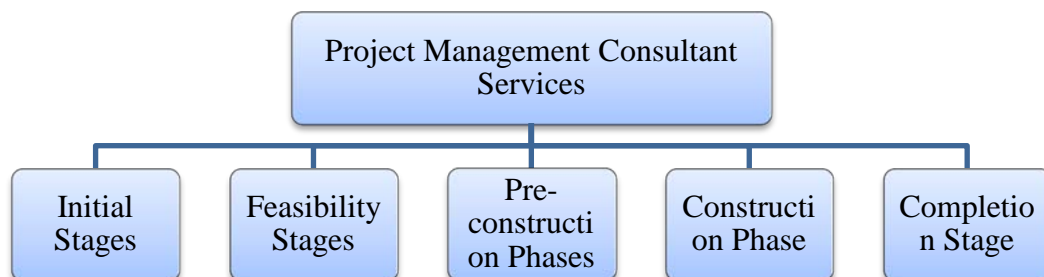


Figure 2.1: Stages involving Services by Project Management Consultancy

Many consulting engineering firms specialize in specific areas of engineering-such as geotechnical, environmental, traffic and structural- and provide their services to a prime engineer, architect, or owner. Few consulting firms are qualified to provide complete service for all projects, thus, it is common to use associate consulting professionals to provide specialized services. The services provided by consultants can be grouped into three broad categories;

1. Consultations, investigations, and studies,
2. Services relating to construction projects and,
3. Special services

(Alexander Bell Drive,2003)

2.7 Problems and Issues of Project Management Consultancy

The management of construction work becomes tougher and more challenging nowadays in Malaysia. This is mostly because of the continuous change and rapid improvement of the construction industry itself. Projects are becoming much more complex and difficult. This situation also brings some effect to the Consultants. They have to face changes, exemplified by the changes in new technology that keeps on improvising, changes in commercial parties, shift in social attitudes and also clients that nowadays becoming very sophisticated and knowledgeable placing the emphasis more than ever on tight completion dates and higher quality standards (Wan Zulkifli Wan Yusof, 2003).

According to BERNAMA, 2001, the issues of giving up all the project back to Jabatan Kerja Raya (JKR) instead of Project Management Consultancy (PMC) was happening due to some of the building failure, which are 16 schools and five community colleges with structural defects, the closing of Sultan Ismail Hospital In Johor due to fungal outbreak which is caused by faulty air-conditioning and the latest issue where the Middle Ring Roads in Kuala Lumpur has been closed after few cracks were found. The main reason that the Ministry of Finance gave the responsibility to PMCs firstly is because the JKR have more projects to be handle.

These issues have changed the positive side of using PMCs services and this make the blame all goes to PMCs. However, every issues and problems happens among the consulting engineers are mostly because of management failure, lack of experience among consultants and economic factors.

2.7.1 Management Problems/Issues

According to The Star (2006), the delays of Bintulu Ports' one-stop administration centre is mostly because of improper decisions procedure. The project only 87% complete after ten (10) months after the due completion date. After some audit check, the contractor had cash flow and labor problems. The contractors have problems in getting the work permits and workers, while the sub-contractor was suing the main contractor, which is causing two more months delays. Furthermore, the contractor had been asked for extension totaling 469 days, which is not part of the original plan, and this cause shortage of material. The report also said that the consultant was either overpaid or plaid earlier than required.

Regarding the problems faced by consulting engineers in carrying out the design and project implementation, most of the respondents felt that too many projects in hand is the biggest obstacle in implementing and monitoring the project

effectively. The consultants felt that the too many projects in hand may diverse the concentration and affect the performance of the consulting engineers.

In Ipoh, Datuk Muhammad Muhiyiddin (Vice President of Persatuan Kontraktor Melatu Malaysia) also said the same things which is the amount of project that must been handled by the consultant in one time is out of hand can caused delays of the projects. He also said that even the best and most dedication consultant of contractor also can make the same mistake if the project that they handle is over their limits.(Berita Harian, 2005)

2.7.2 Economic Problems

The Canselor of Persatuan Kontraktor Melayu Pulau Pinang , MR. Mohammad Fadzil Hassan said to BERNAMA, the mistakes among consultant were happened because of unexpected problems, which are mostly because of the raise of the materials price in construction. Besides that, the client who are involve and asking for late changing during the construction works also can cause delay because this is out of the original plan. (Berita harian, 2005)

The raise of the price of oil also can affect the engineers themselves. They have to face all the money problems because when the price of oil increases, the total money spent monthly also will increases but their salary was still the same. This also been said in The Journal “The Role of Consulting Engineers in Project Development”, which stated that one of the top three ranked problems faced by consulting engineers are consulting engineers that is not satisfied with their salaries. According to the consultants, money plays important role in motivating people, especially when the economy is unstable. This means that low salary do affects the consulting engineers’ performance.

2.7.3 Lack of Experience among Consultants

According to the research that been done by Wan Zulkifli Wan Yusof et al. The level satisfaction on the consulting engineers' were willing to provide technical supports, their feedback were sometimes quite slow. These had affected the smoothness on the construction phase of the project. From the responses, it was found out that the clients were a bit concerned on the consulting engineers' site experience. They felt that most of the consulting engineers could not provide very good design due to lack of site experience.

Mr. Mohammad Fadzil also giving a comment about the lack of experience among contractors and consultants is the main factors in a project failure. He also mentions that if the project was given to the experienced contractor, the problems and issues will not occur.

2.8 Importance of Project Management Consultancy Services

On the contrary, the Project Management Consultancy (PMC)/Project Manager is the overall project leader, coordinator, integrator, problem solver, decision maker, inspire, motivator, controller, planner, implementer, spokesman, programmer, innumerable tasks and activities to do. He is in charge of all resources such as time, cost, quality, and human resources and he has to grapple with thousand of project people and innumerable tasks and activities. Hiring PMC also important to ensure the effectiveness of a project. This means including better delivery, quality, and operating relationship.

An excellent Project Management Consultancy (PMC) can save his clients millions of dollars for without them, it is easy to pull wool over the eyes of the clients and they did not get value for their ringgit. The PMC also vet the works of the entire design, contract and construction team including architects, engineers, quantity surveyors, contractors, sub-contractors and supervisory team. PMC sets the highest standards in formulating design parameters and in construction and supervision. He oversees the tendering process, contract documentation, bill of Quantity (BOQ), contract specifications and taking off quantities to make sure that they are accurate. In a brief, without PMC, it is a free for all resulting in mismanagement and wastage of resources far worse than incompetence of a few PMCs (Andrew A.L Tan, 2004).

CHAPTER 3

METHODOLOGY

3.1 Introduction

The aim of this study is to define what Project Management Consultancy (PMC) is and at the same time to identify the services provided by PMC and the importance of PMC in construction project. An organized and suitable study methodology is needed to ensure that the effectiveness of the study process. All needed information and data can also be obtained through a well-organized plan or methodology which outlined various stages in collecting information and data.

The study methodology is planned by stages according to their priorities and functions in order to assure the effectiveness of work. The work will be divided into few stages which include Preliminary Stage, Literature Review, Collecting Data and Information and Conclusion.

3.2 Preliminary Stage of Study

At this stage, preliminary investigation and observation have been made within the site construction in Kuala Lumpur area. Observation on the services provided of Project Management Consultancy (PMC) has been carried out to understand more about PMC and their services. After this, the scope of the study has been determined and is followed by the planning of the methodology of the study will be conducted following the preliminary methodology.

3.3 Literature Review

Through the literature review, a clearer framework of this study has been established. The purpose of writing the literature review is to provide the background of study, convey the knowledge and ideas that have been established and also the strengths and weaknesses of the topic. The information could be obtained from journals, book articles, reports, and also internet pages.

3.4 Information and Data Collection

There are two differences sources for information and data that have been collected which are preliminary data and secondary data. Collection of the primary

data which involves questionnaires from construction company either Government or Private Company in Kuala Lumpur area.

All the questionnaires are based on the objectives of this study. The collected data from the questionnaires will be analyzed. Besides that, interviewing the consultant or contractor also is another way to collect the primary data. From this process, the respondent's view and advice could be obtained based on their experience.

Secondary data is collected from reference books, journals, articles, conference and unpublished material including internet website. The information which can be obtained from these sources includes the definition of Project Management Consultancy and also the responsibility of Project Management Consultancy (PMC) and their services.

3.5 Questionnaire

The main source of information obtains for data analysis is from the questionnaires. These questionnaires will be given to the engineers and contractor to get the practical data which show the actual situation of the PMC's services. There might be 50 questionnaires been given to the selected respondents.

3.5.1 Questionnaires Design

The questionnaires was designed based in the literature review that have been done earlier which consists of the services of Project Management Consultancy (PMC), and the difference between project that using PMC services and the project that not using this service. Besides that, is to survey level of satisfaction of using PMCs services and determine the advantages of using this service. The questionnaire is design as both open and closed-ended question.

Open ended choices means no options or predefined categories are suggested. The respondent supplies their own answer without being constrained by a fixed set of possible responses. Closed-ended choices means respondents' answers are limited to a fixed set of responses such as yes or no answer. These questionnaires will be divided into three parts, which is part A, B and C.

3.5.2 Questionnaires Part A

The objectives of this part are to find the respondents' information such as company and the respondents' name and also his position. In this part, the question will be in open and ended questions. The other objective of this part is to find whether the respondent know what is PMC and to know whether the respondent use PMCs services.

3.5.3 Questionnaires Part B

The objective of this part is to find the roles of Project Management Consultancy (PMC) in construction industry. The question in this part will be closed ended question. The question will be asked based on certain information that have been gained on literature review. The answer is based on the knowledge and experience of the respondent about consultancy services. The answer choices maybe in most agree, agree, average, not agree and very not agree. The result of this part will show the most important role of a consultant.

3.5.4 Questionnaire Part C

The objective of part C in the questionnaire is to determine the effectiveness of Project Management Services. The question of this part will be in closed ended question. The questions in this part will focused on satisfaction level of PMCs services based on the respondents' knowledge and experiences. The question will be providing some spaces for the respondents to jot down their suggestion and comments.

3.6 Analyze Data

The Data Collected from the questionnaire survey was analyzed using Average Index (AI) method by using Microsoft Excel.

3.6.1 Average Index

AI is calculated based on the following formula (Al-Hammad, A.Mohsen and Assaf S,1996)

$$\text{Average index} = \frac{\sum [a_i x_i (\sum X_i)]}{\sum X_i}$$

Where,

a_i = constant expressing the weight given to i

x_i = Variable expressing the frequency of response for $i = 1,2,3,4, \text{ and } 5$

$i = 1,2,3,4,5$

The modified classification for rating scales done by Abd Majid and Mc Cafter (1997) will be used. The classifications for the rating scale are as follows:

1 = Least agree

2 = Not agree

3 = Averagely agree

4 =Agree

5 =Very agree

3.7 Interview/Site Visit

The fining was further strengthening by interview session with experience personnel. Various interviews have been carried out with contractors and engineers to get their opinion based on their experience towards consultancy management. Interview is important in this study to seek further clarification and details of issues identified in the questionnaires. Besides that, interviews are also required in order to relate the theories and issues obtain from the literature studies. The interviewed was an open-ended interview. The engineer will be asked any question by referring to the literature review that has been chosen and he will gave his opinion based on the question.

CHAPTER 4

DATA ANALYSIS AND RESULT

4.1 Introduction

In this chapter, analysis of roles and responsibilities of Project Management Consultancy (PMC) and the effectiveness of their services is done according to method in Chapter 3. Data will be collected by giving questionnaires and also site visit. The first objective is completed by doing site visit or interview.

The other objectives are discussed on data analysis from questionnaires that have been distributed to the construction and Consultant Company of my study area. The purpose of this questionnaire is to get information from the respondent about the roles and responsibilities of Project Management Consultancy and also to determine the effectiveness of their services. Besides that, the most important purpose is to study the effectiveness of PMC services. All data obtained from the questionnaires have been analyzed using Microsoft Excel (Average Index Method). The feedback frequency will be calculated and presenting in table and figure.

4.2 Site Visit Analysis

In order to achieve one of the objectives of the study, an interview has been conducted. This interview has been done in Bintulu, Sarawak with both government and also private consultants and contractors.

According to Mr Mahathir from Bintulu Development Authorities (BDA), Project Management Consultancy (PMC) is the one that responsible to ensure the objectives of a project were achieved. PMC is a middle man between client and contractors. Problems that among occurs among PMC are that their reactions or actions in a project are slow whenever there are any problems during projects construction.

According to Mr Mohammad from Bintulu Port Sdn Bhd, PMC acts more as a planner and also as a supervisor in a project. He said that PMC is very important to ensure the project is finish due to time and according to qualities that the client wants.

4.3 Questionnaire Analysis

In order to achieve the objectives of the study, the questionnaires have been distributed by hand and by email to company and consultants at my study area, Bintulu, from July 2009 until 19 September 2009.

The purpose of this questionnaire is to get information from the respondent about the roles and responsibilities of Project Management Consultancy (PMC). Besides, the other objective is to study the effectiveness of their services in Bintulu.

The modified classification for rating scales done by Abd Majid and Mc Cafer (1997) will be used. The classifications for the rating scale are as follows:

- | | |
|--------------------|--|
| 1) "Very Agree" | $4.50 \leq \text{Average Index} \leq 5.00$ |
| 2) "Agree" | $3.50 \leq \text{Average Index} \leq 4.50$ |
| 3) "Fairly Agree" | $2.50 \leq \text{Average Index} \leq 3.50$ |
| 4) "Disagree:" | $1.50 \leq \text{Average Index} \leq 2.50$ |
| 5) "Very Disagree" | $1.00 \leq \text{Average Index} \leq 1.50$ |

Table 4.1: Details of the respondents of the questionnaire

Section	Detail
A	Respondents details
B	Roles and responsibilities of PMC
C	Effectiveness of PMC Services

4.4 Section A: Respondent Details

The respondent of the questionnaire survey consist of consultants and also contractors in Bintulu From 50 sets of survey form that has been distributed for person who involved in civil construction, only 20 respondents from private and government sector are giving cooperation in these studies.

Details of number of respondents who give feedback from the questionnaire and the success rate from survey are shown in Table 4.2 below:-

Table 4.2: Respondents Success rate

Amount Distributed	Number of Respondents	Success Rate (%)
50	20	40%

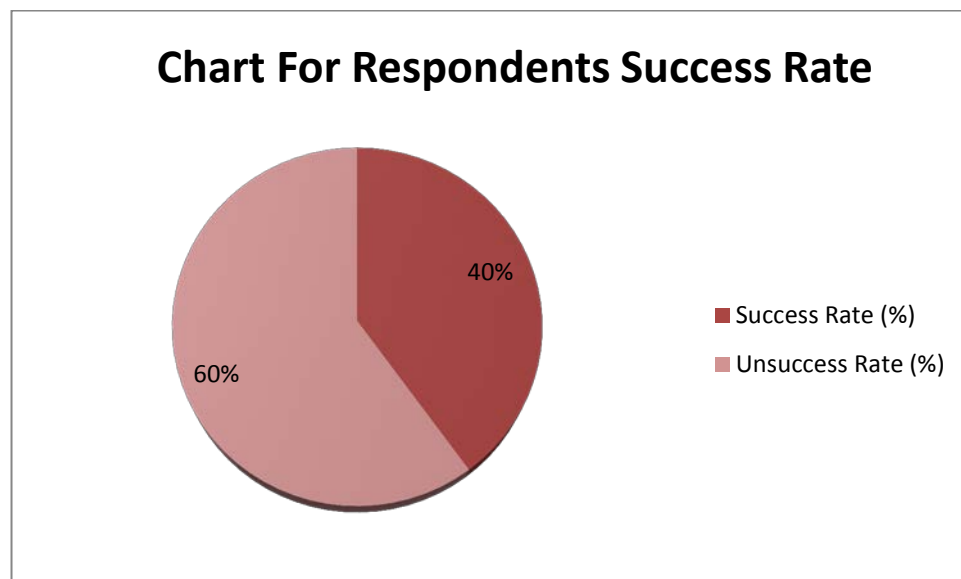


Figure 4.1: Chart for Respondents Success Rate

4.5 Section B: Roles and Responsibilities of Project Management Consultancy (PMC)

This section is analyzed the roles and responsibilities of Project Management Consultancy (PMC). Four major roles and responsibilities of Project Management Consultancy (PMC) has been chosen which are planning, supervising, leading and also problem solver.

4.5.1 Role s and Responsibilities of PMC as a Planner

Figure 4.2 shows the results of first roles and responsibilities in section B, percentage of roles and responsibilities of PMC as a planner.

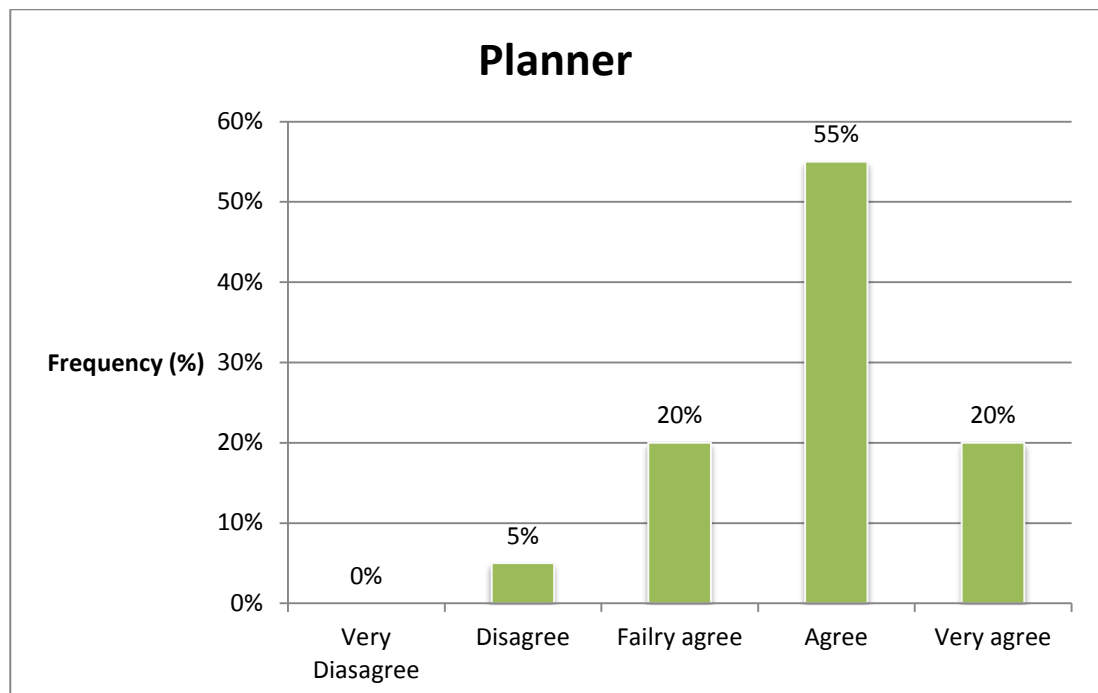


Figure 4.2: Percentage of the frequency of PMC as a planner

As shown in figure 4.2, 55% respondents agreed role of PMC is a planner in a project. This is because PMC is the one that handling all the tendering process and the one that communicate with contractor and also client.

4.5.2 Roles and Responsibilities as a of PMC Problem Solver

Figure 4.3 shows the result of second roles and responsibility of Project Management Consultancy (PMC), frequency percentage of roles of PMC as a problem solver. Only 45% agreed that PMC is a problem solver. There are also some respondents disagree. This is because PMC hardly went to site and usually contractor themselves solving the problems that occur in site.

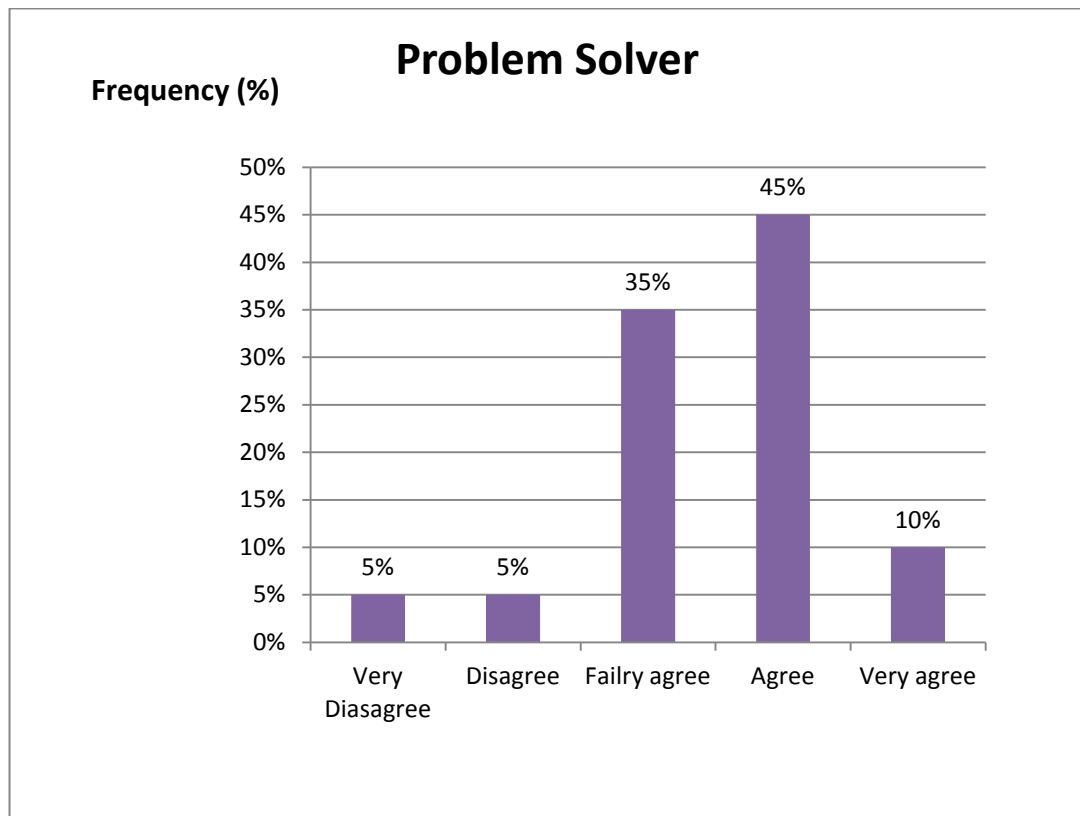


Figure 4.3: Percentage of the frequency of PMC as a problem solver.

4.5.3 Roles and Responsibilities Supervisor

Figure 4.4 shows the result of the third roles and responsibilities that been chosen in Section B, which is the frequency percentage of roles of PMC as a supervisor.

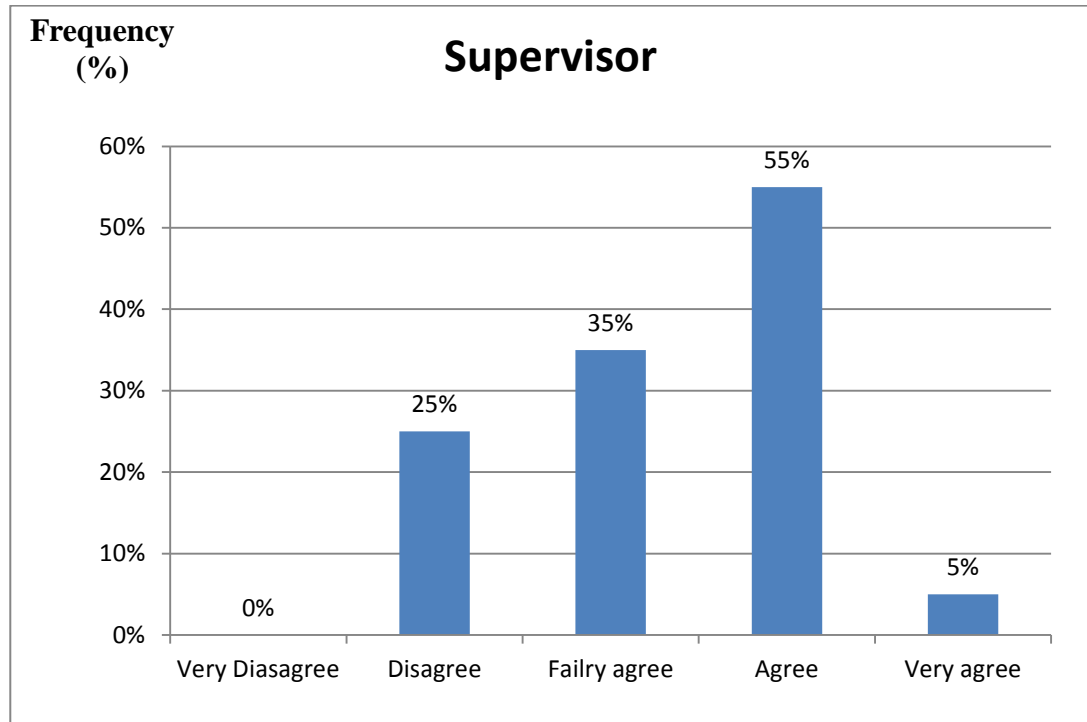


Figure 4.4: Percentage of Frequency of Roles of PMC as supervisor

As shown in figure 4.4, 55% respondents agreed that roles and responsibilities of Project Management Consultancy (PMC) are as a supervisor. This is because.PMC do very well in ensuring all the works is according to the original plan

4.5.4 Roles and Responsibilities of PMC as a Leader

Figure 4. shows the result of the third roles and responsibilities that been chosen in Section B, which is the frequency percentage of roles of Project Management Consultancy (PMC) as a leader.

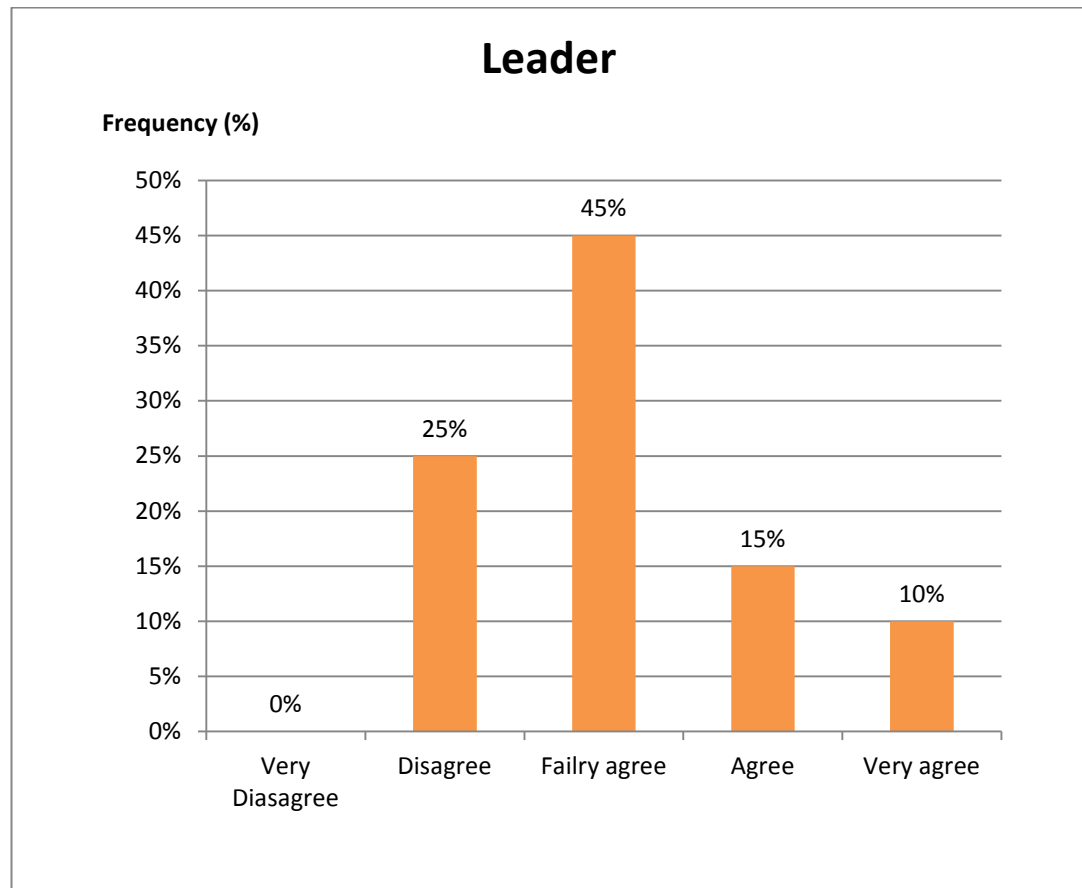


Figure 4.5: Percentage of Frequency of Roles of PMC as a leader

As shown in figure 4.4, 45% respondents fairly agreed that roles and responsibilities of PMC are as a leader.. However, 25% of respondents are disagree that PMC is a leader. This is because PMC does not take control overall project, but the client is the one that make all decisions. (Mahathir, 2009)

4.5.5 Summary of Result for Roles and Responsibilities of PMC

The modified classification for rating scales done by Abd Majid and Mc Cafter (1997) will be used. The classifications for the rating scale are as follows:

1) “Very Agree”	$4.50 \leq \text{Average Index} \leq 5.00$
2) “Agree”	$3.50 \leq \text{Average Index} \leq 4.50$
3) “Fairly Agree”	$2.50 \leq \text{Average Index} \leq 3.50$
4) “Disagree:	$1.50 \leq \text{Average Index} \leq 2.50$
5) “Very Disagree”	$1.00 \leq \text{Average Index} \leq 1.50$

In section B of the questionnaire, the result of AI for roles and responsibilities is shown at table 4.3.

Refer to table 4.3, mostly respondents agreed that planner is the main role of PMC in a project with 3.91 AI value. It is followed by supervisor (3.6), problem solver (3.5) and leader (2.95). The reason that Planner is main roles of PMC is because PMC is the one that in charge of all resources such as time, quality and cost. However, PMC is not a leader because the one that make a decision and fully take control is usually the contractor or the client themselves.

Table 4.3: Result of Average Index for Roles and Responsibilities of PMC

Roles and Responsibilities		Very Disagree	Disagree	Fairly agree	Agree	Very agree	AI	Ranking
Planner	TR	0	1	4	11	4	3.91	1
	PR	0%	5%	20%	55%	20%		
Problem Solver	TR	1	1	7	9	2	3.5	3
	PR	5%	5%	35%	45%	10%		
Supervisor	TR	0	5	7	11	1	3.6	2
	PR	0%	25%	35%	55%	5%		
Leader	TR	0	5	9	3	2	2.95	4
	PR	0%	25%	45%	15%	10%		

TR= Total Respondent

PR= Percentage of Respondents

4.6 Section C: Effectiveness of PMC Services

This section is analyzed the effectiveness of PMC services in a project. Four major roles and responsibilities of PMC have been chosen which is planning, supervising, leading and also problem solver.

4.6.1 Effectiveness of Project Management Consultancy (PMC) Services as a Planner

Figure 4.6 shows the results of first category of PMC in Section C, which is percentage of frequency of PMC as a planner

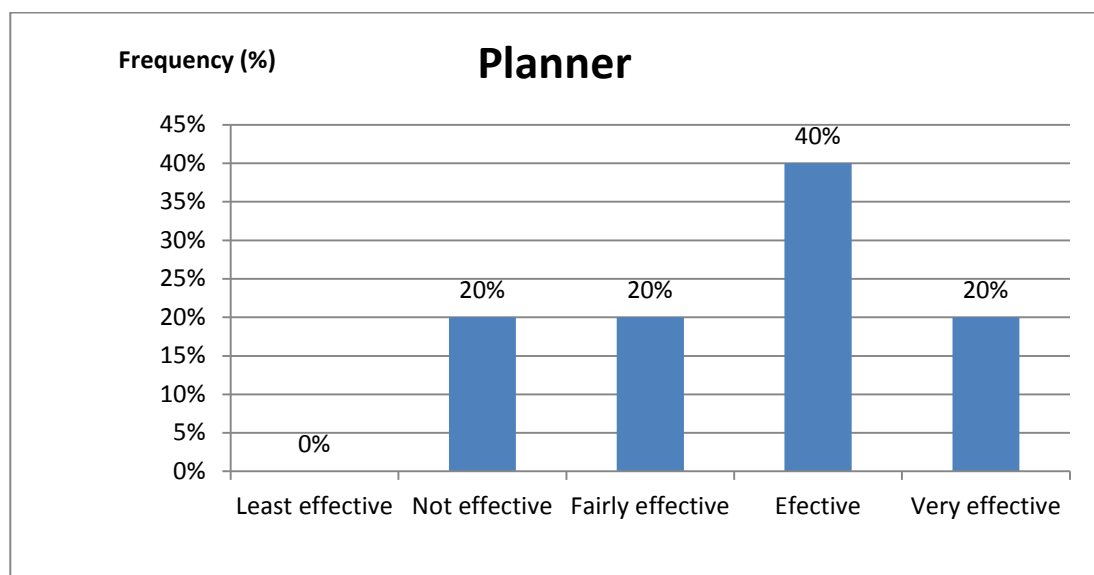


Figure 4.6: Percentage of the frequency of PMC services as a planner

As shown in Figure 4.6, 40% of the respondents feel that service of Project Management Consultancy (PMC) as a planner is effective. PMC give the most effective cost and able to prepare a better development plan.

4.6.2 Effectiveness of Project Management Consultancy (PMC) Services as a Problem Solver

Figure 4.7 shows the results of first category of PMC in Section C, which is percentage of frequency of Project Management Consultancy (PMC) as a planner.

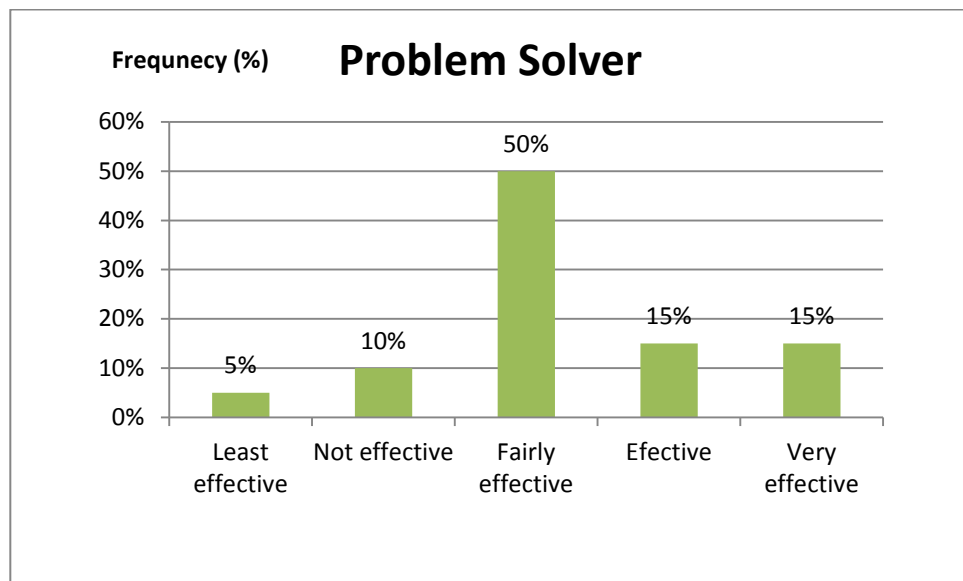


Figure 4.7: Percentage of the frequency of PMC services as a problem solver

As shown in Figure 4.6, 50% of the respondents feel that service of PMC as a problem solver is fairly effective. This is because PMC is not experienced enough to handle all types of problems that occurs in a project (Mahathir, 2009).

4.6.3 Effectiveness of Project Management Consultancy (PMC) Service as a Supervisor

Figure 4.8 shows the results of first category of PMC in Section C, which is percentage of frequency of PMC as a planner.

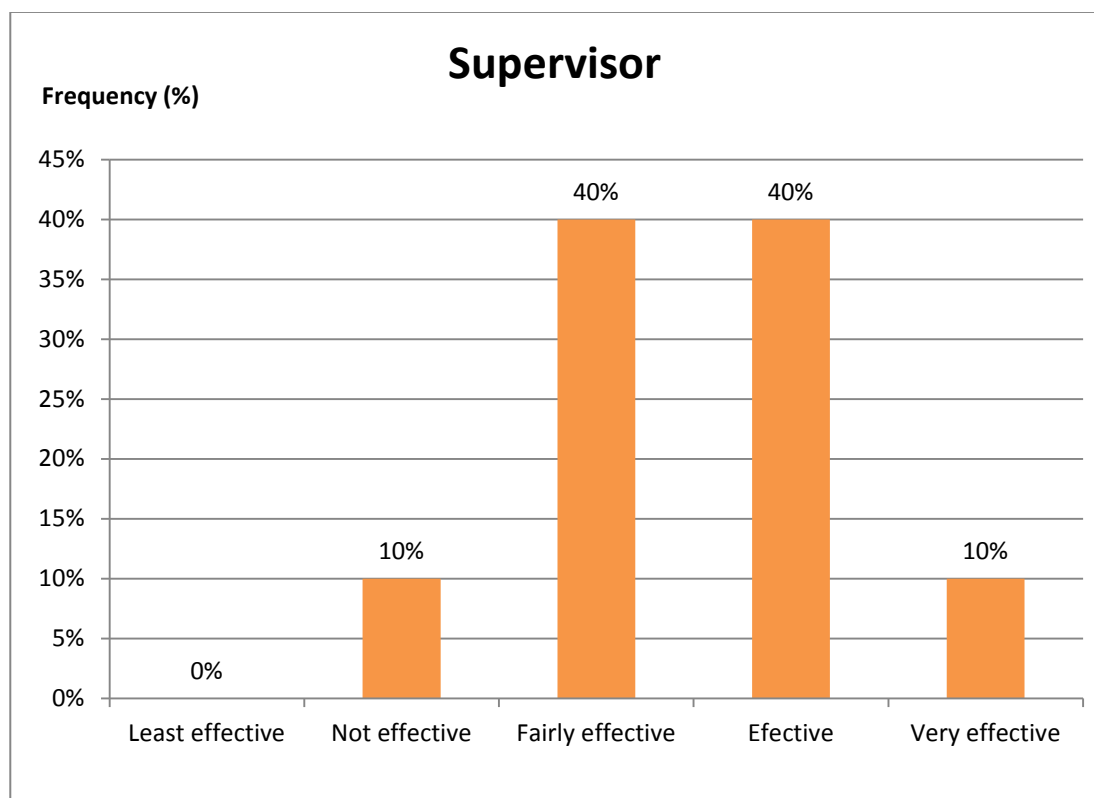


Figure 4.8: Percentage of the frequency of PMC services as a supervisor

As shown in Figure 4.6, 40% of the respondents feel that service of PMC as a supervisor is fairly effective. This is because PMC do a very good job in oversees the process in the project such as work specifications, contract and etc.

4.6.4 Effectiveness of PMC as a Leader

Figure 4.9 shows the results of first category of Project Management Consultancy (PMC) in Section C, which is percentage of frequency of PMC as a leader.

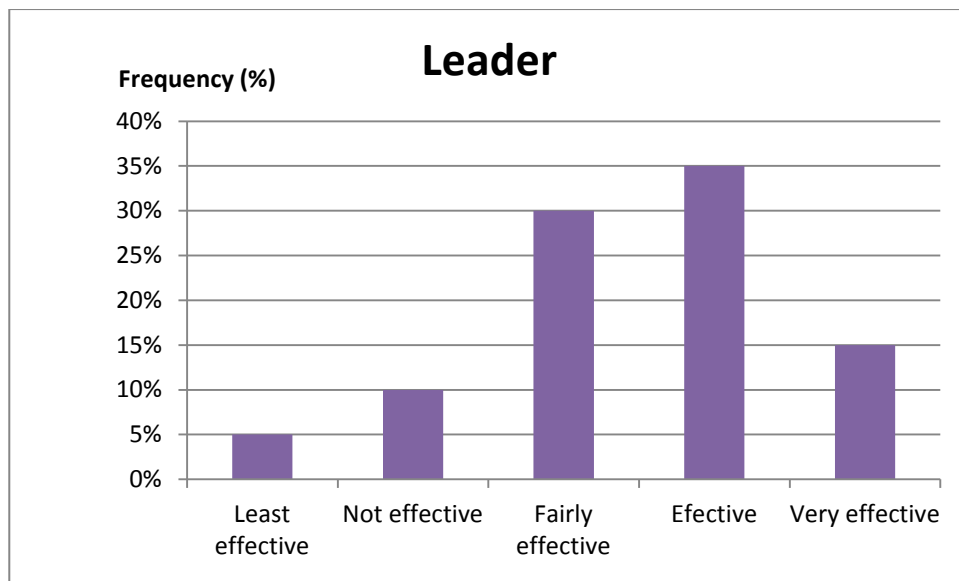


Figure 4.9: Percentage of the frequency of PMC services as a leader

As shown in Figure 4.6, 35% of the respondents feel that service of PMC as a leader is effective. However, the percentage of respondents is also quite high. This is because PMC doesn't not have a improving knowledge and skill compared to the contractors.

4.6.5 Summary of Result for Effectiveness of PMC Services

Data for roles and responsibilities of PMC have been analysed by using Average Index (AI) which have been explained in Chapter 3 (Methodology). The modified classification for rating scales done by Abd Majid and Mc Cafter (1997) will be used. The classifications for the rating scale are as follows:

1) “Very Effective”	$4.50 \leq \text{Average Index} \leq 5.00$
2) “Effective”	$3.50 \leq \text{Average Index} \leq 4.50$
3) “Fairly Effective”	$2.50 \leq \text{Average Index} \leq 3.50$
4) “Not Effective:	$1.50 \leq \text{Average Index} \leq 2.50$
5) “Very Effective”	$1.00 \leq \text{Average Index} \leq 1.50$

In section C of the questionnaire, the result of AI for effectiveness of PMC services is shown at table 4.10.

Refer to table 4.3, mostly respondents agreed that the most effective service of PMC in a project is as a planner with 3.56 AI value. It is followed by supervisor (3.5), leader (3.3) and problem solver (3.1). PMC is good in planning because this is their major field in a project and they usually give the most effective cost and development plan. However, respondents feels that PMC services is quite slow as a problem solver and PMC is also did not have experienced on site.

From table 4.10, it also can be seen that overall service of Project Management Consultancy (PMC) is fairly effective, with total AI 3.37.

Table 4.10: Result of Average Index for Effectiveness of PMC Services

Roles and Responsibilities		Least effective	Not effective	Fairly effective	Efective	Very effective	AI	Ranking
Planner	TR	0	4	4	8	4	3.56	1
	PR	0%	20%	20%	40%	20%		
Problem Solver	TR	1	2	10	3	3	3.1	4
	PR	5%	10%	50%	15%	15%		
Supervisor	TR	0	2	8	8	2	3.5	2
	PR	0%	10%	40%	40%	10%		
Leader	TR	1	2	6	7	3	3.3	3
	PR	5%	10%	30%	35%	15%		
TOTAL AI							3.37	

TR= Total Respondent

PR= Percentage of Respondents

CHAPTER 5

CONCLUSION & RECOMMENDATION

5.1 Introduction

In this chapter, it discussed more about the conclusion and recommendation on the study matter. Generally, his chapter is the last part after the analysis of data have been done or finished.

The conclusion is made to answer the three objectives of this study, while the recommendation is made based on personal observation and knowledge of this study.

5.2 Conclusion for Objective of Study

After data analyses have been done in previous chapter, it is found all the three (3) objectives have been achieved. The conclusion can be drawn from this study are as follow.

5.21 Objective 1: To Study what is Project Management Consultancy

From the literature review, Project Management Consultancy (PMC) is described management consultant by their roles and responsibilities using skill and tools they have in delivering a task that been given by client (Dzulkarnaen, 2005).

According to Mohammad Mahdini from Bintulu Port on the interview, Project Management Consultancy (PMC) is the person who ensures that the project is exactly on plan which means on time, on the right budget and avoid any mishaps during project was constructed. Mr. Mahathir from Bintulu Department Authorities (BDA) also said the same thing and then he said the PMC always facing troubles during project is because the PMC is have less experience than contractors

5.2.2 Objective 2: To study the roles and responsibilities of Project Management Consultancy

The second objective is to study the roles and responsibilities of Project Management Consultancy (PMC) and it has been successfully achieved. It is shown according to its importance and AI:

- 1) Planner (AI=3.97)
- 2) Supervisor (AI=3.60)
- 3) Problem Solver (AI=3.50)
- 4) Leader (AI=2.95)

5.2.3 Objective 3: To Identify the Effectiveness of PMC Services

The second objective is to study the roles and responsibilities of Project Management Consultancy (PMC) and it has been successfully achieved. It is shown below according to its importance and AI. Besides that, the service of PMC is fairly effective with AI 3.37

- 1) Planner (AI=3.97)
- 2) Supervisor (AI=3.60)
- 3) Problem Solver (AI=3.50)
- 4) Leader (AI=2.95)

5.3 Recommendation for the Study

From the analysis and personal side of view, there several recommendations to improve the services of Project Management Consultancy (PMC) to ensure that the service of PMC will be used widely once again in Malaysia.

- a) PMC should clarify their roles and responsibilities according to their skills before the project is started to avoid any misunderstanding among contractors, clients and consultants themselves
- b) PMC must act as experts and possesses necessary qualification and professional independence to carry out engineering assignments in design stage and project implementation.
- c) PMC should not handle too much projects in hand because this will diverse their concentration and affect their performance as well.

5.4 Recommendation for Future Study

The result of this research has successfully answer to the objectives, however this research is considered incomplete, because there are still many other aspects need to go deep into. There are few suggestion for future research stated as below:

- a) Case study on problems that been faced by PMC
- b) Study on factors of PMC that might affect the success in management consulting project.

5.5 Conclusion

In overall, the objectives of study have been successfully achieved through the study literature outcome, questionnaire and interview. The existences of PMC service in Malaysia have no longer been widely used. This is because the effectiveness level of their service is very differing to the clients' needs. Therefore, the consultants themselves must change their attitude and try to develop new practice and at the same time improving their skills and credibility.

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APPENDIXES

Section A

(Bahagian A)

Please Circle and Fill In the Blanks (*Sila Bulatkan Dan Isi Tempat Kosong*)

RESPONDENT'S INFORMATION

(*Latar Belakang Responden*)

1. Position (*Jawatan*)
 - a) Project Manager (*Pengurus Projek*)
 - b) Engineer (*Jurutera*)
 - c) Others (*Lain – Lain*)

2. Type Of Company (*Jenis Syarikat*)
 - a) Consultant (*Perunding*)
 - b) Contractor (*Kontraktor*)
 - c) Developer (*Pemaju*)
 - d) Government (*Pihak Kerajaan*)
 - e) Others (*Lain – Lain*)

3. Company's name:

Section B

(Bahagian B)

Please tick the suitable value from likert scale below

(Sila tandakan mana-mana dibawah dan isikan ditempat yang anda rasa sesuai.)

(5) = Very Angree(sangat setuju) (4) = Agree (Setuju) (3) =Fairly (Sederhana)

(2) = Not Agree (Tidak Setuju) (1) = Very Disagree (Sangat Tidak Setuju)

Categories 1: PLANNER (PERANCANG)						
No	Planning and scheduling	1	2	3	4	5
1.	Perunding Pengurusan Projek (PMC) responsible in rescheduling the activities if there is any changes during completing the project. <i>PMC bertanggungjawab dalam menjadualkan semula kesemua aktiviti sekiranya berlaku perubahan ketika menjalankan projek.</i>					
2.	PMC gives the most effective cost to the client/project owner. <i>Perunding Pengurusan Projek (PMC) menyediakan anggaran kos yang efektif kepada pemilik projek.</i>					
3.	Perunding Pengurusan Projek (PMC) complete the project due to time. <i>PMC menyiapkan projek mengikut masa yang telah dirancang.</i>					

4.	<p>PMC prepare the construction plan from beginning until the project was successfully finished.</p> <p><i>Perunding Pengurusan Projek (PMC) menyediakan pelan pembangunan dari awal sehingga akhir project berkenaan.</i></p>					
5.	<p>The project planning by PMC helps in successing a project</p> <p><i>Perancangan projek yang disediakan oleh Perunding Pengurusan Projek (PMC) amat membantu dalam menjayakan sesuatu projek.</i></p>					

Categories 2: PROBLEM SOLVER(PENYELESAI MASALAH)						
No	Problem Solver	1	2	3	4	5
1.	<p>PMC studies problems very well in a project.</p> <p><i>Perunding Pengurusan Projek (PMC) mengkaji masalah dengan baik dalam sesuatu projek.</i></p>					
2.	<p>PMC helps in solving problem that occurs in a project.</p> <p><i>Perunding Pengurusan Projek (PMC) membantu dalam menyelesaikan masalah dalam sesuatu projek</i></p>					
3.	<p>PMC acts fast if there is any complaints from client.</p> <p><i>Perunding Pengurusan Projek (PMC) bertindak dengan pantas sekiranya klien tidak berpuas hati dengan projek</i></p>					

4.	Hiring PMC can avoid project overdue <i>Perunding Pengurusan Projek (PMC)membantu dalam mengelakkan kelewatan sesuatu projek.</i>					
5.	PMC responsible in doing research about the project before it was started to avoid any problems. <i>Perunding Pengurusan Projek (PMC) bertanggungjawab mencari maklumat tentang projek berkenaan sebelum projek bermula untuk mengelakkan sebarang masalah..</i>					
Categories 3: Supervisor						
No		1	2	3	4	5
1.	PMC will supervise all the work according to original plan during the project. <i>Semasa projek dijalankan, Perunding Pengurusan Projek (PMC) akan meneliti setiap kerja mengikut plan asal.</i>					
2.	PMC solving all the problems occurs. <i>Perunding Pengurusan Projek (PMC) menyelesaikan masalah yang timbul ketika projek di jalankan.</i>					
3.	PMC ensure all parties involved do all the works according to the schedule. <i>Perunding Pengurusan Projek (PMC) memastikan kesemua pihak terlibat menjalankan tugas mengikut yang telah dijadualkan.</i>					
4.	PMC ensure all the parties do cooperate in a project.					

	<i>Perunding Pengurusan Projek (PMC) membantu dalam memastikan kesemua pihak bekerjasama dalam sesuatu projek.</i>					
5.	PMC gives his opinion and advice to any parties involved. <i>Perunding Pengurusan Projek (PMC) memberi nasihat dan pandangan kepada semua pihak terlibat</i>					
Categories 4: Leader(Ketua)						
No	Leader	1	2	3	4	5
1.	PMC have the rights and power in choosing the contractor. <i>Perunding Pengurusan Projek (PMC) mempunyai kuasa dalam urusan pemilihan kontraktor.</i>					
2.	PMC also have the right to end the service of the contractor that fail to achieve mission in a project. <i>Perunding Pengurusan Projek (PMC)berhak menamatkan khidmat kontaktor yang gagal melaksanakan projek dengan sempurna.</i>					
3.	PMC have the power in changing the project plans if the clients is not satisfied. <i>Perunding Pengurusan Projek (PMC) mempunyai kuasa untuk mengubah plan projek sekiranya klien tidak puas hati..</i>					
4.	PMC ensure the project is on track. <i>Perunding Pengurusan Projek (PMC) memastikan</i>					

	<i>kerja projek berjalan mengikut perancangan.</i>					
5.	All parties involved will give daily report to PMC <i>Kesemua pihak terlibat seharusnya memberi laporan harian kepada Perunding Pengurusan Projek (PMC).</i>					

Section C

Bahagian C

Please tick the suitable value from likert scale below

Sila tandakan mana-mana dibawah dan isikan ditempat yang anda rasa sesuai.

(5) = Excellent (Cemerlang) (4) = Very Good (Sangat baik) (3) = Good (Baik)

(2) = Satisfactory (Memuaskan) (1) = Poor (Lemah)

Category (kategori)		1	2	3	4	5
Planner	Completed the Works according to plan <i>Menyiapkan kerja mengikut perancangan</i>					
	The project is on the right budget <i>Projek siap mengikut bajet yang dirancang</i>					
	Overall project activities is smooth and success. <i>Keseluruhan activiti projek berjalan dengan lancar.</i>					
	The project will still on time even there is some changes in the project <i>Projek akan masih berjalan lancar walaupun berlaku sebarang perubahan dalam projek</i>					

	<p>There is less problems involving materials and workers when PMC is involve</p> <p><i>Masalah kekurangan material dan juga pekerja kurang berlaku sekiranya PMC terlibat</i></p>					
Problem solver	<p>PMC acts fast when mishaps happens</p> <p><i>PMC bertindak pantas sekiranya berlaku sebarang masalah</i></p>					
	<p>PMC can avoid problems becoming much worse</p> <p><i>PMC mampu mengelak masalah menjadi lebih buruk</i></p>					
	<p>Every problems can be solved faster</p> <p><i>Setiap masalah dapat diselesaikan dengan cepat.</i></p>					
	<p>Hiring PMC can avoid loss and over budget</p> <p>Mengupah PMC dapat mengelakkan daripada kerugian dan terlebih bajet</p>					
	<p>PMC is expert and well experienced.</p> <p>PMC mempunyai pengalaman yang luas dan terdiri dari golongan pakar.</p>					
Leader	<p>PMC solves problems among other parties that involve in the project</p> <p><i>PMC mampu menyelesaikan masalah yang wujud antara pihak-pihak yang terlibat.</i></p>					
	<p>Every actions must be updated to PMC</p> <p><i>Setiap tindakan wajib di maklumkan kepada PMC.</i></p>					

	<p>PMC good in communicate with every people that involved in the project</p> <p><i>PMC bijak berkomunikasi dengan semua pihak yang terlibat dalam projek berkenaan</i></p>					
	<p>PMC good in controlling the overall project in order to avoid project failure</p> <p><i>PMC bijak dalam mengawal keseluruhan projek untuk mengelakkan kegagalan projek.</i></p>					
	<p>PMC is responsible if anything happen to the project</p> <p><i>PMC bertanggungjawab sekiranya timbul sebarang masalah</i></p>					
Supervisor	<p>PMC did supervise all the parties according to plan</p> <p><i>PMC memerhatikan kerja-kerja setiap pihak terlibat berdasarkan plan</i></p>					
	<p>PMC do the work according to the clients needs</p> <p><i>PMC menjalankan kerja berdasarkan kehendak dan keperluan klien</i></p>					
	<p>PMC did control the contractor very effectively.</p> <p><i>PMC mengawal kontraktor dengan baik</i></p>					
	<p>PMC did handling the time according to plan</p> <p><i>PMC mengawal masa dengan bijak mengikut plan</i></p>					

	<p>PMC ensure everything is at minimum cost but still in good quality.</p> <p>PMC memastikan kesemua aktiviti tidak melebihi kos yang dirancang dan dalam kualiti yang baik</p>				
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Please arrange the roles of Project Management Consultancy from 1 to 4 according to the effectiveness of their service in the table below from the most effective (1) to least effective (4) in a project.

Thank you.