

**A STUDY ON THE CRITERIA OF  
CONTRACTOR CHOSEN BY CLIENT**

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STUDY ON THE CRITERIA OF CONTRACTOR CHOSEN  
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Thesis submitted in fulfillment of the requirements  
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## ABSTRACT

Contractor is an organization or individual who directly employs or engages construction workers or as part of their business carries out, manages or control construction work. Selection of contractor is a crucial part in the process of construction management. It gives big influences upon projects and their successes. [8] On the other hand, it also affect the contractor since they fail during tendering process. Therefore, the decision to tender is the first step that contractors need to consider. [7] The tender price will be influence by the risk factors. The risk has the capacity of eroding profit and moving the project from a profit making into loss-making venture. The contractor that fail to get awarded, generally cannot generate income and slowly effect the company's reputation. [4] Hence, a study was conducted to determine the criteria of contractors that to be chosen by client. In order to win the tender, the contractor need to better understand the requirement to fulfil the client's needed. [2] The main objective of this study was to find the factors that influence while selecting the criteria of contractor by client. The study was conducted by sending a questionnaire to respondents, having an industrial visit and conducted an interview session. The respondents involve were 57 persons from client, contractor and developers that registered with CIDB. Therefore, to analyze the data collected, Relative Importance Indices (RII) will be utilized. In this study, three main factors were point out that were in term of experience of the contractor, financial of the contractor and the management of the company. Between these three factors, the result showed that management of the company was the most factor to be chosen by client. As a conclusion, the most chosen criteria of contractor was in term of management of the company. Recommendations were also included in this study to improve the method of selection the best criteria of contractor for any construction project.



## ABSTRAK

Kontraktor adalah sebuah organisasi atau individu yang secara langsung menggunakan atau melibatkan pekerja-pekerja binaan atau sebagai sebahagian daripada perniagaan mereka menjalankan, menguruskan atau mengawal kerja-kerja pembinaan. Pemilihan kontraktor adalah bahagian penting dalam proses pengurusan pembinaan. Ia memberi pengaruh besar kepada projek dan kejayaan mereka. [8] Sebaliknya, ia juga memberi kesan kepada kontraktor sekiranya mereka gagal semasa proses tender. Oleh itu, keputusan tender adalah langkah pertama yang kontraktor perlu dipertimbangkan. [7] Harga tender akan terkesan oleh faktor-faktor risiko. Risiko mempunyai kapasiti menghakis keuntungan dan menyebabkan projek tersebut daripada projek membuat keuntungan pada projek yang membuat kerugian. Kontraktor yang gagal semasa proses tender, secara amnya tidak dapat menjana pendapatan dan perlahan-lahan memberi kesan kepada reputasi syarikat. [4] Oleh itu, kajian ini dijalankan untuk menentukan kriteria kontraktor yang dipilih oleh pelanggan. Dalam usaha untuk memenangi tender, kontraktor perlu lebih memahami keperluan pelanggan yang diperlukan. [2] Objektif utama kajian ini adalah untuk mencari faktor-faktor yang mempengaruhi semasa memilih kriteria kontraktor oleh pelanggan. Kajian ini telah dijalankan dengan menghantar soal selidik kepada responden, dengan mengadakan lawatan industri dan mengadakan sesi temuduga. Responden yang terlibat adalah seramai 57 orang terdiri daripada pelanggan, kontraktor dan pemaju yang berdaftar dengan CIDB. Oleh itu, untuk menganalisis data yang dikumpul, kaedah "Relative Importance Indices" akan digunakan. Dalam kajian ini, tiga faktor utama dipilih melalui kajian terdahulu iaitu dari segi pengalaman kontraktor, kewangan kontraktor dan pengurusan syarikat. Antara ketiga-tiga faktor, hasilnya menunjukkan bahawa pengurusan syarikat adalah faktor yang dipilih oleh pelanggan. Kesimpulannya, kriteria yang dipilih oleh kontraktor adalah dari segi pengurusan syarikat. Cadangan juga telah dimasukkan dalam kajian ini untuk meningkatkan kaedah pemilihan kriteria kontraktor yang terbaik untuk sebarang projek pembinaan.

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## LIST OF SYMBOLS

$P_i$	Respondent's Rating
$U_i$	Number of Respondents Placing an Identical Weighting/Rating
$N$	Sample Size
$n$	The Highest Attainable Score

## **LIST OF ABBREVIATIONS**

CIDB	Construction Development Board Malaysia
RII	Relative Importance Indices



## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 INTRODUCTION**

This chapter will discuss some introduction on contractor which is the criteria of contractor to be chosen by client. The overall objective of this chapter is to identify the background of study, the problem statement, research objective, scope of study, research methodology, significant of study and the expected outcome.

Construction project must be managed in an effective manner. Client is a person that receives a services from professional person or organization in return for payment. The demands from clients and competition have been growing rapidly. In order to fulfil the client's needed, each specification in the tender should be cleared by the contractor so that contractor know what is needed to put in the tender.

Selecting an appropriate contractor is essential for the success of any construction project while choosing the wrong contractor will lead a project faced a few risks during completing the project. Once the contract has been signed, the contractor have the responsibility to perform the project either the contract is continue for better or for worse, in sickness and in health, until their natural or unnatural conclusion. Consequently, the contractors cannot simply tender for a project without consider those risk that involved in the project. As a result of not recognized the risks, it may cause the contractors to lose money or become bankrupt [5].

Clients generally need the best criteria in selecting the contractor in order to get best result in term of cost, time and quality. On the other hand, delays influence negatively on the contractor performance and contribute to adverse impacts in construction projects such as contract disputes, low productivity and increase in construction cost.

As the contractor, they must do their best to get awarded during tendering [9]. So that, contractors also need to list out and make deep research what's criteria that client seek to award the contract. As the building projects are getting complex, the contractors need to meet specific demand [1]. Since the economy of our country is weakens, the client looking the contractor that offers the lowest price. Historically, clients usually award the contract to the lowest bidder during tendering. However, there are 3 main point that are highlighted during selection of contractor which are in term of cost, time and quality [6].

## **1.2 BACKGROUND OF STUDY**

A contractor is an organization or individual who directly employs or engages construction workers or as part of their business carries out, manages or control construction work. According to Nieto-Morote, and Ruz-Vila [2], selecting an appropriate contractor is essential for the success of any construction project. The complexity and diversity of the current construction industry aggravate the various risks and uncertainty faced by contractor, which influence their ultimate performance levels. The adequate selection of suitable contractor is directly related to construction project success and the achievement of specified objectives, therefore contractor selection constitutes a critical decision for any project manager.

The selection of a contractor is a crucial decision made by client. Usually the price/cost criteria is dominate as the client seek the most economic price. However, dominating of one of these criteria may negatively affect to others. The main aim of selection of contractor is to find out the lowest possible price, the reputation for good quality workmanship and efficient organization and the ability of contractor to complete on time (M. Brook, 1993).

## **1.3 PROBLEM STATEMENT**

Client is a person or company that receives a service from professional person or organization in return for payment. In construction, the client have the right to choose the best contractor to complete the construction work. According to Ruben Favie, Ger Mass, and Gary Abdalla, [1] one of the steps in those processes is the assessment of the contractors on the basis of the specific criteria. Which criteria have to be used depends on the wishes of the client. As the building projects are getting more complex, the

contractors that builds these projects have to meet specific demand. Since the economy of our country is weakens, the client looking the contractors that offers the lowest price.

Choosing the wrong contractor will lead a project face a few risks during completing the project. So that, a wide variety of criteria have been proposed [11]. According to Abedi, Fathi & Mohamad (2011), delays influence negatively on the contractors performance and contribute to adverse impacts in construction projects such as contract disputes, low productivity and increase in construction costs. The main threat is the clients do make costly mistakes in their decisions to award the contractors to unqualified contractors and this would eventually have damaging consequences on the project and clients' investment. It therefore became necessary to examine the different criteria adopted by clients in selecting contractors in Malaysia in order to find out the most important criteria that clients should focus on when awarding construction contracts to main contractors (Arazi Idrus, Mahmood Sodangi & Mohamad Afeq Amran, 2011).

The efficiency of a construction process is usually associated with the successful of choosing a contractor. In practice, various procedure of contractor selection are used, but the final decision depends mainly on the service's price that have been proposed. Furthermore, different countries use different procedures to select the "cheapest" contractor [12]. All these procedures are aimed at selecting a qualified contractor on a competitive basis, but in reality a decision is usually based on a single criterion [13]. Lately, the "lowest-bid" selection practice has been criticized because it may lead a high-risk exposure of the client.

As the contractor, they must do their best to get awarded during tendering. In order to win, they need to give lowest price and comparable with the building that need to be constructed. Contractors need to be confident that the estimates that form the basis of their tenders are realistic. If their tender prices are consistently high they will fail to attract work, alternatively if their prices are too low, they will gain work at unprofitable rates (Andrew & Baldwin, 1990). Since there are few contractors will fail during tendering, they need to try other project. What if the contractor or company do not get any project? It will give side effect to the contractors. So that, contractors also need to list out and make deep research what's criteria that clients seek to award the contract. Contractors who are successful would place more emphasizes on factors that affect schedule, cost and quality of the projects (Florence & Min, 2005).

## **1.4 OBJECTIVES**

The objectives of the research are:

- 1) To study the current method in selecting the contractor.
- 2) To identify the factors influencing in selecting the criteria of contractor.
- 3) To identify the most important criteria that to be chosen by clients.

## **1.5 SCOPE OF WORK**

This research is to determine the criteria of contractors choosing by client. One of the most important steps in every production process is the selection of a supplier. In the construction industry, contractor is one of the suppliers. This study is focus on the criteria that is adopted by clients to choose the best contractor. Minimum 30 respondents from the construction industry, which are the developers will be given the questionnaire to be answered and having an interview session. This study will be held around Kuantan area.

## **1.6 METHODOLOGY**

Based on the literature review that have been made, the problem statement is proposed. The sources of literature review are from journals, books, internets and also from the interview session. This study is focus on characteristics of contractor choosing by client. Then, three objectives have been determine, so that this study will follow the objectives. Flow chart of this study is produced to know the steps for this research. The methodologies used in this study are industrial visit, interview session and distribute the questionnaire to construction industry. The data analysis is determine by interview interpretation and using RII method, Relative Importance Indices. Finally, the conclusion will be made after this study is finished.

## **1.7 SIGNIFICANT STUDY**

The significant of this study is to determine the criteria of contractors that to be chosen by client in order to get the best result on cost, time and quality of the project.

Clients are now faced with how to evaluate the subjective criteria such as the contractor's past performance, skill and knowledge. Most of the clients use a multistep process including a short listing, an interview and a final evaluation and do the selection.



Figure 1.1 Aspect That Contractor Need to Consider

## 1.8 EXPECTED OUTCOME

The best contractor must fulfil the 3 main things in construction project which are time, cost and quality of the project. This study will produce the result that will help client to find the best contractor that fulfil the requirement that client needed while for contractor, this study will help them to improve their skill and try to be as what's client looking for.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 INTRODUCTION**

This chapter has been discussed on some of selected literature review and issues of criteria of contractor chosen by client in Malaysia which Kuantan had been specifically chosen for this study. The overall objective of this chapter was to develop more knowledge and understanding the previous research regarding the topic that being study.

In modern construction projects there are significant challenges for both clients and contractors to deliver the project successfully due to increasing complexity in design and the involvement of a multitude of stakeholder (Doloi, 2009). Clients generally need the best criteria in selecting the contractor in order to get best result in term of cost, time and quality. During last couple of decades, the iron triangle (under budget, on time, good quality) has been widely accepted criteria for project success. Selecting an appropriate contractor is essential for the success of any construction project while choosing the wrong contractor will lead a project facing a few risks during completing the project.

The physical development of construction project in any nation such as building, roads and bridges, the construction industry is vital to measure their economic growth. Wang and Huang (2006) stated that project success means different thing to different people. Contractors play an important role in any construction project, which is why the selection of contractor constitutes a critical decision for project owners. Historically, the contractor is chosen among the lowest bidder during tendering process. Since the economy of our country is weakens, client looking the contractor that offers the lowest price. According to M. Brook (1993), the main aim of selection of contractor is to find out the lowest possible price, the reputation for good quality workmanship and efficient organization and the ability of contractor to complete on time.

In most countries, a selective procedure called as ‘prequalification’ is employed to screen out these contractors having low capabilities, the remaining bidders are then evaluated for further consideration. This helps to minimize the amount of abortive tendering of contractors (S.T Ng, R.M Skitmore, 1999).

## **2.2 CURRENT PRACTICES FOR CONTRACTOR SELECTION**

Nowadays, in order to award public projects in the construction industry, the methods used for selecting contractors are usually based on the principle of acceptance of the lowest bid price. However, the evaluation on lowest price basis is one of the major causes of project delivery problems. The selection based on the low price can be one of the reason for project completion delays, poor quality and financial losses [15]. An offered bid price is undoubtedly an important factor while choosing a contractor, but there are many other important issues playing a vital role in project implementation that have to be incorporated in the contractor’s prequalification process. Russell performed an analysis of contractor selection data and determined the criteria as strongly influencing decision-making in contractor’s selection. [14] The literature review by Hatush and Skitmore [16], and Topcu [17] shown that the most widely accepted criteria for prequalification of the contractor were: financial stability, management and technical ability, contractor’s experience, contractor’s performance, resources, quality management, plant and human resources, health and safety, and environmental concerns.

## **2.3 CRITERIA OF CONTRACTORS**

### **2.3.1 Experience of Contractor**

In actuality, contractor evaluation is regularly performed by industry professional using their accumulated experience and judgement. Selecting a contractor is a major decision that may influence the progress and success of any construction project. Both the expertise and performance of contractor had a significant role in successful delivery of a project [17]. In order to complete the construction project within the time given, competency of the contractor is one of the aspect that will be looking for. An excellent reputation of the contractor will lead the contractor to have next project maybe more complex than previous project. This is because client believe in the achievement of the

contractor that could complete the project as well as the client requirement. So it is necessary to select a contractor who has the requisite experience. Therefore, it requires knowledge and experience from the project manager in order to use the appropriate criteria to insure the selection of the most suitable contractor technically and financially for the project [10].

### **2.3.2 Financial of Contractor**

Hatush and Skitmore [16], pointed that the tender system of basing decisions on the minimum price has been used in New York since 1848 for highway and bridge tenders. The main idea of such a method was to save the financial resources and create an equal competition for all contractors by lowest bid. In selecting the contractor, client need to know the financial of the contractor which contribute to the payment between contractor and sub-contractor. Contractor that have strong financial surely not facing financial problem that will affect the whole construction project. However, a good contractor will have a good financial planning so that, it will not face any arrear to pay the supplier. This is because, financial planning is one of the most important thing that need to consider by the contractor if they do not want to deal with financial risks that could cause bankrupt.

### **2.3.3 Management of Contractor's Company**

Since contractor is an organization that employs construction workers, they must good in managing the company. They need to complete the construction project with lowest risk so that it will make the project run smoothly and within the budget. Ideally, a contractor completes their obligations under a contract and the client reciprocates by paying the contractor for doing so. Discharging a contract in such a way is "termination by performance". Contractor should not simply let their workers work without any insurance. It is an important thing that need to consider such as an accident occur at the work place, so that the worker has the insurance to cover. However, this is the responsibility of the contractor to supervise and coordinate the workers at site.



## **CHAPTER 3**

### **RESEARCH METHODOLOGY**

#### **3.1 INTRODUCTION**

In this chapter, the methodology used in conducting the research were discussed including research design, study area, study sample, research instruments, data analysis and research framework. These methods were used to ensure the research objectives were achieved.

#### **3.2 RESEARCH DESIGN**

The research method used for this study was the survey research method which included both qualitative and quantitative data. A survey research was the research methodology used in collecting data directly from a group of subjects (Chua, 2012). Chua stated that this methodology was conducted by using interviews or questionnaires, where the questions were given orally or through a paper-pencil format. This study was focused mainly at quantitative analysis as the second and third objectives in this study used questionnaire method which this method was usually used to collect quantitative data.

The best method to be used in data collection methods for this study was through site visit, semi-structured interview and questionnaires.

#### **3.3 RESEARCH SAMPLING**

In this topic, research sampling would be covered the study population, study sample and study area. In the study population would highlighted the criteria of the study population. For the study sample, the chosen sample was discussed in this topic and the location for conducting this study would also be discussed.

### 3.3.1 Study Population

The selected study population for this study was the construction industry in Kuantan, Pahang. They were evaluated by their method of choosing the criteria of contractors that would be awarded. The criteria of the study population were the people in construction industry such as the contractor, project manager, developers and also the clients. Involvement of the respondents was needed in completing the survey form.



Figure 3.1 Location of Kuantan, Pahang.

### 3.3.2 Study Sample

To ensure the first objective were achieved, which is, to study the current method in selecting the contractor, the suitable study sample were the clients and developers. The data were collected through walkthrough observation and interviewing the clients and developers. The second objective would be achieved by identify the criteria of contractor that to be chosen through the distribution of questionnaire. It was also the same for the third objective which the questionnaire would be distributed to identify the most important criteria of contractor that clients choose.

### 3.3.3 Study Area

The study area of this study would be focused around Kuantan area. There are 6 sub-district in Kuantan which are Kuala Kuantan, Ulu Kuantan, Penor, Sungai Karang, Ulu Lepar and Beserah. Kuantan is the capital of the state and located in the eastern part of the country.

Since Kuantan has 6 sub-district, there are 243 construction companies and 263 contractors within Kuantan area.



Figure 3.2 Sub-District in Kuantan, Pahang.

## 3.4 DATA COLLECTION

This topic would discuss about the data collection methods used for obtaining information. The main instruments which would be used for this study were interview and questionnaire.

### 3.4.1 Interview

Interview was a technique that was used to gain understanding for people's attitudes or behavior orally. Interviewing the respondents will be done to gain more

information on this study. This interview techniques was one of the main methods in this study and the device used during the interview would be either video recorder, audio recorder or other electronic items to record the answer as the proof of evidence in this study. A semi-structured interview would be conducted for this study which the interview will be focused by asking questions but with scope for the respondents to express themselves at length.

### **3.4.2 Questionnaire**

As the main method used in this study, questionnaire was a series of questionnaire used to elicit information which was filled in by the respondents in the sample area. The questionnaire will be focused on the factor influencing in selecting the criteria of contractor. Along with that, the questionnaire will be intended to achieve the second and third objective of this study.

The questionnaire was divided into two parts. The first part contains three important questions that are relevant to the information of the respondents. The second part of the questionnaire is based on the factor influencing while choosing the contractor. The questionnaire consists of 27 factors which were identified from the literature review. These factors are grouped into three main factors: i) experience of contractor; ii) financial of contractor: iii) management of contractor's company.

The questionnaire was sent to the clients, contractors, developers and project managers who are actively associates with the construction activities and possessing sufficient experience in the construction industry.

The total of 100 questionnaires have been distributed and 57 respondents were response to the questionnaire. In part two, the respondents were asked to access the factors influencing in selecting the criteria of contractor. On a scale of 1 to 5, depending upon its effect, 1 being the least important and 5 the most important.

### **3.5 DATA ANALYSIS**

This topic discussed on how the data collected will be analyzed by using the suitable method which was the Relative Importance Indices (RII).

### 3.5.1 Relative Importance Indices

The collected data was analyzed by RII method to determine the relative importance index of i) the factors influencing in selecting the criteria of contractor; and ii) the most important criteria of contractor that to be chosen by client. The formula is as following:

$$RII = \frac{\sum PiUi}{N(n)}$$

RII = Relative Importance Indices

Pi = Respondents' rating

Ui = Number of respondents placing an identical weighting/rating

N = Sample size

n = The highest attainable score

The RII score will be at the range of 0-1, which score nearer to 1 is the most relative factor.

### 3.6 RESEARCH FRAMEWORK

Figure 3.3 was the research framework for this study. The framework mentioned the types of instrument used for all the three objectives. The first objective of this study was to study the current method of selection the contractor. The second objective of this study was to identify of factors influencing in selecting the criteria of contractor by client while the third objective was to identify the most important criteria of contractor chosen by client. Thus, there were two types of instruments used in this study which were semi-structured interview and questionnaire.

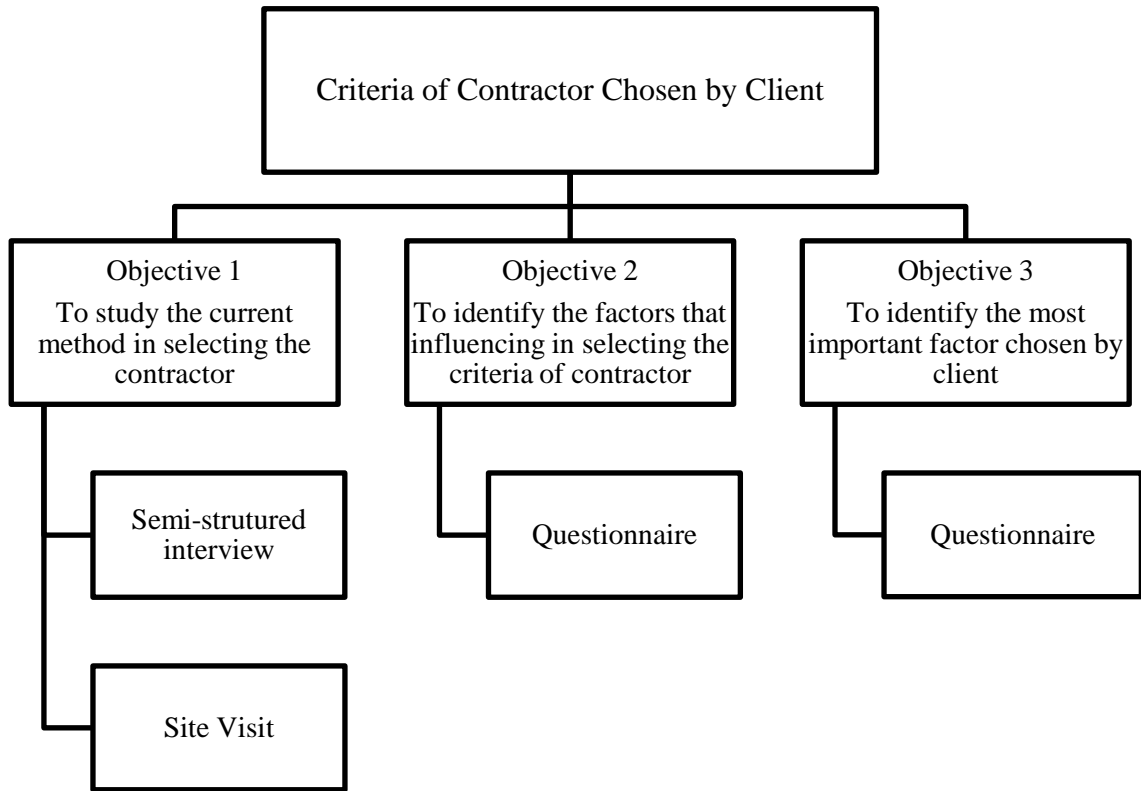


Figure 3.3 Research Framework

## **CHAPTER 4**

### **RESULTS AND DISCUSSION**

#### **4.1 INTRODUCTION**

In this chapter. Research findings and the result of the statistical analysis conducted on the data obtained will be discussed in details. The data analysis is based on the questionnaire survey. Questionnaires were gained by two ways which are from direct interviews and through email to several developer's company, contractor's company and also clients.

#### **4.2 CURRENT METHOD IN SELECTING THE CONTRACTOR**

To achieve the first objective of this study which was to study the current method in selecting the contractor, an interview session was conducted with staffs from developer's company for project under Mahkota Valley, Indera Mahkota, Kuantan. Based on the interview, the current method of selecting the contractor had been determined that were strong track record of the contractor and suggestion by previous client. Usually, client also looked at the previous successful project of the contractor as one of their reason to choose that contractor.

#### **4.3 QUESTIONNAIRE ANALYSIS**

The questionnaire was divided into two section which were Section A and Section B. For Section A, there were three questions about the background information of the respondents. The question included the position of the respondent in the company, the gender and how many year their experience in construction industry. While for Section B, the questions were based on the factors that have been point out from literature review.

A hundred questionnaires were distributed to various construction companies to targeted respondents via email and structured interview was conducted during site visit. The respondents for this study were clients, developers and contractors. Since a total of hundred questionnaires were distributed, only 57 respondents return the questionnaires.

Table 4.1 Respondent's Rate

Questionnaire Distributed	Response Return	Percentage of Responses (%)
100	57	57

#### 4.4 STRUCTURE INTERVIEW

Structured interview was conducted during site visit. There were a few questions being asked during the interview session, based on the current method in selecting the contractor in construction industry. Through the interviews, most of the answers on how the contractor to be chosen were same. Developers were being the respondents for the interview session and the information got as following:

1. Clients usually choose the contractor based on their previous achievement.
2. Clients choose the contractor by suggestion of other client.
3. Clients also looking for the contractor that have strong track record.





Figure 4.1 Interview Session at Mahkota Valley, Kuantan.



Figure 4.2 Person in charge while conducting the site visit.

## 4.5 RESPONDENT'S INFORMATION

For respondent's information, three questions had been stated in the questionnaire as the details of the respondents which were the gender, the position of the respondent in the company and how many year of experience of the respondent in construction industry.

### 4.5.1 Gender

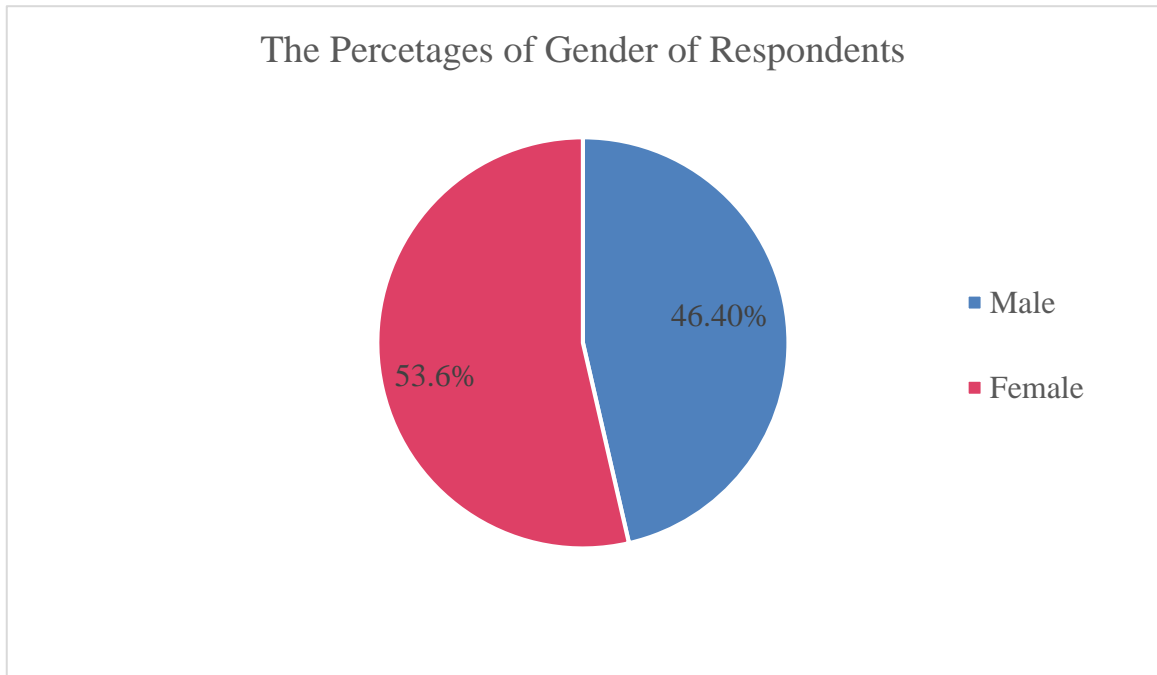


Figure 4.3 Pie Chart Represented the Percentages of Respondent's Gender.

Figure 4.3 showed the percentage of respondent's gender. From the total of 57 questionnaire return, 26 (46.6%) of the respondents were male while the rest were female, 30 (53.6%) respondents. Since the number of respondents for both gender were almost the same, it shown that both genders has conquered in construction industry.

#### 4.5.2 Position in Company

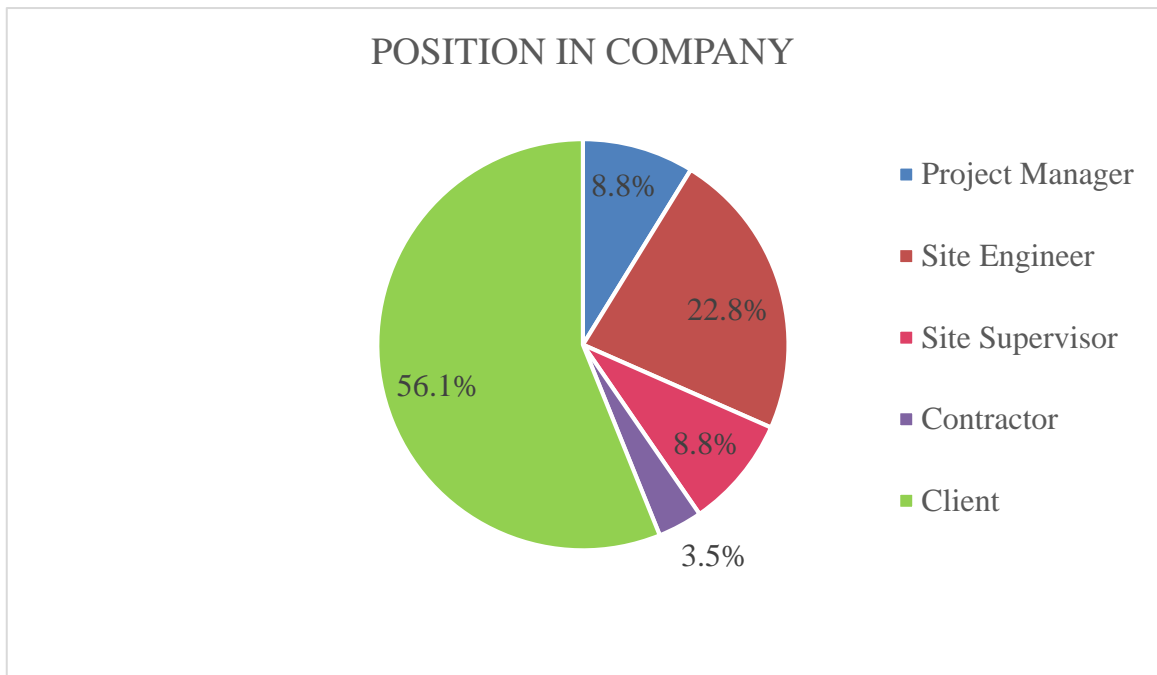


Figure 4.4 Position of the Respondents in the Company

Figure 4.4 showed the percentage of the respondent's position in construction industry. It shown that 5 responses (8.8%) from project manager, 13 responses (22.8%) from site engineer, 5 responses (8.8%) from site supervisor, 2 responses (3.5%) from contractor and 32 responses (56.1%) from clients.

### 4.5.3 Respondent's Experience

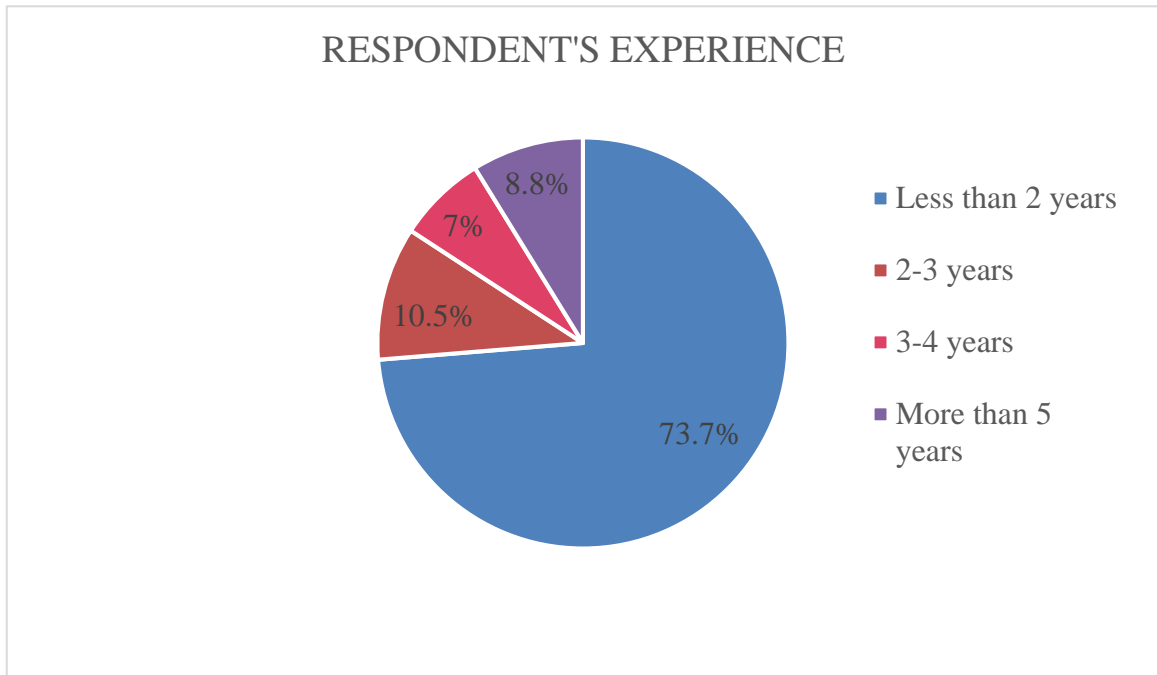


Figure 4.5 Respondent's Experience in Construction Industry.

Figure 4.5 illustrated the percentage of experience of respondents in construction industry. All of the respondents have different years in working experience. Respondents that had less than 2 years experiences in working place were 73.7%. Next, for 2 to 3 years of experience, 10.5% of the respondents. For 3 to 4 years, 7% of respondents had experience in this range of year. While for respondents that had more than 5 years experiences in construction industry were 8.8%.

#### **4.6 ANALYSIS OF 3 MAIN FACTORS INFLUENCING IN SELECTING THE CONTRACTOR.**

This section was discussed on the main factors in selecting the criteria of contractor. This study used RII method to determine the relative importance of the various factors occurred. It was computed for each of the factor to identify the most significant factors. The value for RII must in range from 0 to 1 and the factors that scored the highest RII value are the most important factor.

##### **4.6.1 RII Rank for Overall 3 Main Factors**

Table 4.2 shows the relative importance indices and the rank for main factors that affecting while selecting the contractor. Based on the table below, the first ranking was in term of the (1) management of the company (RII = 0.7691) itself, followed by (2) experience of the contractor (RII = 0.7688) and (3) financial of the contractor (RII = 0.7623). Since the management being the first ranking, it shows that client looking for contractor that could manage the construction project in effective manner and lowest risk to complete the project.

Table 4.2 RII Rank for 3 Main Factors

Main Factor	RII	Rank
Experience	0.7688	2
Financial	0.7623	3
Management	0.7691	1

#### 4.6.2 Selection of Contractor Influenced by Experience

Table 4.3 shows a relative importance indices and the rank for factor of experience in selecting the contractor. Under experience's factor, the first ranking was strong track record. It proved that it is important while selecting the contractor, the contractor that have positive review from other client will have opportunity to get another project. Usually, the contractor that have experience in big project, they can handle any project and will complete the project on time as request by the client. It requires knowledge and experience from the project manager in order to use the appropriate criteria to insure the selection of the most suitable contractor technically and financially for the project [10]

Table 4.3 Experience Factor in Selecting the Contractor

NO	Description	RII	Rank
1	Competency of contractor to deliver the project	0.7825	4
2	Employment of experience worker	0.7544	7
3	Have excellent reputation	0.7754	6
4	Familiar with an advanced project	0.7789	5
5	Project completed on time	0.8000	2
6	Strong track record	0.8316	1
7	Even the project is delay but it is still in the extension of time (EOT) given	0.7368	8
8	No record of withdraw	0.7263	9
9	Effective planning of schedule	0.7895	3

### 4.6.3 Selection of Contractor Influenced by Financial

Table 4.4 shows a relative importance indices and the rank for factor of financial of contractor in selecting the contractor. From the table, the first ranking was good financial planning. To avoid the contractor to face financial problem during the project, contractor himself need to plan their financial in and out. It will affect the project if the contractor did not have any financial backup in the bank.

Table 4.4 Financial Factor in Selecting the Contractor

No.	Description	RII	Rank
1	Strong financial	0.7895	2
2	Good financial planning	0.8070	1
3	Positive cash flow	0.7754	3
4	No payment arrears on suppliers	0.7614	5
5	No record of overdue payment	0.7614	5
6	Have credit loans from banks	0.6702	6
7	No delay payment to subcontractor	0.7719	4
8	Have financial back up under company name	0.7614	5

#### 4.6.4 Selection of Contractor Influenced by Management

Table 4.5 shows a relative importance indices and the rank for factor of financial of contractor in selecting the contractor. For management factor, having good communication with client is in the first ranking. Since the contractor and client will meet very often, they need to have good relationship. Moreover, it will make the client to feel comfortable to ask anything about the project. It also to avoid any misunderstanding occur between the contractor and client about the project requirement.

Table 4.5 Management Factor in Selecting the Contractor

No.	Description	RII	Rank
1	Good in managing the company	0.7965	5
2	Contractor know how to handle the risks faced	0.8035	3
3	Contractor is the member of CIDB	0.7930	6
4	Supervise and coordinate the work of employees and subs	0.7965	5
5	Handle project even in worst weather	0.7754	7
6	Each workers has work cover insurance	0.8000	4
7	Contractor concerned the safety of workers	0.8140	2
8	Have good communication with clients	0.8316	1
9	Can handle complex project	0.7965	5
10	No record of terminate	0.8000	4



## **CHAPTER 5**

### **CONCLUSION**

#### **5.1 INTRODUCTION**

Set of questionnaires survey had been studied and analyzed. This chapter presents the summary of the research work, the conclusion and the recommendation based on the study. The purpose of this study was to determine the factors influencing in selecting the criteria of contractor. To ensure the success of this study, it becomes necessary to accomplish the goal of the study. Based on the literature review, site visit, structured interview, distributed questionnaires, data analysis and findings, the three objectives of this study were achieved as parallel to the research topic. The recommendations for further study and the research end the chapter.

## 5.2 SUMMARY OF RESEARCH

This study have achieved the first objective by gaining the result by doing site visit at construction site. An interview session between researcher and respondents was conducted by two ways communication face to face. And the result showed that clients choose the contractor by their strong track record, whether the contractor succeed or failed during previous project. It gives a big influence for the contractor to complete next project. During the interview, the respondents gave a few method in selecting the contractor for construction project such chosen by strong track record, the previous achievement of the contractor and suggestion of other client.

On the other hand, for second and third objective, which were to identify the factor that influencing in selecting the contractor and the most important factor chosen by client had been analyzed from the questionnaires survey. From the data analysis, the first ranking from overall factor was strong track record while for the 3 main factors, the first ranking was in term of management.

Table 5.1 RII Rank for 5 Main Factors

Main Factor	RII	Rank
Experience	0.7688	2
Financial	0.7623	3
Management	0.7691	1

### 5.3 SUB-FACTOR FOR EACH OF THE 3 MAIN FACTORS

No.	Description
1	Competency of contractor to deliver the project
2	Employment of experience worker
3	Have excellent reputation
4	Familiar with an advanced project
5	Project completed on time
6	Strong track record
7	Even the project is delay but it is still in the extension of time (EOT) given
8	No record of withdraw
9	Effective planning of schedule

Table 5.2 Experience Factor in Selecting the Contractor

No.	Description
1	Strong financial
2	Good financial planning
3	Positive cash flow
4	No payment arrears on suppliers
5	No record of overdue payment
6	Have credit loans from banks
7	No delay payment to subcontractor
8	Have financial back up under company name

Table 5.3 Financial Factor in Selecting the Contractor

No.	Description
1	Good in managing the company
2	Contractor know how to handle the risks faced
3	Contractor is the member of CIDB
4	Supervise and coordinate the work of employees and subs
5	Handle project even in worst weather
6	Each workers has work cover insurance
7	Contractor concerned the safety of workers
8	Have good communication with clients
9	Can handle complex project
10	No record of terminate

Table 5.4 Management Factor in Selecting the Contractor

## **5.4 RECOMMENDATION**

Based on the finding and conclusion, the following recommendations were suggested:

- 1) Clients or developers should have the list of contractor that have good previous achievement to help them choose a contractor for any construction project.
- 2) Clients should provide enough requirement and specification of the project so that the contractor will follow accurately.
- 3) Clients should check the criteria of the contractor before choose them as the contractor for the project so that it will reduce the risk that they will face later.
- 4) Contractors must make a deep research what's criteria of contractor that client choose to award them to avoid the contractor failed during tendering process.
- 5) Contractor should better understand the requirement of the project so that contractor know what is needed to put in the tender.

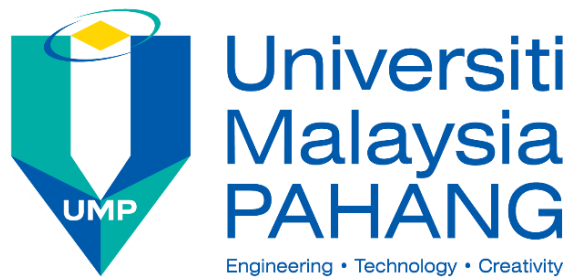
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**APPENDIX A**  
**SAMPLE OF QUESTIONNAIRE**



***FINAL YEAR PROJECT***

***PROJECT TITLE:***

***THE CRITERIA OF CONTRACTOR CHOSEN BY CLIENT.***

**OBJECTIVES OF STUDY:**

- To study the current method in selecting the contractor.
- To identify the factors influenced in selecting the criteria of contractor.
- To identify the most important factor that will be chosen by client.

**SECTION A: Respondent's Information**

*(Bahagian A: Latar Belakang Responden)*

**Instruction. (Arahan)**

**Please fill in the blank. (Sila isi tempat kosong)**

## RESPONDENT'S INFORMATION

*(Latar Belakang Responden)*

1. Position in Company: \_\_\_\_\_

*(Jawatan Dalam Syarikat)*

2. Gender:  L  P

*(Jantina)*

3. Experience in construction industry. *(Pengalaman dalam industri pembinaan)*

Less than 2 years  
*(Kurang dari 2 tahun)*

3 to 4 years  
*(3 hingga 4 tahun)*

2 to 3 years  
*(2 hingga 3 tahun)*

More than 5 years  
*(Lebih dari 5 tahun)*

SECTION B: Questionnaire Based on 3 Main Factors

*(Bahagian B: Soalan Berdasarkan 3 Faktor Utama)*

Please tick ( / ) your answer according to this scale.

(Sila tanda ( / ) jawapan anda berdasarkan skala dibawah.

1 = Strongly Disagree (Amat Tidak Bersetuju)

4 = Agree (Bersetuju)

2 = Disagree (Tidak Bersetuju)

5 = Strongly Agree (Amat Bersetuju)

3 = Either Agree or Disagree (Sama ada Setuju atau Tidak Bersetuju)

OBJECTIVE 2: TO IDENTIFY THE FACTORS THAT INFLUENCED IN  
SELECTING THE CRITERIA OF CONTRACTOR.

**Factor 1 is to identify the factor that influenced the selection of contractor in term of experience of the contractor**

NO	FACTOR 1 : EXPERIENCE <i>(Faktor 1 : Pengalaman)</i>	1	2	3	4	5
1	Competency of contractor to deliver the project <i>(kontraktor yang berkebolehan)</i>					
2	Employment of experience workers <i>(pengambilan pekerja yang berpengalaman)</i>					
3	Have excellent reputation <i>(mempunyai reputasi yang bagus)</i>					
4	Familiar with an advanced project <i>(sudah terbiasa dengan projek yang maju)</i>					
5	Project completed on time <i>(projek disiapkan mengikut jadual)</i>					
6	Strong track record <i>(rekod prestasi yang kukuh)</i>					

7	<p>Even the project is delay but it is still in the extension of time (EOT) given</p> <p><i>(walaupun projek tertangguh, tetapi ia masih dalam lanjutan masa yang diberikan)</i></p>					
8	<p>No record of withdraw</p> <p><i>(tiada rekod menarik diri)</i></p>					
9	<p>Effective planning of schedule</p> <p><i>(jadual perancangan yang berkesan)</i></p>					

**Factor 2 is to identify the factor that influenced the selection of contractor in term of financial of the contractor.**

NO	FACTOR 2 : FINANCIAL (Faktor 2 : Kewangan)	1	2	3	4	5
1	Strong financial (kewangan yang kukuht)					
2	Good financial planning (perancangan kewangan yang baik)					
3	Cash flow of the company is positive (aliran tunai syarikat adalah positif)					
4	No payment arrears on suppliers (tiada tunggakan pembayaran pada pembekal)					
5	No record of overdue payment (tiada rekod terlewat pembayaran)					
6	Have credit loans from banks (mempunyai kredit pinjaman yang mudah daripada bank)					
7	Payment to subcontractor is not delayed (pembayaran pada subkontraktor tidak ditangguh)					
8	Have financial back up under company name (mempunyai sandaran kewangan dibawah nama syarikat)					

**Factor 3 is to identify the factor that influenced the selection of contractor in term of management of the contractor.**

NO	FACTOR 3 : MANAGEMENT OF COMPANY <i>(Faktor 3: pengurusan syarikat)</i>	1	2	3	4	5
1	Good in managing the company <i>(bagus dalam menguruskan syarikat)</i>					
2	Contractor know how to handle the risks/problem faced <i>(kontraktor tahu menangani masalah yang dihadapi)</i>					
3	Contractor is member of professional bodies such as CIDB <i>(kontraktor adalah ahli badan professional seperti CIDB)</i>					
4	Supervising and coordinating the work of employees and subs <i>(menyelia dan menyelaraskan kerja-kerja pekerja)</i>					
5	Can handle a project even though worst weather <i>(boleh mengendalikan projek walaupun cuaca teruk)</i>					
6	Have Work Cover insurance for each of the workers <i>(setiap pekerja ada 'WorkCover' insurans)</i>					
7	Contractor concerned about the safety of the workers <i>(kontraktor mementingkan keselamatan pekerja)</i>					
8	Have good communication with clients <i>(mempunyai komunikasi yang baik dengan klien)</i>					
9	Can handle complex project <i>(boleh mengendalikan projek kompleks)</i>					
10	No record of terminate <i>(tiada rekod ditamatkan)</i>					

Other factors, please specify (*Lain-lain faktor, sila nyatakan*)

.....  
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.....  
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**---THE END---**

**APPENDIX B**  
**CD**



