A STUDY OF FACTORS INFLUENCING HOUSING DEVELOPERS TO CHOOSE APPROPRIATE PROCUREMENT STRATEGY

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SUPERVISOR'S DECLARATION

I hereby declare that I have read this research and in my opinion this research is sufficient in terms of scope and quality for the award of the degree of Bachelor of Project Management.

Signature:

Supervisor's Name: Miss Nurhaizan binti Mohd Zainudin

Date:

STUDENT'S DECLARATION

I hereby declare that the work in this research is my own research except as cited in the references. The research has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.

Signature:

Name: Raja Nurfarhana Binti Raja Razalli

ID Number: PB11013

Date:

Dedicated to my parents

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ABSTRACT

The purpose of this research is to identify and rank the factors influencing housing developers the most to choose appropriate procurement strategy. The selection of an appropriate procurement strategy is becoming an increasingly important issue due to a complex decision-making that has to be made by clients during early project lifecycle. A comprehensive literature review of various procurement strategies and factors which influence the selection of an appropriate strategy for housing development projects in Johor was conducted. A survey questionnaire was carried out to obtain housing developers' views on factors that influence the selection of procurement strategy for their entire projects. A total of 30 housing development companies were responded to the survey. The data was then analysed using the Statistical Package for Social Sciences (SPSS) and the factors ranked according to their means. The results shows that the top three important factors that most influenced are client budget requirement, client financial capability and client experience. This research also has ranked the factors according to their degree of influenced that is client budget requirement is at the first position, followed by client financial capability at the second position and client experience at the third position. One recommendation for future research is to focus on developing models for the selection of an appropriate procurement strategy instead of identifying influence factors.

ABSTRAK

Tujuan kajian ini adalah untuk mengenalpasti dan menentukan kedudukan faktor yang paling mempengaruhi pemaju perumahan untuk memilih strategi perolehan yang sesuai kerana pemilihan strategi perolehan yang sesuai menjadi isu yang semakin penting disebabkan keputusan yang perlu dibuat oleh pelanggan awal dalam kitar hayat projek adalah sesuatu yang kompleks. Sebuah kajian literatur yang komprehensif tentang strategi perolehan dan pelbagai faktor-faktor yang mempengaruhi pemilihan strategi yang sesuai untuk projek-projek pembangunan perumahan di Johor telah dijalankan. Satu soal selidik telah dijalankan untuk mendapatkan pandangan daripada pemaju perumahan terhadap faktor-faktor yang mempengaruhi pemilihan strategi perolehan untuk keseluruhan projek-projek mereka. Sebanyak 30 syarikat pembangunan perumahan telah memberi maklum balas kepada kajian ini. Data kemudian dianalisis dengan menggunakan Pakej Statistik Untuk Sains Sosial (SPSS) dan kedudukan faktor-faktor ditetapkan mengikut min mereka. Keputusan menunjukkan bahawa tiga faktor penting yang paling mempengaruhi adalah keperluan bajet pelanggan, keupayaan kewangan pelanggan dan pengalaman pelanggan. Kajian ini juga telah meletakkan faktor mengikut peringkat yang paling mempengaruhi iaitu keperluan bajet pelanggan berada pada kedudukan pertama, diikuti dengan keupayaan kewangan pelanggan pada kedudukan yang kedua dan pengalaman pelanggan pada kedudukan yang ketiga. Cadangan utama untuk kajian masa depan haruslah memberi tumpuan kepada mereka satu model untuk pemilihan strategi perolehan yang sesuai dan bukan hanya mengenalpasti faktor-faktor yang mempengaruhi.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

Residential is an important agenda to this whole world and it is a necessary part in our life. According to Deputy Prime Minister, Tan Sri Muhyiddin Yassin, the National Housing policy fulfill the needs of Malaysian, by providing suitable and affordable residential for empowerment of choice and autonomy. Besides that, the Deputy Prime Minister also state that housing sector will contribute to the economic growth of the country and thus, achieve Government's aspiration to become a developed and high-income nation by 2020.

In order to have a successful housing sector in Malaysia, all the housing projects must be able to have better planning before the implementation of the project. Project procurement is the vital part in the planning stage of the project process. Project procurement has a strong relationship with quality of life to ensure projects have been successfully implemented and achieves their goals. Project procurement has many procurement strategies that can be adopted and each procurement strategies have its own benefits for both clients and contractors. Therefore, both clients and contractors must be

careful in deciding which procurement strategies they want to adopt before for their particular projects.

In choosing appropriate procurement strategy, there are some factors that need to be considered by clients and contractors before making a decision. The factors contribution comes from many aspects such as cost, time and quality of the projects, clients' requirements and the level of risks that might be happen during the implementation of the project. Some other researchers have conducted their studies and found out that factors of choosing to adopt traditional procurement strategy is project completion at estimated time, while for choosing to adopt non-conventional procurement strategy is by considering the quality assurance of the product (Babatunde et al., 2010).

1.2 Problem Background

Procurement strategy is a crucial part in construction process and it will lead to become a successful project and achieve project's goals. The survey from Chartered Institute of Building (CIOB) (2010) finds that procurement is totally vital to the delivery of project on time, on budget and to a high quality and 87% of respondents agreed that good procurement is similarly with a successful project. According to Toor and Ogunlana (2008), inadequate understanding of the procurement system, is the major problems that construction projects faced. The implementation of procurement strategy had direct impact on project planning, project document and successful project outcomes (Noor et al., 2013).

There are quite many alternatives of procurement strategy in the construction industry and it is advantageous that there are choices available but it is hard to choose the most suitable procurement strategy. According to Rashid et al., (2006) each procurement strategy has its own uniqueness in term of pre tender and post tender of the activities and processes, division of risk between clients and contractors and the effectiveness of project monitoring and control. The selection of the appropriate procurement strategy is widely accepted as an important factor in performance of the project during construction and ongoing functionality after completion (Mahon, 2011). Nevertheless, the selection of

appropriate procurement strategy is difficult, because the experienced client or contractor cannot determine all the potential advantages or risk for each procurement strategy towards their project (CIOB, 2010).

According to Thwala and Mathonsi (2012) the factors are classified into internal and external factors. Internal factors are including client characteristics and project characteristics. Client characteristics involve client's level knowledge, political and social consideration, familiarity with procurement system and competition. Project characteristics such as project complexity, project life cycle, expedite project delivery, time, and quality and price certainty. External factors are market competition, information technology, regulatory environment, natural disaster and globalization. Some other practitioners and researchers consider that factors influencing procurement strategy are time certainty, cost certainty, quality, flexibility, risk and responsibility, sustainability and collaboration (Ekung et al., 2013).

The above practitioners have stated many factors that can be considered during selecting appropriate procurement strategy in a project. However, the basic factor for choosing appropriate and suitable procurement strategy by clients has been found undefined, complicated and often inappropriate (Ojo et al., 2012).

1.3 Problem Statement

In Malaysia, the rapid urbanization growth rate since the early 1970's have made the growth rate of the housing is a key factor in the growth of Malaysia's economic. Residential is a basic human need after food and meaningful employment. However, at the rate that house prices are raising in Malaysia, it is beginning to be beyond the reach of even the middle income group (Berita Arkitek, 2013). In 10^{th} Malaysia Plan, Malaysia has experienced rapid urbanization of the population in urban areas increased by 2.2% compared to the rural population at a rate of 1.6% for the period 2000 to 2009. With this increasing of population, the demand in housing sector becomes most important to ensure for the comfort of Malaysia citizens.

According to Hamzah et al., (2011), the increases of house prices are caused by internal factors that fully controlled by developers. Various causes internal factors that led to the expectation of low cost computing time planning and design stage of which is bias, delivery or the procurement strategy, project planning schedule changes, process engineering and construction of complex, variable scope, expectations fragile, the scope of which moves slowly and additions to the change is inconsistent (Shane, 2009). In addition, project housing problems also are the worst problem that Malaysia bears currently. Project housing problems are not only burden Malaysia citizens but it is also affected the economic growth and national financial.

One of the factors that contribute to project housing problems is wrong selection of procurement strategy. This is agreed by El-Rufai (2012) who attributed the reasons for project abandonment to poor planning, disorganized procurement practices, incompetent project management. According to Rajeh et al., (2014), procurement is a key improvement area and an important element contributing to project success. Besides that, improper procurement process such as the need for efficiency and finances, client objectives, timely policy decisions, clarity of clients' needs, delays in bidding and response, delays in approvals, proposal and bid evaluation procedures, need for relaxation of rules and project characteristics will affect the choice of procurement strategy (Noor et al., 2013) .Table 1.1 shows the statistic of project delays and abandoned housing projects obtained from Ministry of Housing and Local Government.

Table 1.1: Statistics of Project Delays and Abandoned Projects

Number	States	Number of project delays	Number of projects abandoned
1	Perlis	1	0
2	Kedah	11	2
3	Pulau Pinang	2	1
4	Perak	0	4
5	Selangor	18	13
6	Wilayah Persekutuan	6	1
7	Negeri Sembilan	1	3
8	Melaka	0	0
9	Johor	19	7
10	Pahang	1	2
11	Terengganu	0	0
12	Kelantan	1	1
	Total	60	34

Source: Ministry Housing and Local Government (2014), National Housing Department (2014)

According to Yap (2013), procurement related factors are one of causes of the housing projects problems in Malaysia. She stated that procurement related factors include inappropriate contract arrangements, poor contract administration, and faulty tender process. Moreover, inappropriate procurement and contractual management system also contributed as a factor of housing projects problems (Singh, 2009). According to Eyitope and Ojo (2012), the inappropriate choice of procurement strategy will lead to the non-performance of cost time and quality.

The intention in doing this research is to know the real factors influenced housing developers to choose appropriate procurement strategy towards their projects. It is also to make readers and organizations aware about the importance of choosing appropriate procurement strategy in ensuring project successful.

1.4 Research Objectives

The objective of this research is as follows:

i) To identify the factors influencing housing developers the most in choosing appropriate procurement strategy for their project.
ii) To rank the factors that influence the housing developers the most in choosing appropriate procurement strategy for their project.

1.5 Research Questions

i) What are the factors that influenced housing developers to choose appropriate procurement strategy for their project?
ii) Which is the most influenced factors that housing developers considered to choose appropriate procurement strategy for their projects?

1.6 Scope of Research

This research on the factors influenced housing developers in choosing appropriate procurement strategy is focused on housing developers around Johor state. The list of housing developers companies are search in Construction Industry Development Berhad (CIDB) and also in The Real Estate and Housing Developers' Association (REHDA). The selected respondents are from indigenous and non-indigenous company. The respondents involve in this research are project manager, procurement manager, consultant project manager, project coordinator and financial controller.

1.7 Significance of Study

Procurement strategy is an important thing in the planning stage of construction. Wrong in choosing procurement strategy will ruin the whole of the construction activity. The selection of appropriate procurement strategy must be given full attention in doing decision making. This research aims to identify the most factors that influenced developers and it is useful for the new developers to review the factors before choose procurement strategy. Therefore, all the expertise in the project management team should benefit from this research and can be more understand on what is the key factors that need to be consider before procurement is being chosen.

1.8 Summary

This research is focus on the factors that influence housing developers to choose appropriate procurement strategy. Appropriate procurement strategy can help housing developers carried out a project successful at the end of the project time. Besides that, within the appropriate procurement strategy, the numbers of housing projects problems can be reduced. An organization should aware with the factors influence to choose appropriate procurement strategy in order to make a right decision making.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

Literature review is important thing in order to get deep information about the research. This chapter is divided into three sections. First section covers the trend of residential development in Malaysia, definition of abandoned residential projects and delays of residential projects, and the types of both residential project problems. Next is the explanation about procurement selection process in construction industry as well as housing developments. Then, the overview of procurement strategy which includes traditional procurement strategy, design and build procurement strategy, management contracting and partnering. The last section is about the factors that influence housing developers to choose appropriate procurement strategy. The purpose of this chapter is to critically analyze and review some of the different literatures and theories currently in place and how they can support the arguments of factors influence housing developers to choose appropriate procurement strategy.

2.2 Residential Development in Malaysia

Residential development is one of the essential things in Malaysia since 1957. Residential development also becomes one of those things that are most priority in Malaysia Government's planning (Ibrahim et al., 2011). Residential development can be categorized in construction industry. Construction sector contribute for the growth of Malaysia's economic that related to other sectors, included services sector and manufacturing of building materials sector. Referring to Economic Report of the Ministry of Finance 2013/2014, construction sector will contribute about 9.6% from the total of Gross Domestic Product (GDP) in year 2014.

Mostly, residential developments in Malaysia were conducted by three sources which are public sectors, private sectors and co-operative societies. The residential developments normally depend on the same agenda of economic planning that has been established by government through the Five Year Malaysia Plan (Khalid, 2010). Until now, Malaysia has established ten economic plans since 1950's. Every economic planning has different approach according to the type of sectors. Table 2.1 shows the different policies of residential developments according to each Five Year Malaysia Plan from 8th Malaysian Plan until 10th Malaysian Plan.

Table 2.1: The Summary of National Housing Policy in Each Five Year Malaysia Plan from 8th Malaysian Plan until 10th Malaysian Plan

8th Malaysian Plan (2001-2005)	Will focus on the provision of adequate and affordable housing for low-income groups and medium.
9th Malaysian Plan (2006-2010)	To provide enough housing schemes that affordable to all citizens through government agencies
10th Malaysian Plan (2011-2015)	Developing a viable and interesting residential area and ensuring access to quality and affordable housing.

Source: Khalid (2010)

Based on the table above, every Five Year Planning included the residential development for all the citizens in Malaysia. The most important objectives that government wanted to achieve after independence is to reorganize the society and eliminate poverty. As measures to achieve these objectives, the government has implemented various Malaysian plans such as New Economic Policy (NEP) and National Development Policy (NDP). However, residential developments has faced many problems such as project delays and abandoned projects although residential sector is contribute to the Malaysian development and economic that give advantages to the citizens.

2.2.1 Problems in Residential Development

The residential development problems have existed during mid-1980s, where the first economic recession hit Malaysia at that time. 126 housing projects were reported by the end of 1986 that the projects were not following the actual schedule and the developers left the projects abandoned (Rahman et al., 2013). The most significant problems that often occur in the housing project are projects delays and abandoned projects. These problems that occur in the housing projects are based on several factors which include procurement strategy factors.

According to Ewa (2013), all the aspects in planning phase must specific design, funding and timelines to ensure budgetary allocation is follow the Public Procurement Act. Rahman et al., (2013), state that legal issues such as procurement system of property have been recognized as other major contributors to abandoned housing projects. The following section contains a discussion about the types of residential development problems in Malaysia.

2.2.2 Abandoned Residential Development Projects

2.2.2.1 Definition of Abandoned Residential Projects

Abandoned housing development means where a licensed housing developer had refused to carry-out or delayed or suspended or stooped or ceased works continuously for a period of six months or more or beyond the stipulated period of completion (Sabah, 2005). Project abandonment is the unplanned suspension of the work progress especially at the execution stage such as refusal or failure to complete a contract after practical (Chinedu et al., 2011). According to Ministry of Housing and Local Government (MHLG) of Malaysia has set four conditions, that can declared the projects as abandoned, no construction activities on site for six months or more, the problematic developer, the developer declares an inability to complete the project, and the MHLG declares the project abandoned according to the Housing Development Act (118).

2.2.2.2 Types of Abandoned Residential Projects

According to Ibrahim et al., (2011), there are three types of abandonment projects that occur simultaneously which are physical abandonment, financially abandonment and functional abandonment.

i) Physical abandonment: occurs when contractor disobey the housing code that relate to the safety and comfort of the occupants or more serious structural problems. When it is often unsafe for occupants, so, they are prohibited from live in these structures. Then, it will cause squatters or homeless peoples may view these as viable sources of shelter.

ii) Financially abandonment: occurs when a contractor does not have enough financial resources and the amounts of debts are exceeding the equity. Property

tax arrearages, defaulted mortgages, and liens are all factors of financial abandonment.

iii) Functional abandonment: occurs when a building is in good repair and all property taxes are being paid but the building is stop being used, is functional abandonment. Besides that, a building that is still occupied but do not get mail service or utilities is likewise functionally abandoned to certain extent.

2.2.3 Delays in residential development projects

2.2.3.1 Definition of delays in residential projects

According to Singh 2009, define delays as the difference of time between the actual and the initially planned dates of completion. In construction, a delay means a time overrun either exceeding the contract date or exceeding the date that the contractor and client have agreed upon for the handover of the project (Lo et al., 2006). Act or event which extends required time to perform or complete work of the contract demonstrates itself as additional days of work (Razeket al., 2008). The word delay refers to something happening beyond the time planned in a contract or beyond the date that the client and contractor agreed for the delivery of a project (Pickavance, 2005).

2.2.3.2 Types of delays in residential projects

Referring to Ahmed et al., (2002), delays can be grouped in the following four broad categories according to how they operate contractually, which are non-excusable delays, non-compensable delays, compensable excusable delays and concurrent delays.

i) Non-excusable delays: when the contractor either causes or assumes the risk for. These delays will contribute some negative aspects such as lack of productivity, insufficient scheduling or mismanagement, construction errors, weather, equipment breakdowns, staffing problems, or mere bad luck. Such delays are under the contractor's responsibility and no aid is allowed. These delays are within the control of the contractor.

ii) Non-compensable Excusable delays: This type of delays is affected by unpredictable reasons, not under contractor's control, and not under contractor's fault. The Contractor will not receive compensation for the cost of delay, but he will be given for an additional time to complete his work and is relieved from any contractually imposed liquidated damages for the period of delay.

iii) Compensable Excusable delays: Compensable delays are excusable delays, suspensions, or interruptions to all or part of the work caused by an act or failure to act by the Owner resulting from Owner's breach of an obligation, stated or implied, in the contract. If the delay is compensable, then the Contractor is entitled not only to an extension of time but also to an adjustment for any increase in costs caused by the delay.

iv) Concurrent delays: concurrent delays occur when both Owner and the Contractor are responsible for the delay. Generally, if the delays are inextricably intertwined, neither the Contractor can be held responsible for the delay (forced to accelerate, or be liable for liquidated damages) nor he can recover the delay damages from the Owner.

2.3 Procurement Selection Process

Procurement strategy is essentially a series of considered risks. Each method has its own strengths and weaknesses, which must be highlighted by clients and industry alike.

There are a number of different types of procurement strategy available for clients to choose (CIOB, 2010). According to Love et al., (2010), the decision to choose procurement strategy is a complex and challenging task for clients of construction projects.Procurement strategy plays a key role in defining the contractual and professional relationships amongst construction project teams (Eyitope and Ojo, 2012). An appropriate procurement strategy will contribute to the success of a construction project (Luu et al., 2005).

The selection of procurement strategy is crucial consideration for a project. The decision of who will prepare the design, which will bear the design risk and which contractor will involve in the design. The increases of various procurement strategies over the last decades, it leads clients to choose procurement strategy carefully. Besides that, the selection of a most appropriate for project procurement strategy can reduce project costs by 5% (Alhazmi and McCaffer, 2000). Before procurement strategy is being chosen, the key objectives and constraints of the building project, identified the risks, determined the preferred risk allocation and identified the level of complexity of the project are need to defined first (Queensland Department of Public Works, 2008). Figure 2.1 shows the procurement selection process.

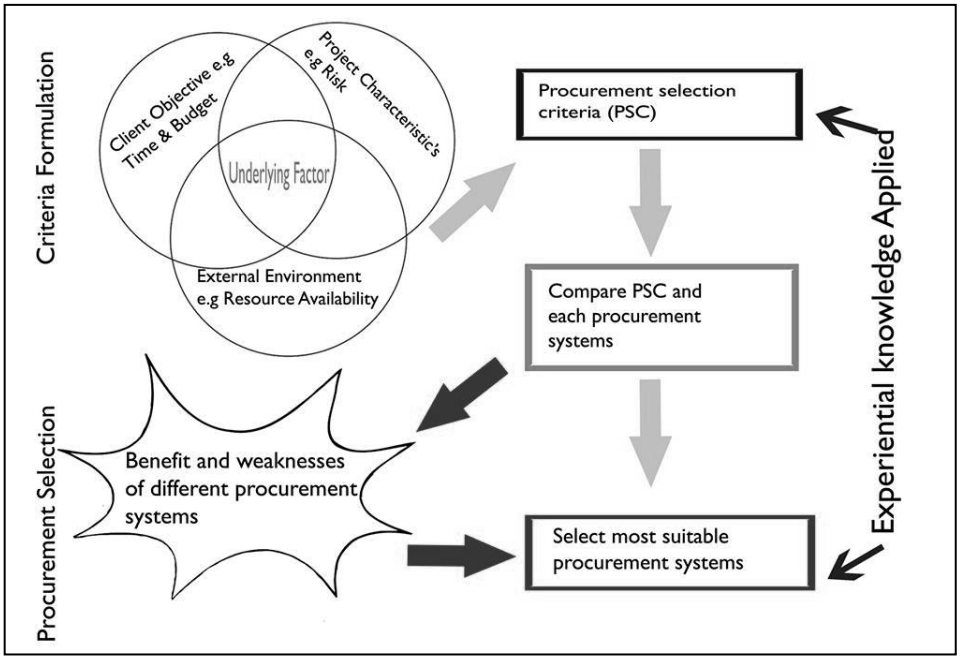

Figure 2.1: Procurement selection process

2.4 Overview of Procurement Strategy

According to Queensland Department of Public Works (2008), procurement refers to the process used to take a building project from its early planning phases to completion and occupation by the building's users. According to Gould and Joyce (2003), procurement is the overall process of finding and purchasing the materials and hiring the best subcontractors to build the project. Besides that, in the process of procuring the project, the construction documents, specifications and drawing must be accurate to ease bidder understand the scope of works as design by the owner (Goulde and Joyce, 2003). Procurement strategy is an important thing in construction because it is involves a series of sequential processes (Idoro, 2012). There are many types of procurement strategy that can be adopted by developers when procuring a project such as traditional procurement method, design and build, management contracting and partnering.

2.4.1 Traditional Procurement Strategy

Traditional procurement strategy or design-bid-build is one of the most popular strategies that have been used since the nineteenth century. According to the Chartered Institute of Building (CIOB) (2010), traditional procurement strategy can be defined as alienated of design and build. In traditional procurement strategy, bidding is a process to select a contractor for the implementation of the project. In this strategy, the owner of the project will hire a design professional to prepare a design of the work and contract documents (Goulde and Joyce, 2003). The contractor will accept the design of work and responsible to carrying out of the work, while the client will appointed team consultant to design and control the cost (Davis et al, 2006).

Once the documents of works are complete, the owner will advertise the tender and conduct competitive bid to obtain the best contractors to do the works. In the construction process, owner of the project can hire architect to manage the contract. Managing the contract involve of observing the work to ensure quality, control change order process,

verifying payment to the contractor and ensuring the owner receive the product as has been agreed in the contract (Goulde and Joyce, 2003). Figure 2.2 shows the flow of traditional procurement strategy.

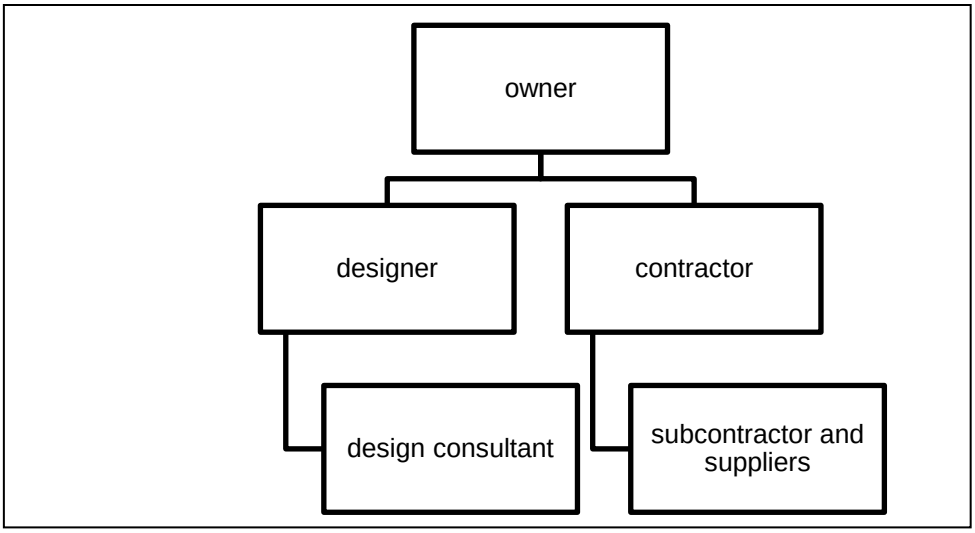

Figure 2.2: Traditional procurement strategy

2.4.2 Design and Build Procurement Strategy

Design and Build system is commonly used in various countries. Design and build have been used in the 1968 at United States and involved provision of a number of school projects in the American Midwest (Lesniak et al., 2012). Design and build procurement strategy is contradict with traditional procurement strategy. In design and build procurement strategy, a contractor is responsible for the both design and build services (El Wardani, 2006). The design and build can be done within in-house employees or joint venture firms that come together contractually to complete a single project. In addition, the owner of the project can hire subcontractors who perform the actual construction in the related field (Goulde and Joyce, 2003).

Design and build is one of the strategies that falls under integrated procurement strategy. In integrated procurement strategy a single organization will need to deal for both the designing and constructing the project (Rashid et al., 2006). Besides that, according to Cooke and Williams (2009), the clients will get benefits from the contractor's expertise at the planning stage in the project. The benefit is commonly lost under some standard contract conditions which limit the contractor's design liability to that of an architect. The clients Figure 2.3 shows the typical contractual arrangement of design and builds system.

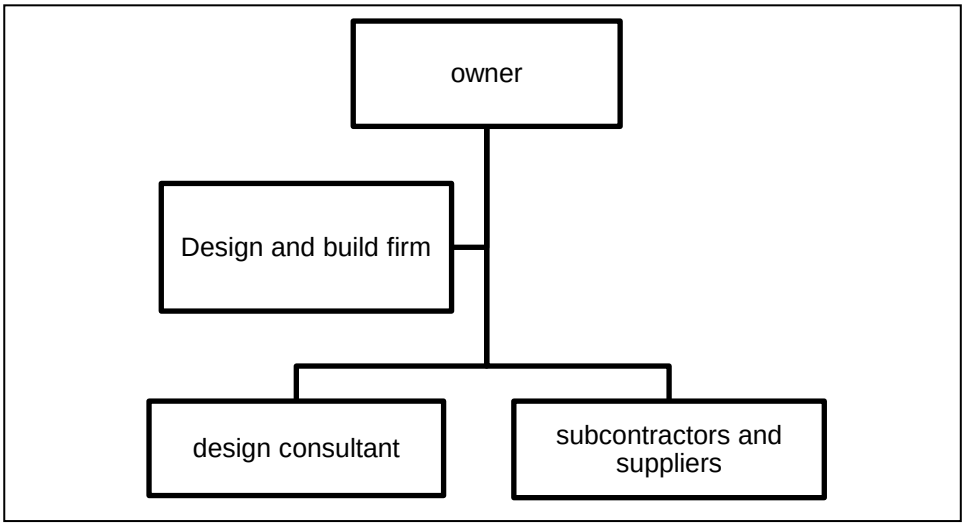

Figure 2.3: Design and Build procurement strategy

2.4.3 Management Contracting

In Management Contracting (Design and Manage), designers and consultants will produce a completed design of project works, while the management contractor continues to cope and organize the project (Martel et al., 2012). According to Miller et a.,l (2009), the involvement of professional team at planning phase as a designer for the project and during the implementation of the project, management contractor responsible to carry out the works based on the completed design. Normally, the professional team will prepare project drawings, specifications and bills of quantities which mostly define the scope of a project.

A management contractor provides site supervisory, technical and administrative staff as well as puts in place special facilities to be shared by subcontractors (Oyegoke, 2007).

According to Cooke and Williams (2009), management contracting is an alternative strategy to the traditional strategy. In management contracting, the client can appoint management contractor to involve and manage a number of work package subcontractors. Besides that, the client may create a competitive situation between management contractors at the appointment phase of the project. The management contractor will be invited to submit and present their proposal to the client and design team. The design team and management contractor must believe that they can work as a project team.

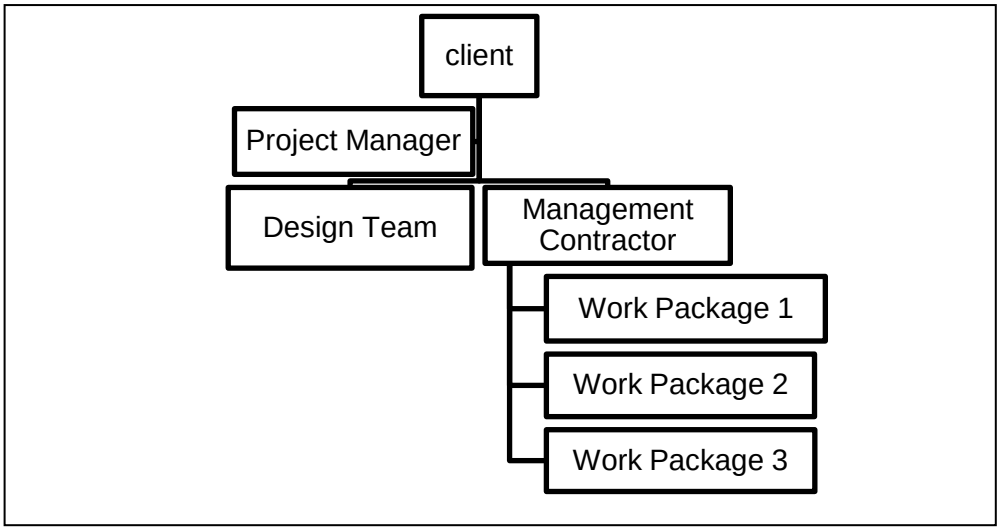

Figure 2.4: Management Contracting Arrangement

2.4.4 Partnering

Partnering in construction is a potentially important way of improving construction project performance through the direct benefits for clients and contractors (Bresnen and Marshall, 2000).Partnering can be defined in various ways. Referring to Jusoff et al., (2008), partnering is a process involving all the parties in a construction project working together in an environment of trust and openness without any conflict happen. Partnering

usually designates a set of actions among parties with shared resources and responsibilities to achieve mutual goals and benefits (Abdul Nifa, 2013).

According to Goulde and Joyce (2003), the level of commitment between top management and designated managing partner must be high throughout project process. Partnering is a concept to achieve mutual objectives among the building team and established dispute resolution procedure as well as encouraging the principle of continuous improvement (Naoum, 2003). Referring to Nyström (2005), partnering can be defined by two features which are trust and mutual understanding. From these two features, the researcher has analyzed the partnering concept and developed partnering flower. The researcher may find that partnering flower is useful in the procurement phase and as a common starting point for discussion between the client and the contractor on how to frame a specific partnering project.

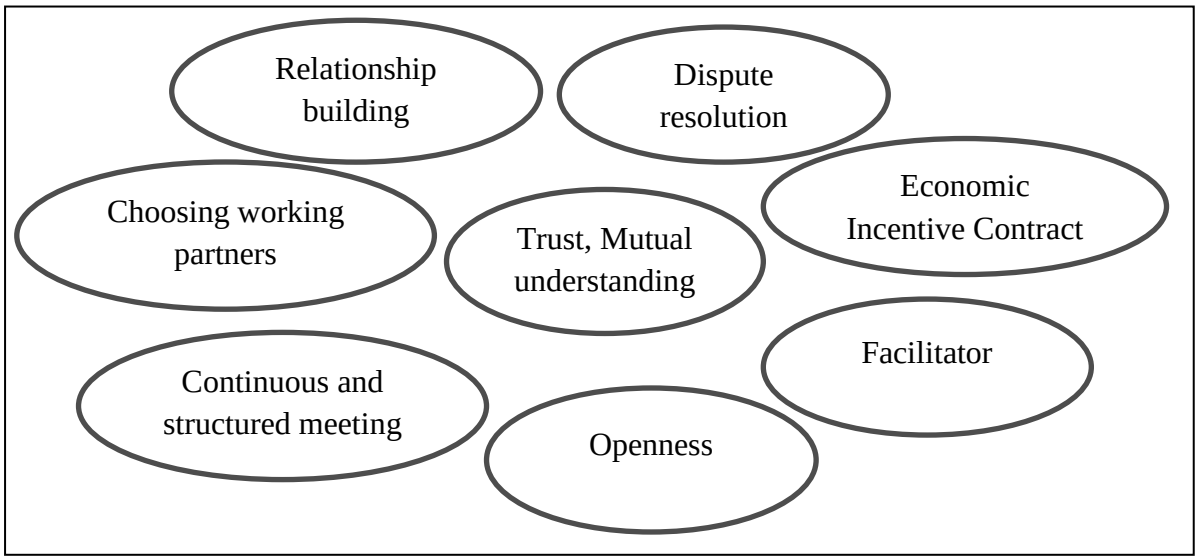

Figure 2.5: Partnering flower

2.5 Factors Influenced Selection of Procurement Strategy

Different authors have suggested different procurement selection factors that can assist clients to choose the best procurement strategy. According to Ogunsanmi (2013),

indicate that procurement selection criteria consist of client characteristics, project requirements and external environment. However, Thwala and Mathonsi (2012) had investigated that the factors influence selection of procurement strategy is from internal and external factors. Internal factors consist of client characteristics and project characteristics. For client characteristics, it involves the client's level of knowledge, political and social consideration, familiarity with procurement strategy, competition, funding arrangements and risk allocation. They also classified project characteristics factors are size and technical complexity of the project, influence of the project life cycle, expedited project delivery, time and quality, and price certainty. For the external factors are include market competition, information technology, regulatory environment, natural causes and globalization.

According to Ratnasabapathy et al., (2007), the factors influenced in selecting procurement strategy are divided into three major factors that are client's requirements, project characteristics and external environment. For client's requirements, it includes the risk management, responsibility and parties' involvement, familiarity, time availability and quality of works. For project characteristics, it is include project cost, project type and project size. While external environment it is involve market competition, economic condition, technology, socio cultural suitability and regulatory environment

However, Luu et al., (2003) have developed Procurement Selection Parameters (PSPs) that consist of several factors that influence procurement selection. The PSPs were set based on client characteristics and objectives, project requirements and external environment. For the client's characteristics, the factors such as client's experiences, client's requirements for on time completion, client's requirement for within budget completion and client's requirements for value for money. For project characteristics, it involves project size, project type and project site location. Lastly market competitiveness, technology feasibility and regulatory feasibility are the factors under external environment.

2.6 Conclusions

As discussed above, the main point in this literature review is selection procurement strategy in construction. The selection of appropriate procurement strategy can be determined through the literature by considering the key elements of procurement selection. Based on the literature reviews, the factors influence are categorized into three major factors which are client's characteristics, project requirements and external factors. Besides that, from these literature review, each procurement strategy have their own characteristics and advantages in terms of process and relationship between client and contractor.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter will explain about how this research is conducted to achieve the aim and objectives of research. This chapter is consists the procedures and techniques, how to collect data, and how the data were analyzed. This chapter will cover some information such as the research design, population and sampling, data collection method, design of questionnaires and data analysis method.

3.2 Research Design

According to Kumar (2005), a research design is a process that is adopted by the researcher to conduct a research and answer questions validly, empirically, precisely and economically. For this research, descriptive research is used. Generally, type of research data can be divided into two types of data which are quantitative and qualitative type of data. Quantitative is a description of trends, attitudes and opinions of a population by studying a sample of that population (Creswell, 2003). While qualitative data focus on the meanings, traits and defining characteristics of events, peoples and experiences

(Tewksbury, 2009). In this research, the quantitative data is used and data is collected by using survey method and the instrument used is questionnaire. Besides that, the primary and secondary data also are used.

Furthermore, there are four basic types or level of measurement of data that are nominal-level data, ordinal- level data, interval-level data and ratio-level data. The nominal-level data classifies data into mutually exclusive which no ranking can be imposed on the data. The ordinal-level data classifies data into categories that can be ranked. For the interval-level data, it can be ranking the data and precise differences between the ranks. Lastly, the ratio-level data possesses all the characteristics of interval measurement (Misni et al, 2012). In this research, nominal-level data and ordinal-level data will apply.

3.3 Population and Sampling

According to Sekaran (2003), population is group of people, events or things that a researcher wants to studies. Generally, this research aimed the housing developers around Johor. The major types of sampling designs is probability and non- probability sampling. In probability sampling, the elements in the population have probability to be chosen as a sample of subjects. Probability sampling can be either unrestricted (simple random sampling) or restricted (complex probability sampling) in nature. There are five common types of restricted sampling which are systematic sampling, stratified random sampling, cluster sampling, area and double sampling. For this research, random sampling is used.

In random sampling, every element in the population has equal chance of being chosen as a subject to study. The population of housing developers in Johor state that registered at Real Estate and Housing Development Association (REHDA) is 109 companies and population selected is 100 housing development companies around Johor state. The 80 sample is randomly selected among the determined population. The population and sample for this research are determined by using population and sampling table by Sekaran (2003). The table is as follow:

Table 3.1: Sample size for a given population size

N	S	N	S	N	S	N	S	N	S	N	S
10	10	85	70	220	140	440	205	1200	294	4000	351
15	14	90	73	230	144	460	210	1300	297	4500	354
20	19	95	76	240	148	480	214	1400	302	5000	357
25	24	**100**	**80**	250	152	500	217	1500	306	6000	361
30	28	110	56	260	155	550	226	1600	310	7000	364
35	32	120	92	270	159	600	234	1700	313	8000	367
40	36	130	97	280	162	650	242	1800	317	9000	368
45	40	140	103	290	165	700	248	1900	320	10000	370
50	44	150	108	300	169	750	254	2000	322	15000	375
55	48	160	113	320	175	800	260	2200	327	20000	377
60	52	170	118	340	181	850	265	2400	331	30000	379
65	56	180	123	360	186	900	269	2600	335	40000	380
70	59	190	127	380	191	950	274	2800	338	50000	381
75	63	200	132	400	196	1000	278	3000	341	75000	382
80	66	210	136	420	201	1100	285	3500	346	1000000	384

Source: Sekaran (2003)

3.4 Data Collection Method

In this research, the data is collect by using questionnaires. The questionnaires will be distributed by using personally administer questionnaire. This method is easier and can get several numbers of respondents in one time. Besides that, if the respondents are not clear about the questions, the researcher can directly clarify the questions. By using this method also, researcher can introduce the research topic and encourage respondents to answer precisely.

Other method that this research uses is mail questionnaire. The questionnaires will be distributed by email to the company in case the company is not reachable by using their given addresses. This method is easy for the respondents to answer it anywhere and anytime. The questionnaires are given two weeks for the respondents to be answered and the respondents re required to send back the answered questionnaires. According to

Sekaran (2003), normally, the return rates of mail questionnaire is low but 30% response rate is acceptable.

In data collection methods, there are two types of data sources which are primary source and secondary sources. Primary data is the data that can obtain firsthand by the researcher on the variables of the study. While secondary data is the information gathered from existing sources. Examples of primary data are individuals, focus groups, panels of respondents and opinions. For secondary data, the examples are company records, government publications, industry analysts, web sites and internets. For this research, primary data is used as a data collection method.

3.5 Design of Questionnaires

The questionnaires design for this research is close ended questions based on the objectives. The close ended questions are required respondents to tick the answers provided. According to Kumar (2005), in the close ended questions, the possible answers are provided and the respondents need to tick the best answers that describe the respondent's answers. The close ended question is easy for the respondents to make a quick decision rather than need to specify their answers. Besides that, the ready-made list of answers can create a tendency among respondents to tick their answers without thinking through the issue.

The questionnaire has 8 major questions which are from the question 1 until question 4 is about the general information of the respondents and question 5 to 8 is about the procurement management in the company and factors influencing developers to choose appropriate procurement strategy for their projects. Measurement of the scale for this research is used nominal scale and interval scale. The interval scale is as follows: not influential at all (1), minimal influential (2), some influential (3), influential (4) and very influential (5).

3.5.1 Section A

In section A, the questions are developed which focus on respondents demographic. In this section, there are 4 questions of respondents' background by using nominal scale as rating scale. The questions are including the respondents' current positions, company establishments, working experience in current positions and level of education. Demographic questions are important in order to analyze and measure the data gathered from respondents.

3.5.2 Section B

In section B, the interval scale is used in developing questionnaires that relate to the factors influence housing developers to choose appropriate procurement strategy. In this section, there are 3 questions which represent the factors influence housing developers to choose appropriate procurement strategy to their projects.

3.6 Data Analysis Method

The analysis method for survey results is using Statistical Package for the Social Sciences (SPSS). According to Sekaran (2003), testing the goodness of data is one of the objectives in data analysis. To testing the goodness of data, researcher can submit the data for factor analysis to obtain the Cronbach's Alpha or the split-half reliability of the measures. For this research, the researcher needs to test reliability by testing for both consistency and stability. To test the consistency and stability of the variable, the Cronbach's Alpha coefficient of reliability is used. Cronbach's Alpha is used for determined how well the items in a set are positively correlated to each other. Cronbach's Alpha is computed in terms of the average intercorrelations among the variables. If the Cronbach's Alpha is closer to 1, the internal consistency reliability is higher.

After collecting data from questionnaire which distributed to the respondents, the data will be analyzed and the results documented are concentrating on two directions which are to identify the factors influencing housing developers the most in choosing appropriate procurement strategy for their project and to rank the factors that influence the housing developers the most in choosing appropriate procurement strategy for their project.

Besides that, the data is analyzed by using descriptive statistics that available in SPSS package which provide the maximum, minimum, means, standard deviations and variance for interval scale independent and dependent variables. In this research, descriptive statistic such as frequency and mean will be compute for each item in the questionnaire. According to Denscombe (2010), the mean can be used with interval data and often used with ordinal data for social research. However, the mean is not appropriate to use with nominal-level data. According to Stamatis (2002) the mean range can be calculating using this equation:

$$\bar{R} = \sum R/n$$

Where:
$\bar{R}$ = mean range
$\sum R$ = sum of the ranges for the 14 parts
n = the number of parts used in the study (n=14)

3.7 Pilot Test

Cronbach's Alpha coefficient of reliability is used in this study to get the consistency of reliable variable. In this study, 15 set of questionnaire has been distributed among housing developer who registered under Real Estate and Housing Developers' Association (REHDA) in johor to test for reliability of questionnaire. The data has been collected and SPSS system are used to test the result. Sekaran (2003), state that if the Cronbach's Alpha is closer to 1, the internal consistency reliability is higher.

The purpose of this step is to find out if the questions are well understandable or not and also to find out any problem that may raise in filling the questionnaire. To obtain the

Cronbach's Alpha, the means for each question were generated and the means were put altogether, thus it was come out with 1 value of Cronbach's Alpha. The result of the pilot test in this study stated that the Cronbach's Alpha coefficient is 0.734 for all the variables. Since the Cronbach's Alpha coefficient is acceptable, so the element will be continue to analysis without any variable is deleted. Table 3.2 show the cronbach's Alpha value for this pilot test.

Table 3.2: Cronbach's Alpha for pilot test

Cronbach's Alpha	N of Items
.734	5

3.6 Summary

In this chapter, it is clearly stated how this research will conducted in order to get information about the factors influence housing developers to choose appropriate procurement strategy. For this research, the main respondents are project manager, procurement manager, consultant project manager, project coordinator and financial controller. The information will collected by using survey questionnaire and literature review. For data analysis, SPSS software will be used as well as for measuring the results. It is because SPSS software is suitable for quantitative analysis and survey questionnaire.

Besides that, this chapter is discussing the framework of research design through several stages that must be followed in order to get appropriate research design and produce data to be analyzed. In a nutshell, this chapter emphasized the research design process to ensure researcher get useful data and understand the data. Research design is important in order to determine the successful of future research process.

CHAPTER 4

RESEARCH FINDINGS AND ANALYSIS

4.1 Introduction

This chapter presents the quantitative findings of this research. The objectives of this research are to identify the factors influencing housing developers to choose appropriate procurement strategy for their project and to rank the factors that influence the housing developers the most in choosing appropriate procurement strategy for their project.

For this research, descriptive analysis was conducted to measures the respondents' profile and reliability analysis of the variables. The average mean is used to analyze the degree of importance of the factors influencing housing developers to choose appropriate procurement strategy. Besides that, the average mean was used to rank the factors and obtain the most influenced factor.

4.2 Questionnaire Distribution

The questionnaires were distributed to the targeted respondents to obtained data for analysis. In this research, the targeted respondents are housing developer that located at Johor. The questionnaire is divided into two sections which are Section A to collect general

information of respondent and Section B is conduct to examine the degree of influential of the factors that influenced housing developer to choose appropriate procurement strategy.

As determined in Chapter 3, the population of this research is 100 housing development companies and they are those who in project team although they are in different position. By referring to the table by Sekaran (2003), the sample size of this research is 80. According to Sekaran (2003), normally, the return rates of mail questionnaire is low but 30% response rate is acceptable. Table 4.1 shows that 80 questionnaires were distributed by using mailing and personally administered. For mailing questionnaire only 22 were responded from 70 questionnaires that distributed, while 8 questionnaires were collected from 10 questionnaires that distributed by personally administered which indicates a return rate 27.50% and 80% respectively.

Table 4.1: Distribution of questionnaire

Data collection method	Total distributed	Total Collected	Return Rate (%)
Mail questionnaire	70	22	27.50
Personally administered questionnaire	10	8	80
Total	80	30	37.50

By referring table 4.1, the total collected of questionnaires is 30 and the return rate of total data collected was 37.50% which is appropriate for statistical analysis in this research.

4.3 Respondent's Profile

The respondent's profiles were obtained from the Section A of the questionnaire. Four demographic questions were included in this section in determining the respondent's

profiles. Nevertheless, the demographic questions are not important to the research questions, but it is significant to know the background of respondents. Besides that, the demographic analysis was carried out by using descriptive statistic to analyze the respondent's background. Furthermore, the frequencies and percentage for each item will be presented.

Table 4.2: Respondent's profile

Variables		**Frequency**	**Percentage (%)**
Current position			
i.	Project manager	8	26.7
ii.	Procurement manager	0	0
iii.	Facilities/building manager	0	0
iv.	Administration	3	10
v.	Consultant project manager	0	0
vi.	Company director	1	3.3
vii.	Project coordinator	1	3.3
viii.	Financial controller	0	0
ix.	other	17	56.7
Company establishment			
i.	less than 10 years	7	23.3
ii.	10-15 years	9	30.0
iii.	More than 15 years	14	46.7
Working experience in current position		9	30.0
i.	Less than 10 years	11	36.7
ii.	10-15 years	10	33.3
iii.	More than 15 years		
Educational level			
i.	SPM	0	0
ii.	Diploma	4	13.3
iii.	Degree	24	80.0
iv.	Masters	2	6.7
v.	PhD	0	0

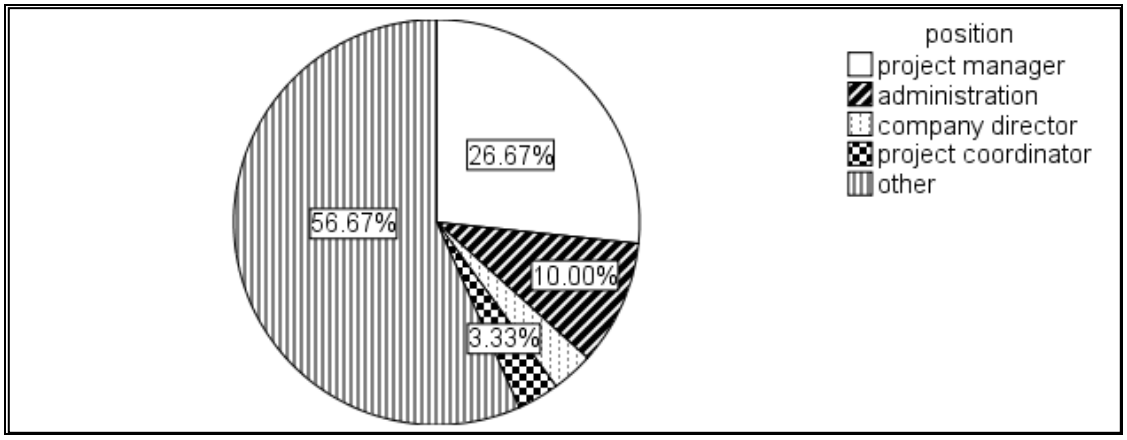

Figure 4.1: Respondent's current position

In figure 4.1 shows the current position of respondent. There are 8 respondents that represent project manager (26.67%), three are administration (10.00%), one is company director and project coordinator that represent 3.33% respectively and 17 of them are in another position (56.67%) such as quantity surveyor, general manager, project executive, project planner, project engineer, and assistant project manager.

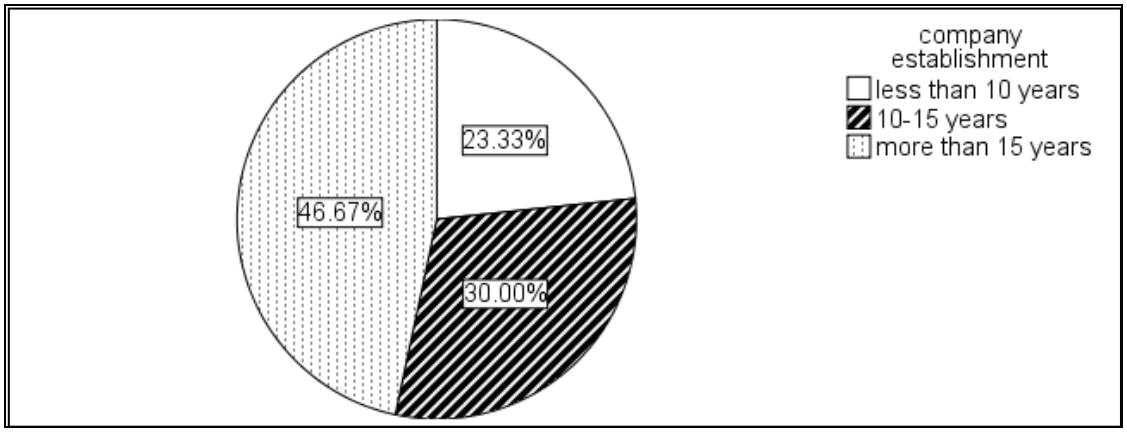

Figure 4.2: Company establishment

Referring to figure 4.2, more than 15 years of company establishment has the highest respondents with a number of 14 respondents (46.67%). For the 10-15 years of

company establishment, there are 9 respondents which are 30% and for the less than 10 years of company establishment, there are 7 respondents (23.33%).

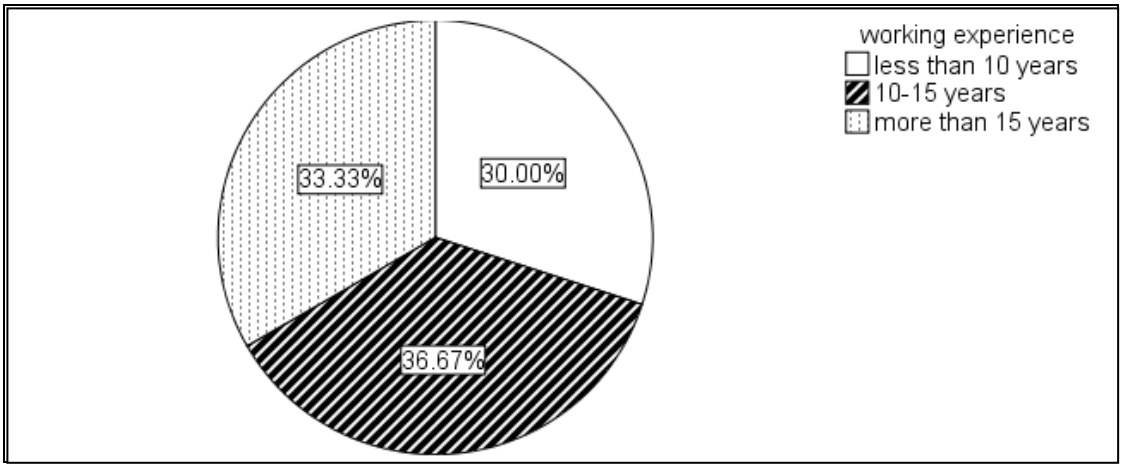

Figure 4.3: Working experience

Referring to figure 4.3, 10-15 years of working experience has the highest respondents with a number of 11 respondents (36.67%). For the more than 15 years of working experience, there are 10 respondents which represent 33.33% and 9 respondents have less than 10 years of working experience (30%).

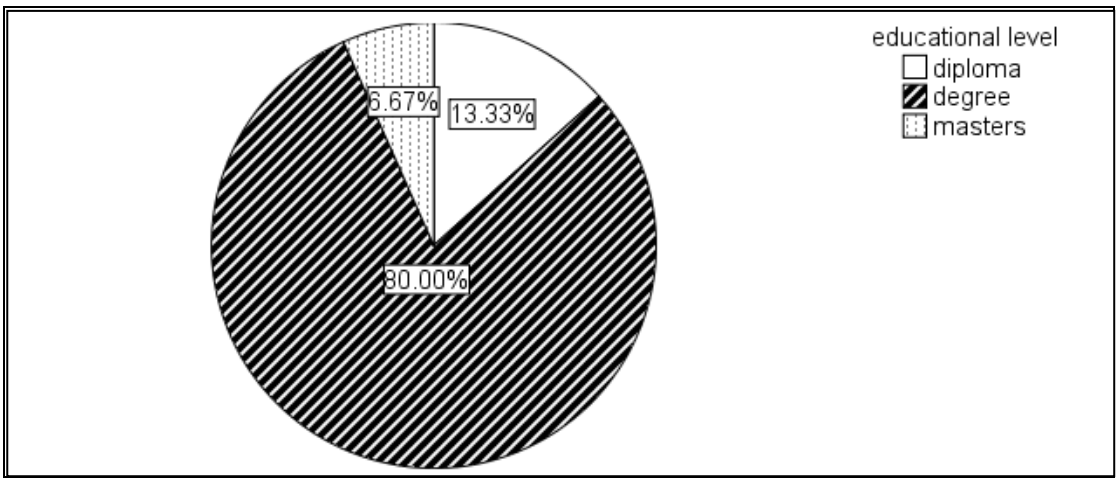

Figure 4.4: Educational level

In the figure 4.4, there are 24 respondents that have degree (80%), 4 respondents that have diploma (13.33%) and 2 respondents that have masters (6.67%).

4.4 Reliability Analysis

According to Cavana et al (2001), Cronbach's Alpha is a reliability coefficient that indicates the items in a set is positively correlated with one another and measuring the consistency of the items. To determine whether the questionnaire are reliable or not, reliability test must be carried out. The value of Cronbach's Alpha will show the reliability of the variables. According to Sekaran (2003), and Gliem, J and Gliem, R. (2003), the closer the Cronbach's Alpha coefficient gets to 1, the greater the internal consistency reliability. The Cronbach's Alpha values of the variables in this research are shown in table 4.3 below.

Table 4.3: Cronbach's Alpha

Cronbach's Alpha	Number of items (N)
.706	4

Sekaran (2003), indicated that Cronbach's Alpha less than 0.6 is considered to be poor, 0.7 is considered acceptable and over 0.8 is considered good. According to table 4.3 above, the variables used in this research were acceptable as the Cronbach's Alpha value was more than 0.7.

4.4.1 Deleting of Data

Table 4.4: Cronbach's Alpha

Cronbach's Alpha	N of Items
.568	5

Table 4.5: Reliability Test

Items	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Client characteristic and objective	9.425100	.874	.787	.374
Project characteristic	10.000075	.787	.554	.386
External environment	10.408400	.205	.841	.171
Decide upon procurement path	11.891750	1.409	-.690	.706
Understanding on importance of choosing appropriate procurement strategy	12.375075	1.114	.987	.530

Based on table 4.4 shown above, the Cronbach's Alpha for Section B that consists of Question 5, 6 and 7 is 0.568. According to Sekaran (2003), if the Cronbach's Alpha value is near to 1, it is consider that greater internal consistency reliability. According to Ntoumanis (2001), low corrected correlations indicate that the particular item is problematic and perhaps it should be removed. It is called corrected item - total correlation Problematic item can be detected by looking at the new alpha of the scale if item deleted. If the alpha increases considerably with the deletion of particular item, it might be appropriate to delete that item. Referring to table 4.5 above, the item decides upon procurement path that is Question 5 in the Section B was removed in order to get higher value of Cronbach's Alpha.

4.5 Factors Influencing Housing Developer to Choose Appropriate procurement Strategy

4.5.1 Identifying Factors Influencing Housing Developers The Most To Choose Appropriate Procurement Strategy

This part consist of result and discussion of three main factors that influencing housing developers to choose appropriate procurement strategy. The mean range of the results is 2.8571. The result shows in the table 4.6 below.

Table 4.6: Mean of Factors Influenced Housing Developer The Most To Choose Appropriate Procurement Strategy

Factors	N	Minimum	Maximum	Mean	Std. Deviation
Client experience	30	2.00	5.00	4.1000	.80301
Client type	30	3.00	5.00	4.0000	.58722
Client financial capability	30	2.00	5.00	4.4000	.67466
Client requirement for on time completion	30	3.00	5.00	3.9000	.66176
Client budget requirement	30	3.00	5.00	4.6333	.55605
Project scope	30	3.00	5.00	3.8667	.50742
Project size	30	3.00	5.00	3.6667	.60648
Project type	30	1.00	5.00	3.5000	.82001
Project site location	30	1.00	5.00	3.0667	.90719
Market competitiveness	30	1.00	5.00	3.1667	1.14721
Technological feasibility	30	1.00	5.00	3.2667	.82768
Availability of experienced contractors	30	2.00	5.00	3.8667	.62881
Political influences	30	1.00	4.00	2.1667	.83391
Cultural influences	30	1.00	3.00	1.6000	.77013

Table 4.6 shows the mean of each factors influenced housing developers to choose appropriate procurement strategy. Based on the table 4.6, with a mean 4.63, client budget

requirement factors was rated as a most influencing housing developer to choose appropriate procurement strategy. According to Babatunde, S.O., et al (2010), client budget requirement is consider as important factor in choosing procurement strategy. Mahon (2011) concluded that client budget requirement as being most influential factor to procurement selection. Besides that, client budget requirement is significantly influence the selection of appropriate procurement strategy compared to external environment (Ratnasabapathy et al., 2007). In the past research by Luu et al (2003), it was indicated that client budget requirement is the most influential in determining procurement method.

Client financial capability factors with a mean score 4.40 was rated this factors as being most influential on procurement selection. According to Ma (2011), the client financial capability is one of the most influential factors that have been identified. Besides that, Enshassi et al (2011) has found that client financial capability is the most influential factor because to meet the schedule financial commitment, the financial capability of an organization must be strong. Balson et al (2012), stated that the sufficient client financial capability plays an important role to ensure the quality of selected procurement. This result also is in agreement with Ogunsanmi (2013) findings in which the cost, time, quality, project characteristic and external environment selective criteria gives impact on the selection of procurement and project performance.

The next most influential factors were client experience with a mean score 4.10. Client experience is one of the factors that most influential in selecting procurement method. The experience and expertise of the client are the moderating factors on the procurement method selection (Luu et al, 2003). This finding also is supported by Kelly et al, (2009) stated that experience client will be able to choose procurement strategy which they has worked before and they know the suitable procurement strategy based on prioritization of risk. However, a research by Love at al (1998) argue that experience client is not necessary factor in contributing to the appropriate selection of procurement strategy, although client may obtain the knowledge and understanding the characteristics which project is being procured.

4.5.2 Ranking The Factors Influencing Housing Developers The Most To Choose Appropriate Procurement Strategy

The mean and rank of each of the factors influencing housing developers the most to choose appropriate procurement strategy are presented in Table 4.7 and figure 4.5 according to all respondents.

Table 4.7: Most Influential Factors in Choosing Appropriate Procurement Strategy

Factor	Mean	Rank
Client experience	4.1000	3
Client type	4.0000	4
Client financial capability	4.4000	2
Client requirement for on time completion	3.9000	5
Client budget requirement	4.6333	1
Project scope	3.8667	6
Project size	3.6667	7
Project type	3.5000	8
Project site location	3.0667	11
Market competitiveness	3.1667	10
Technological feasibility	3.2667	9
Availability of experienced contractors	3.8667	6
Political influences	2.1667	12
Cultural influences	1.6000	13

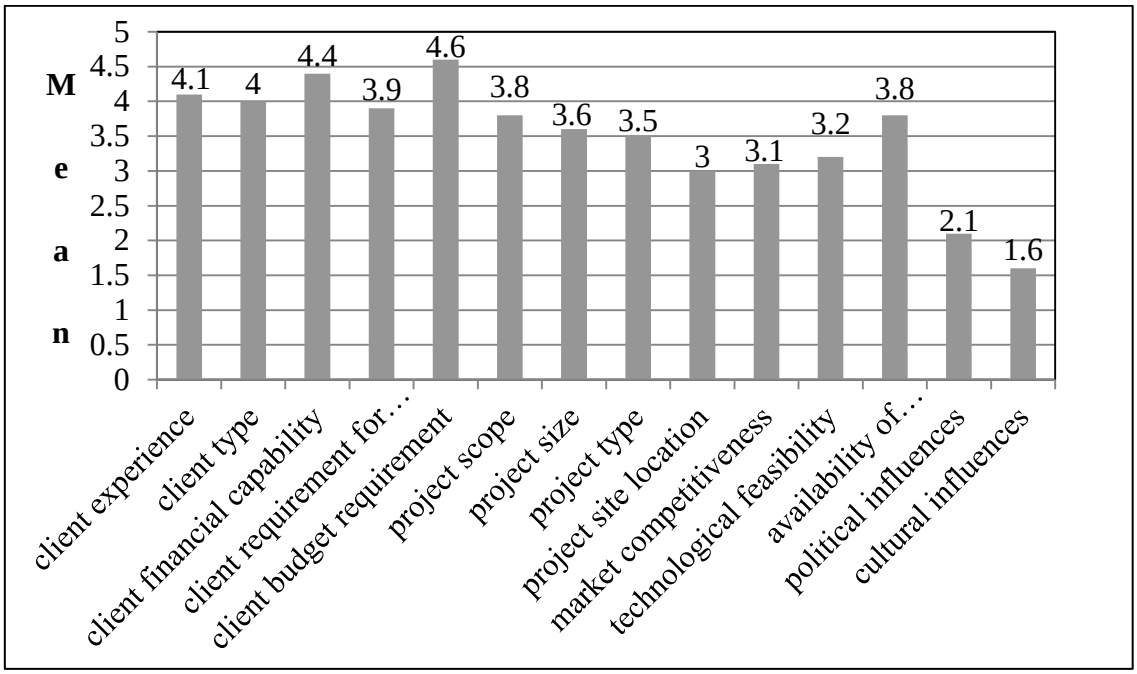

Figure 4.5: Most influential factors in choosing appropriate procurement strategy

From Table 4.7 and figure 4.5 mentioned above, it is noticed that client budget requirement has been ranked by the all respondents in the first position with the mean score 4.63, followed by client financial capability and client experience achieved mean score 4.40 and 4.10 respectively. The housing developers are agreed that these factors could influence the most in choosing appropriate procurement strategy. These factors can be included in terms of client characteristics and short term objectives (Luu et al, 2003). Osama (2013) in agreement that client related factors is a significant indicator affecting strongly the selection of procurement strategy. Ratnasabapathy et al, (2007) has agreed with this result as client requirement was ranked in the first position and it is most influential factor. Mahon (2011) are agree with this result as he ranked client factors in the third position and he concluded that this factor was an important factors to choose appropriate procurement strategy in terms of client experience and client requirement for value for money.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1 Introduction

There are several procurement strategies that clients can select to implement their projects and achieve their objectives. The selection of an appropriate procurement strategy is crucial to project success. To assist the clients in choosing the appropriate procurement strategy, a number of factors should be considered. An exploratory study of factors affecting the selection of procurement strategy was conducted in this research to determine the level of importance and influence for each factor. The researcher relied on literature review, field survey to achieve the goals of this research. In the process of conducting this research, there are limitations and recommendations for future research and conclusion are included in this chapter.

5.2 Limitation

There are several limitations in this research. The first limitation of this research is time constraints. To process data collection was time consume, therefore the period of given time to collect data was insufficient even though the data collection period was three

months. Survey questionnaire method also is the limitation in this research. This is because most of the targeted respondents did not interested to participate in this survey due to insufficient time, lazy and other working commitment. Therefore it is suggested to use another survey method such as telephone interview or face-to-face interview. Lastly, the techniques used to compile and evaluate data collected were relatively basic and were not intended to constitute in depth statistical analysis.

5.3 Recommendation

There are some recommendations for future research; firstly, future research should focus on developing models for the selection of an appropriate procurement strategy instead of identifying influence factors. Detail project-specific factors such as the project type, the degree of project complexity, and time constrains of project, and others could include into these models to assists construction companies in determining appropriate procurement strategy for their future projects.

Furthermore, further researches should not be limited to identify the influential factors, but it is beneficial if it can identify the impact of the type of procurement strategy on the project performance. The future researches could be examined in-depth the performance of several construction projects together with the procurement strategy selected and implemented.

5.4 Conclusion

Procurement strategy is a crucial part in construction process and it will lead to become a successful project and achieve project's goals. The selection of the appropriate procurement strategy is widely accepted as an important factor in performance of the project. Selection of an appropriate procurement strategy is a key decision in term of achieving client objectives, while an inappropriate choice can cause non-performance resulting into cost, time overrun and potential dispute. In view of the importance of choose

appropriate procurement strategy, it is necessary to identify and determine those factors that influence the appropriateness.

In this research, the housing development problem was identified such as project delays and project abandoned. The housing development problems were not only affecting the Malaysia's economy growth but it also burden Malaysia citizen especially the lower income group. These problems were caused mainly by inappropriate procurement management. Wrong selection of procurement strategy, disorganized procurement practices and improper procurement process is the factors that contributed to the procurement management related factors.

The research objectives are to identify the factors influencing housing developers to choose appropriate procurement strategy for their project and to rank the factors that influence the housing developers the most in choosing appropriate procurement strategy for their project. Therefore, all the fourteen factors were determined from literature review. The factors are 1) client experience, 2) client type, 3) client requirement for on time completion, 5) client budget requirement, 6) project scope, 7) project size, 8) project type, 9) project site location, 10) market competitiveness, 11) technological feasibility, 12) availability of experienced contractors, 13) political influences and 14) cultural influences.

This research was identified the most influenced factors, and these factors are potentially to affect the appropriate procurement strategy, thus it can assists housing developers as well as a client to take them into consideration to improve the selection of appropriate procurement strategy. These factors are client budget requirement, client financial capability and client experience. The least influential factors as evaluated by expertise in housing development companies are project site location, political influences and cultural influences.

It was concluded that the client budget requirement is at the first ranking followed by client financial capability at the second position and client experience is at the third position. These factors are categorized as client requirement and objectives in terms of

value of money. In spite of use common factors such as time certainty, cost certainty, speed, quality, risk allocation, price competition, complexity and flexibility, housing developers must take into account other factors that influence selection of appropriate procurement strategy such as client requirement and objectives, project requirement and external environment.

In addition, this research can guide or can be a reference for housing developers as well as clients in construction industry to decide in choosing appropriate procurement strategy. Besides that, the housing developers and other clients in construction industry can be more understanding on the key factors that need to consider before procurement is being chosen. Construction planners, managers and all other stakeholders involved in procurement decision-making should formulate a systematic selection approach, as this will assist in eliminating unnecessary project demands.

References

Abd El-Razek, M., Bassioni, H. and Mobarak, A. (2008).Causes of delay in building construction projects in Egypt. *Journal of Construction Engineering and Management*, 134(11), pp.831--841.

Abdul Nifa, F. (2014). Development Of A Framework For Partnering Through Aligning Organizational Cultures In The Malaysian Construction Industry. Ph.D.The University of SalfordSalford, UK.

Ahmed, S., Azhar, S., Castillo, M. and Kappagantula, P. (2002). Construction delays in Florida: An empirical study. *Final report. Department of Community Affairs, Florida, US.[Links]*.

Alhazmi, T. and McCaffer, R. (2000).Project procurement system selection model. *Journal of Construction Engineering and Management*, 126(3), pp.176--184.

Ayob, M. (2014). *Economic Report 2013/2014*. [online] Treasury.gov.my. Available at: http://www.treasury.gov.my/index.php?option=com_content&view=article&id=2588%3Alaporan-ekonomi-20122013&catid=73%3Asenarai-laporan-ekonomi&Itemid=174&lang=en [Accessed 30 Mar. 2014].

Babatunade, S., Opawole, A. and Ujaddughe, I. (2010).An Appraisal of Project Procurement Methods in the Nigerian Construction Industry. *Civil Engineering Dimension*, 12(1).

Balson, D., Gray, J., & Xia, B. (2012). Why the construction quality of design-build projects is not satisfactory: a Queensland study. In *Engineering, Project and Production Management 2012 Conference*.

Bresnen, M. and Marshall, N. (2000).Partnering in construction: a critical review of issues, problems and dilemmas. *Construction Management \& Economics*, 18(2), pp.229--237.

Creswell, J. (2003). *Research design*. 1st ed. Thousand Oaks, Calif.: Sage Publications.

Cooke, B., & Williams, P. (2013). Construction planning, programming and control. John Wiley & Sons.Davis, P., Love, P. and Bacarrini, D. (2006). *Building Procurement Methods*. Brisbane: CRC for Construction Innovation, pp.8-16.

Denscombe, M. (2010), *The good research guide*. Maidenhead: McGraw-Hill/Open University Press.

Dr. Chinedu, C. and Fidelis, I. (2011).Building construction project management success as a critical issue in real estate development and investment. *American Journal Of Social And Management Sciences*, 2(1), pp.56-75.

Ekung, S., Siriwardena, M. and Adeniran, L. (2013).Optimised Selection And Use Of Project Procurement Strategy In Nigeria: A Practical Case Study. *Ethiopian Journal of Environmental Studies and Management*, 6(6), pp.661-669.

El Wardani, M., Messner, J. and Horman, M. (2006).Comparing procurement methods for design-build projects. *Journal of construction engineering and management*, 132(3), pp.230--238.

El-Rufai,, N. (2012). *The tragedy of abandoned projects*. [online] Nigeria Intel. Available at: http://www.nigeriaintel.com [Accessed 18 Apr. 2014].

Ewa, U. (2013). Root Causes of Project Abandonment in Tertiary Institutions in Nigeria. *International Business Research*, 6(11).

Gliem, J. A., & Gliem, R. R. (2003). Calculating, interpreting, and reporting Cronbach's alpha reliability coefficient for Likert-type scales. *Midwest Research-to-Practice Conference in Adult, Continuing, and Community Education.*

Gould, F. and Joyce, N. (2003). *Construction project management*. 1st ed. Upper Saddle River, N.J.: Prentice Hall.

Ibrahim, S., Baharun, A. and Ayagi, K. (2011). An Investigation Into Abandoned Housing Projects In Sarawak, Malaysia. In: *International Building & Infrastructure Technology Conference*. Sarawak: Universiti Malaysia Sarawak, Sarawak, Malaysia, pp.104-105.

Idoro, G. (2012). The Influence of Project Documents on the Outcome of Construction Projects Procured by Traditional Contracts in Nigeria. *Journal of Construction in Developing Countries*, 17(1).

Jusoff, H. and Adnan, H. (2009).Partnering Project Success Criteria in Malaysia. *International Business Research*, 1(4), p.94.

Khalid, M. (2014). *Abandoned Housing Development: The Malaysian Experience*.Ph.D. Heriot-Watt University Edinburgh.

Kelly, J., Morledge, R., & Wilkinson, S. J. (Eds.). (2009). *Best value in construction*. John Wiley & Sons.

Kumar, R. (2005). *Research methodology*. 1st ed. London: SAGE.

Lesniak, A., Plebankiewicz, E. and Zima, K. (2012). Design and build procurement system--contractor selection. *Archives of Civil Engineering*, 58(4), pp.463--476.

Lo, T., Fung, I. and Tung, K. (2006). Construction delays in Hong Kong civil engineering projects. *Journal of Construction Engineering and Management*, 132(6), pp.636--649.

Love, P., Davis, P., Baccarini, D., Wilson, G. and Lopez, R. (2008). Procurement selection in the public sector: a tale of two states.

Love, P., Davis, P., Ellis, J. and Cheung, S. (2010). Dispute causation: identification of pathogenic influences in construction. *Engineering, Construction and Architectural Management*, 17(4), pp.404--423.

Luu, D., Ng, S. and Chen, S. (2003). Parameters governing the selection of procurement system--an empirical survey. *Engineering, Construction and Architectural Management*, 10(3), pp.209--218.

Luu, D., Ng, S. and Chen, S. (2005). Formulating procurement selection criteria through case-based reasoning approach. *Journal of computing in civil engineering*, 19(3), pp.269--276.

Ma, H. (2011). Factors affecting the bid/no bid decision making process of small to medium size contractors in Auckland.

Mahon, C. (2011). Key procurement selection criteria of Auckland interior fitout clients: An empirical study.

Martel, A., Harley, J., Wakefield, R. and Horne, R. (n.d.).Innovation in the procurement of remote Indigenous housing.

Mathonsi, M. and Thwala, W. (2012).Factors influencing the selection of procurement systems in the South African construction industry. *Academic Journals*.

Miller, G., Furneaux, C., Davis, P., Love, P. and O'Donnell, A. (2009).Built environment procurement practice: impediments to innovation and opportunities for changes. *Curtin University of Technology*.

Ministry of Housing, Local and Government, (2013). *National Housing Policy*. [online] Available at: http://www.kpkt.gov.my/kpkt_2013/fileupload/dasar/DRN_BM.pdf [Accessed 22 Mar. 2014].

Misni, F., Muhammad, N., Zakaria, R., Yazir, S. and Satari, S. (2012), Applied Statistic Module, 3rd ed, Universiti Malaysia Pahang.

NA, H., MAM, A. and others, (2011).Faktor luaran dan dalaman yang mempengaruhi harga rumah teres di Bandar Baru Bangi. *Jurnal Rekabentuk dan Binaan*, 4, pp.1--8.

Naoum, S. (2003).An overview into the concept of partnering. *International journal of project management*, 21(1), pp.71--76.

Noor, M., Khalfan, M. and Maqsood, T. (2013). The role of procurement practices in effective implementation of infrastructure projects in Pakistan. *International Journal of Managing Projects in Business*, 6(4), pp.802--826.

Ntoumanis, N. (2001). *A step-by-step guide to SPSS for sport and exercise studies*. Routledge.

Nyström, J. (2005). *Partnering; definition, theory and the procurement phase*. [online] Building and Real Estate Economics Department of Infrastructure Royal Institute of Technology. Available at: http://www.diva-portal.org/smash/get/diva2:8711/FULLTEXT01.pdf [Accessed 21 Apr. 2014].

Ogunsanmi, O. (2013). Effects of Procurement Related Factors on Construction Project Performance in Nigeria. *Ethiopian Journal of Environmental Studies and Management*, 6(2), pp.215--222.

Ojo, A. and Gbadebo, M. (2012).Critical selection criteria for appropriate procurement strategy for project delivery in Nigeria. *Journal of Emerging Trends in Economics and Management Sciences*, 3(5), pp.422--428.

Oyegoke, A., Dickinson, M., Khalfan, M., McDermott, P. and Rowlinson, S. (2009). Construction project procurement routes: an in-depth critique. *International Journal of Managing Projects in Business*, 2(3), pp.338--354.

PertubuhanArkitek Malaysia, (2013). *Architects' Role in Housing Affordability*. [online] Available at: http://www.pam.org.my/ [Accessed 20 Mar. 2014].

Pickavance, K. (2005). *Delay and disruption in construction contracts*. 3rd ed. London: LLP.

Prime Minister Office's Malaysia, (2014). *Rancangan Malaysia ke-10*. [online] Available at: http://www.pmo.gov.my/ [Accessed 31 Mar. 2014].

Queensland Department of Housing and Public Works, (2008). *Procurement Strategy and Contract Selection*. [online] Available at: http://www.hpw.qld.gov.au/SiteCollectionDocuments/CWMFProcurementStrategy.pdf [Accessed 3 Mar. 2014].

Rahman, H., Alashwal, A., Ayub, M. and Abdullah, A. (2013).Abandoned Housing Projects In Malaysia: Pressing Issues during the Rehabilitation Process. *ArchNet-IJAR*, 7(1).

Rajeh, M., Tookey, J. and Rotimi, J. (2014). Procurement Selection Model: Development of a Conceptual Model Based on Transaction Costs. 2(2), pp.56--63.

Rashid, R., Taib, I., Ahmad, W., Nasid, M., Ali, W. and Zainordin, Z. (2006).Effect of procurement systems on the performance of construction projects. *Padang on*, pp.21--24.

Ratnasabapathy, S. and Rameezdeen, R. (2007).A decision support system for the selection of best procurement system in construction. *Built-Environment Sri Lanka*, 7(2), pp.43--53.

REHDA (2012). *Real Estate and Housing Developers' Association*. [online]. Last accessed 9

April 2014 at: http://www.rehda.com/members/johor.html

SABAH, State of (2010). *Housing Development (Control And Licensing) Enactment 1978*.

[online]. Last accessed 9 April 2014 at: http://www.sabah.gov.my/mlgh/HousingDevelopment(ControlAndLicensing)Enactmeny1978.pdf

Sekaran, U. (2003). *Research methods for business*. 1st ed. New York: John Wiley & Sons.

Shane, J., Molenaar, K., Anderson, S. and Schexnayder, C. (2009). Construction project cost escalation factors. *Journal of Management in Engineering*, 25(4), pp.221--229.

Singh, R. (2009). Delays and cost overruns in infrastructure projects: an enquiry into extents, causes and remedies.

Stamatis, D. (2002). *Six Sigma and Beyond*. Hoboken: Taylor & Francis Ltd.

Tewksbury, R. (2009). Qualitative versus Quantitative Methods: Understanding Why Qualitative Methods are Superior for Criminology and Criminal Justice. *Journal of Theoretical \& Philosophical Criminology*, 1(1).

The Chartered Institute of Building, (2010). *A Report Exploring Procurement In The Construction Industry*. [online] Available at:http://www.ciob.org/sites/default/files/CIOB%20research%20

%20Procurement%20in%20the%20Construction%20Industry%202010_1.pdf[Accessed 3 Mar. 2014].

Toor, S. and Ogunlana, S. (2008). Problems causing delays in major construction projects in Thailand.*Construction Management and Economics*, 26(4), pp.395-408.

Yap, E. (2013). Causes of abandoned construction projects in Malaysia.

APPENDIX A1

QUESTIONNAIRE SURVEY FORM

Dear Sir/Madam,

I am a student from University Malaysia Pahang undertaking Bachelor of Project Management. Currently, I am doing a research in order to fulfill the graduation requirements of Bachelor of Project Management. . The topic of my research is A Study on Factors Influenced Housing Developers to Choose Appropriate procurement Strategy. Generally, procurement management in construction is crucial part in construction process in order to choose appropriate procurement strategy to carry out the project.

Your assistance in completing the attached questionnaire is highly appreciated. All information given will be kept strictly confidential and used for the purpose of this research only. Kindly contact me if you have any inquiries pertaining to this questionnaire.

Thank you.

Raja Nurfarhana bt Raja Razalli

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Section A: Demographic

Please tick (✓) at the appropriate space which BEST describe your background

1. Current position

Positions	Tick one only
Project Manager	
Procurement Manager	
Facilities/Building Manager	
Administration	
Consultant Project Manager	
Company Director	
Project Coordinator	
Financial Controller	
Other(please specify)	

2. Company establishment

Years	Tick one only
Less than 10 years	
10-15 years	
More than 15 years	

3. Working experience in current position

Years	Tick one only
Less than 10 years	
10-15 years	
More than 15 years	

4. Educational level

Educational level	Tick if applicable
SPM	
Diploma	
Degree	
Masters	
PhD	

Section B: The factors influence housing developers to choose appropriate procurement strategy

Please tick (✓) at the appropriate space according to your answers

5. How does your organization decide upon procurement path?

How does your organization decide upon procurement path?	Tick if applicable
Consultant advice	
Company expertise	
Combination of consultant advice and company expertise	
Procurement selection models	
Past experience (historical projects)	

6. Based on your understanding on procurement strategy, please rate the level of influence on appropriate procurement strategy selection.

Please rate on scale 1-5 how influential each of the 14 factors on appropriate procurement selection	Not influential at all	Minimal influential	Some influential	Influential	Very influential
	1	2	3	4	5
Client experience					
Client type					
Client financial capability					
Client requirement for on time completion					
Client budget requirements					
Project scope					
Project size					
Project type					
Project site location					
Market competitiveness					
Technological feasibility					
Availability of experienced contractors					
Political influences					
Cultural influences					

7. Based on your understanding on importance of choosing appropriate procurement strategy, please answer the following question.

Please rate on scale 1-5 how importance each of the 14 factors on appropriate procurement selection	Yes	No	Not sure
Does client experience levels play a large pert in choosing appropriate procurement strategy?			
Does the type construction industry client dictate which procurement strategy is appropriate?			
Does the client's financial will determine which procurement strategy is suitable to adopt?			
Does the client requirement for on time completion is most important factors that need to consider?			
Does the project scope will determine which procurement strategy is appropriate to choose?			
Does the project size will help to determine the appropriate procurement strategy to be chosen?			
Does project type will differentiate the type of procurement strategy used?			
Does physical location will play role in determining the procurement strategy is assessed?			

Does market competitiveness will give a significant impact on the price competition between potential contractors and consultant?			
Does technology feasibility is one of the factors that need to be considered?			
Does availability of experience contractors will influence in choosing appropriate procurement strategy?			
Does political influences is typically most importance factors in choosing appropriate procurement strategy?			
Does a cultural influence will affect the procurement selection?			

APPENDIX A2

		Week													
No	**Research Activity**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
1	Briefing by FYP coordinator														
2	Meeting with supervisor, discussing project title and objective														
3	Deciding the topic and objectives														
4	Getting supervisor's approval of the topic and objectives														
5	Preparing project research proposal														
6	Preparing chapter 1,2,3														
7	Submitting draft 1,2,3														
8	Correcting and editing chapter 1,2,3														
9	Preparing cover page, content, preference list, questionnaire														
10	Submitting full report of FYP 1														
11	Preparing slide for oral presentation														
12	Presenting the FYP 1														

APPENDIX A3

		Week													
No	**Research Activity**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
1	Data collection														
2	Analysis of data														
3	Preparing chapter 4,5 and presentation poster														
4	Submitting draft of chapter 4,5 and presentation poster														
5	Correcting and editing chapter 4,5 and presentation poster														
6	Preparing cover page, content, preference list, questionnaire														
7	Submitting full report of FYP 2														
8	Preparing slide for oral presentation														
9	Presenting the FYP 2														
10	FYP 2 completed														