A CASE STUDY OF ABANDONED HOUSING PROJECTS IN SELANGOR

MUHAMMAD FAIZAL BIN ABDUL RAHMAN

B. ENG (HONS.) CIVIL ENGINEERING

UNIVERSITI MALAYSIA PAHANG

UNIVERSITI MALAYSIA PAHANG

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A CASE STUDY OF ABANDONED HOUSING PROJECTS IN SELANGOR

MUHAMMAD FAIZAL BIN ABDUL RAHMAN

A thesis submitted in fulfilment of the requirement for award of the degree of

B. ENG (HONS.) CIVIL ENGINEERING

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This hard work is dedicated to my mother, Fatimah binti Asmuni and my father, Abdul Rahman bin Johari who love me and support me during my whole journey of education.

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ABSTRACT

Housing industry is one of the most dynamic, risky, and challenging industries. In Selangor, this industry has a poor reputation for managing risks, with many major projects failing to be completed within the allotted time. Due to the inherent risks involved in construction projects, it is essential to recognize the risks that cause problems associated with abandoned housing projects. Therefore, this study aims to identify the risks that contribute to issues of abandoned housing projects and to propose suitable solution to overcome this. The questionnaire had been distributed to the respondent with the background of civil engineering. The average index method was used to analyse the data. The results show that many risks are involved in housing project, including risks related to environmental impacts, construction, politics, law, management and finance. The respondent agreed that the abandoned housing project is causes by this main factors. It was also found that all relevant parties involved in housing industry are required to have extensive cooperation in advance and should perform systematic risk management strategies in order to mitigate the risks leading to problems associated with abandoned housing projects.

ABSTRAK

Industri perumahan merupakan salah satu industri yang dinamik, berisiko dan mencabar. Di Selangor, industri ini mempunyai reputasi buruk untuk menguruskan risiko, dengan banyak projek utama yang tidak dapat diselesaikan dalam masa yang ditetapkan. Oleh kerana banyak risiko yang terlibat dalam projek pembinaan ini, adalah penting untuk mengenal pasti risiko yang menyebabkan masalah berkaitan dengan projek perumahan terbengkalai. Oleh itu, kajian ini bertujuan untuk mengenal pasti risiko yang menjadi penyumbang kepada isu-isu projek perumahan terbengkalai dan mencadangkan penyelesaian yang sesuai untuk mengatasinya. Soal selidik telah diedarkan kepada responden yang latar belakang kejuruteraan awam. Kaedah indeks purata digunakan untuk menganalisis data. Keputusan menunjukkan bahawa banyak risiko terlibat dalam projek perumahan, termasuk risiko yang berkaitan dengan kesan alam sekitar, pembinaan, politik, undang-undang, pengurusan dan kewangan. Responden bersetuju bahawa projek perumahan terbengkalai disebabkan oleh factor-faktor utama ini. Oleh itu, semua pihak yang terlibat dalam industri perumahan hendaklah mempunyai kerjasama yang lebih luas terlebih dahulu dan perlu melaksanakan strategi pengurusan risiko yang sistematik untuk mengurangkan risiko yang akan membawa kepada masalah yang berkaitan dengan projek perumahan terbengkalai.

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CHAPTER 1

INTRODUCTION

1.1 BACKGROUND OF STUDY

Housing projects are generally defined as abandoned projects when construction projects are not completed and ready to be colonized on a schedule. Abandoned housing projects can bring both socio-economic and environmental impact. Those socio-economic impacts include job loss, area loss, population separation, and cost transfer between the private and public sectors, and the nature of the environment including visual effects, landscaping, erosion, loss of biodiversity, and pollution. Risk in housing construction projects is sometimes inevitable and therefore, the responsibility of parties involved in the construction industry such as consultants, owners, and contractors. Then we need to identify the risks as early as possible to minimize and reduces potential losses. However, a common reason for that is due to unforeseen factors resulting from the initial forecasting of project costs by housing project developers during the planning stage. Previous studies have shown that mismanagement, unprofitable government policies, inefficient public delivery systems, unfavorable economic conditions, and financial problems are the main causes of abandoned housing projects.

In Malaysia, the construction industry has been criticized for delays in its project, increased cost, low productivity, unsafe site conditions, and poor quality. It also emphasizes that internal management problems create a negative impact resulting in abandoned housing projects, and therefore effective risk management is needed in implementing any construction activities to monitor risks and develop strategies to mitigate

those effects. The construction sector, in Malaysia, has struggled with financial problems that led to many problems related to abandoned housing projects. The housing industry is one of the most dynamic, risky and challenging businesses that contributes to domestic wealth. More importantly, the housing industry is a major contributor to the Malaysian economy and, ultimately, it has multiplier effects on other industries that support the housing industry.

The construction industry in Malaysia have struck long enough on a scale that requires considerable attention. It has been reported that between 1990 and 2005 the state of Selangor in particular has a total number of abandoned projects of which 63 projects involve 32,987 houses affected by 22,480 buyers. Although the number is gradually declining, it is reported that in 2010 there are still more than 45,339 unit of abandoned houses requiring RM3 to RM5 billion for projects to be completed. Therefore, this study aims to identify causes associated with abandoned housing projects and to recommend the best solution to this. While the Malaysian government has intervened in an effort to address the problems associated with abandoned housing projects through rehabilitation programs for potentially revitalized projects, as well as some regulatory measures to prevent future abandoned housing projects, issues related to housing projects abandoned still cannot be solved. Therefore, this study aims to identify causes associated with abandoned housing projects and to recommend the best solution to this matter.

1.2 PROBLEM STATEMENT

The cause and effects of abandonment of housing project has been a subject of concern for experts in real estate. Therefore, the study purpose is to investigate the causes and factors that contribute to the abandoned project and to determine the statistical data of abandoned housing project in Selangor. The cogent of this study is to know how many abandoned building in the Selangor area that have been recorded until now. But, by exploring this context should help establish and recognize the causes and effects of abandonments of building by citizens, government, policy/decision makers, educationalist

and practitioners. This, through eradication of these causes should expect to eliminate these identified effects and sustain real properties and its values in the economy.

1.3 OBJECTIVE OF STUDY

There are three (3) objectives that need to be fulfilled in this research. The objectives are;

i. To determine the statistic data of abandoned housing project in Selangor.
ii. To investigate the factors contributes to the abandonment project in Selangor.
iii. To propose the solution to issues of abandoned housing project in Selangor.

1.4 SCOPE OF STUDY

The scopes of study are as follow. The location of study is at all regions in Selangor. The data are obtained from questionnaire that distributed to the people involved in the abandoned project in Selangor.

1.5 SIGNIFICANCE OF STUDY

The result of this study will educate the general public on the causes and effect of abandonment of housing project in Selangor with a view of reducing the issues of abandoned housing project in Selangor.

In addition, the outcome of this study will guide the government and policy makers on ways to make and implement policies that will reduce the rate of abandonment housing project in Selangor.

This research will also serve as a resource base to other scholars and researchers interested in carrying out further research in this field subsequently, if applied will go to an extend to provide new explanation to the topic.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION

The population of people in Selangor increase year by year which make the development grown faster. The increasing number of population led to the increasing number of abandoned housing project.

2.2 MISS MANAGEMENT

Mismanagement is mentioned by the Ministry of Housing and Local Government (MHLG) (Kaur 2011) one of the main reason causes of abandoned project. Mismanagement will happen because of lack of experience of developer (Ibrahim 2006). The example of mismanagement may contribute to the abandoned project include 1) lack of proper feasibility studies (Ibrahim 2006) particularly inaccurate market research (Khalid 2010), 2) unattractive marketing strategies (Ibrahim 2016) ,3) Conflict between project participant (Dahlan 2010) and 5) poor financial by the developer with lack of experience (Ibrahim 2006).

The first two of these example are particularly concerned with the sales of house unit project and it is important because it the sources of cash flow for housing developer. The lack of proper feasibility studies and inaccurate market research may lead to result in inaccurate forecast of demand and supply certain types of properties as well as unsuitable project schedule to be undertaken for the prevailing market (Kaur 2011). Unattractive

marketing strategies may further exacerbate a less attractive scheme of project already taken by the developer. (Khalid 2010) mentioned that the developer will face the problem in obtaining bridging loans from financial institution to continue with the project if the sale percentage is below than 80%.One more example of the lack of proper feasibility is when the developer was issued to stop the work order by the authorities for failing to strengthen a slope near the construction site (Ali 2011). The developer did not include the strengthening of the slope in feasibility studies therefore the houses sold did not include the extra cost. The vialibility of the project was affected, the projects need to be abandoned and developer had to refund the house buyers which is their client. Another aspect of the lack of proper feasibility studies is the failure to recognize the problem by the presence of illegal squatters in the project site such as the difficulty and cost calculated incurred in removing them may lead to abandonment of project (Dahlan 2010)

An example of fraud is non-payment or arbitrarily reduced payment of progress billing which can contribute in cash flow money problem of contractors, subcontractors and supplier and also late delivery and abandonment of project (Home Guru 2011). Fraud may also be due to extravagant dissipation of purchaser' fund that can contributes to the abandonment project (Dahlan 2010).Furthermore example of fraud is the involvement of developer in fraudulent claims (Khalid 2010; Cheong 2011). Developer contradictory with their architects so in that case architects issue progress claim certificate that falsely reflect higher level in the progress of construction, then developer siphon the money out of the project (Cheong 2012).

2.3 UNFAVOURABLE GOVERNMENT POLICIES

Causes of abandoned housing project related to unfavourable government policies include 1) the sell then build system (Chang 2009), 2) the limitation of the jurisdiction of the Tribunal for Homebuyer Claims (Ibrahim 2006), and 3) the requirement for private developer to build 30% of low cost houses (Khalid 2010).

2.3.1 Sell then Build System

Former Prime Minister Abdullah Ahmad Badawi (HBA 2006) and the President Of Federated Association of Consumer Malaysia (FOMCA) (as cited in Khalid 2010) stated the sell-then-build system is intended to enable more houses to be built at a faster rate and a lower price (Chen 2007).As the name implies, houses can be sold before the houses are being built, therefore there is more cash flow from the start of the construction phase and less requirement for developer's own capital. This has enabled more developers of smaller capital to be involved in the business (Alagesh 2013). According to (Chang 2009), however, having smaller developers in the housing industry is the main cause of abandonment of housing project. Being small, these developers have to rely critically on their sales to meet their cash flow. When the sales are not up to expectation, the cash flow might be affected. Consequently, the projects may be delayed and eventually some might become abandoned. The sell-then-build system is also less risky than a build-then-sell system from bankers' point of view. This might have resulted in banks not exercising a duty of care by often relying on architects employed by the developer to sign off progress certificates, knowing that they can still collect repayment from one house buyers even if a project is abandoned (Heng 2011). This might encourage over claiming of fund by the developer, either resulting in mismanagement of fund or fraud and eventually abandonment of project.

2.3.2 Limitation of the Tribunal for Homebuyer Claims

The Tribunal for Homebuyer Claims is a channel for aggrieved homeowner to seek redress against developers without having to go through a lengthy legal process in Malaysia (Chen 2007). Ibrahim (2006) found that the limitation of the jurisdiction of the Tribunal for Homebuyer Claims is one of the causes of abandoned housing projects, but contrary to Ibrahim's (2006) finding, Chen (2007) claimed that the Tribunal for Homebuyer Claims has proven to be very effective. It is however believed that the developers being sued are often insolvent and getting compensation is highly unlikely.

2.3.3 Requirement to Build 30% of Low Cost Houses

The government's requirements for private housing developer to build 30% of low cost houses contribute to the abandonment of some housing projects. The reason given is that the developers will abandon the low cost project if the number of purchaser is low, rather than complete the housing projects and struggle to find purchasers. The low number of purchaser may partly be due to the fact that low cost houses can be only be sold to the lower income groups, and that the location of the projects (Khalid 2010).

2.4 INEFFICIENT PUBLIC DELIVERY SYSTEM

Delivery system is "a means or procedure for providing a product or service to the public" (Anon 2003), usually by the government. (Chen 2007) argues that it is the inefficient public delivery system rather than unfavourable government policies that causes the abandoned project problem. A number of sources have mentioned the lack of enforcement of control and monitoring by the government as a cause of abandoned housing project (Khalid 2010). Ibrahim (2006) states, among others, that there should be stricter licensing for developers, better system to detect abandonment of project, harsher punishment for errant developers, and less bureaucracy in the approval process of housing plans.

In October 2010, the Minister of Housing and Local Government said that many developers have been blacklisted by the ministry, and the ministry would tighten condition on developer's license to avoid the problem of abandoned projects (The Star Online 2010). Corresponding to this, HBA has proposed to change the deposit to get a housing developer's license from RM 200 thousand to 5% of construction costs (Heng 2011). However, it is unclear whether blacklisting by the ministry alone is able to prevent rogue developers who had become insolvent to use the identity of other to register another company to start another new development. Developers may also use a proxy to protect themselves from being liable in case of abandonment of project (Heng 2011). As of 2010,

the Minister of Housing and Local Government reported a remarkable improvement in planning and building plans approval (Phoon 2010). But, whether or not this will lead to less abandonment of housing projects is left to be seen.

2.5 UNFAVOURABLE ECONOMIC CONDITIONS

There is a consensus that economic crisis or financial crisis is one of the causes of abandoned construction projects (Fernandez 2009). Other unfavourable economic conditions that may lead to the problem include 1) the rise of the prices of raw material such as steel and cement in 2008 (Cheah 2008), 2) "selfish" financial system, i.e. one that "lends an umbrella on a fine day and takes it away when it rains" (Chen 2007), 3) higher interest charge that discourages potential home buyers to buy residential properties and reduces the profitability of a project (Ibrahim 2006), and 4) competition of new residential projects (Ibrahim 2006) that affects the sales and hence the cash flow of a project

2.6 FINANCIAL PROBLEMS

A number of sources cited financial problems as a cause of abandoned construction projects (Ibrahim 2006). However, it is felt that financial problem is the effect of other aforementioned causes prior to being abandoned. For instance, increases in project costs (Teoh & Lim n.d.) may be due to mismanagement or unfavourable economic conditions; and, the lack of proper feasibility study to determine the right type of development and unattractive marketing strategy ultimately affect the sales and hence lead to the financial problem.

2.6.1 Financial Difficulties Faced by The Owner and Contractor

Financial difficulties faced by the contractor (Frimpong et al. 2003), financial difficulties faced by the owner (Sweis et al. 2008), and delays in interim payments (Dissanayaka & Kumaraswamy 1999) are all interrelated. Financial difficulties faced by the contractor might be due to delay of payments by the owner (Sweis et al. 2008; Toor &

Ogunlana 2008). Like the domino effect, it might result in delay in contractor‟s payments to subcontractors (Frimpong et al. 2003). Delay in interim payments might also be due to inappropriate payment modality, i.e. pricing mechanisms (e.g. whether "lump sum fixed price" or "remeasure") and the timing of payments for completed work (Dissanayaka & Kumaraswamy 1999). When a contractor abandons due to delay in payment, it may incur additional time and cost, and lead to abandonment of project.

2.7 EXTERNAL FACTORS

External factors are factors out of the control of project participants, such as the unexpected location difficulty, adverse weather or acts of god, negative impact of project towards society or environment, unexpected bad economic conditions, lack of cooperation from local authorities, and unfavourable government policy.

2.7.1 Unexpected Location Difficulty and Adverse Weather or Acts of God

Unexpected location difficulty includes unexpected ground conditions obstruction due to underground utilities (Dissanayaka & Kumaraswamy 1999), and adverse weather or acts of god (Toor & Ogunlana 2008). Bad weather and unforeseen ground condition are among factors that cause schedule delay (Zhi 1995). For example, limestone areas are characterized by some of the most difficult ground conditions in Malaysia, namely weak soils overlying limestone bedrock with karstic features such as pinnacles, solution channels, cavities and overhangs, posing difficulties both during design and construction of foundations (Chan & Hong 1986).

2.7.2 Negative Impact of Project Towards Society or Environment

Negative impact of project towards society or environment includes site pollution and noise (Toor & Ogunlana 2008) that negatively impact water resources, forest, wildlife and nearby residents. As in a case in Thailand this resulted in conflicts and non-cooperation with local residents and the need to pay compensation (Awakul & Ogunlana 2002). These

could be linked back to inadequate project feasibility studies such as the environmental impact assessment (EIA), and public consultation sessions (Awakul & Ogunlana 2002).

2.7.3 Lack of Cooperation from Local Authorities and Unfavourable Government Policy

Other factors include lack of cooperation from local authorities (Toor & Ogunlana 2008), and unfavourable government policy (Elinwa & Joshua 2001) such as difficulties in obtaining work permits (Sweis et al. 2008). The lack of cooperation from local authorities and unfavourable government policy could be linked with the political environment. The most distressing political risks are war, revolution, civil disorder, and inconsistency of government policies (Zhi 1995). In another example, a news article (NST Online 2008) shows contradicting statements of government officials from different political parties on the delay of the Second Penang Bridge, which seems to imply that the delay was partly due to political reasons.

2.8 PROJECT PARTICIPANTS RELATED FACTORS

Project participants related factors are mainly concerning clients/owners, consultants, contractors, subcontractors, site workers, and suppliers. These include unavailability of materials and equipment, financial difficulties faced by the owner and contractor, problems related to change orders / variation orders, and poor relationship among project team members.

2.8.1 Clients/Owners

Clients of construction projects may consist of private and public clients, and they are usually the initiators and paymasters of the construction projects. As initiators, they are usually responsible for initial design requirements. Factors that are related to providing initial design requirements are clients‟ experience, emphasis on high quality of construction, emphasis on quick construction, ability to brief and ability to make decision.

Besides, due to the competitiveness of subcontracting, clients‟ emphasis on low construction cost (Chan 2004) could drive contractors and subcontractors into offering unrealistically low price, then cutting corners and offering bribes to recover their losses (Chiang 2008). Therefore, clients may influence the success of projects, and may lead to the abandonment of projects.

2.8.2 Consultant

Consultants in a construction project typically consist of architects, civil and structural (C&S) engineers, and mechanical and electrical (M&E) engineers. Incomplete or poor detail design on the part of consultants can cause delay (Zhi 1995). Designers should also avoid out of sequence design process (due to design changes and incomplete or delayed information by the customer) which could lead to schedule delay, but this must be well-balanced with the trade-off of meeting customer requirements in the best possible manner (Koskela 1997). In order to minimize design-related risks, consultants may follow the risks identification and assessment system outlined by Chapman (2001) which is ‘knowledge acquisition’, ‘selection of the core design team’, ‘presentation of the process’, ‘identification’, ‘encoding’ and ‘verification’.

2.8.3 Contractors, Subcontractors, and Site Workers

Incompetent contractors or subcontractors are due to many reasons such as, 1) the lack of contractor‟s past experience (Toor & Ogunlana 2008), 2) the shortage of technical professionals in the contractor‟s organization (Frimpong 2003), and 3) the lack of competent administrative personnel in the contractor‟s organization (Dissanayaka & Kumaraswamy 1999). Incompetent contractors or subcontractors often use obsolete and poor construction techniques (Awakul & Ogunlana 2002). These incompetent contractors or subcontractors are also often seen handling work on more than one site (Elinwa & Joshua 2001), where the amount of work is beyond their capability.

Contractors can significantly improve the chances of overall project success by reducing team turnover, implementing constructability programs, and increasing the number of construction control meetings. Constructability programs can also enhance schedule performance (Jaselskis & Ashley 1991). Contractors can also achieve better budget performance by reducing team turnover, increasing the number of budget updates and having four to six control meetings per month (Jaselskis & Ashley 1991).

Shortage of site workers might result in severe overtime and shifts (Toor & Ogunlana 2008). Site workers include technical personnel and hard labour. Lack of motivation of site workers might be due to the lack of proper incentives to the site workers (Elinwa & Joshua 2001), and this might result in poor productivity and absenteeism problems (Toor & Ogunlana 2008).

As for relationship between contractor and labour (industrial relation) (Elinwa & Joshua 2001), unionized workers are generally better off. For example union workers tend to perceive better safety climate than non-union workers. However, union influence in this part of the world, especially Malaysia, is practically nil due to the inherent subcontracting culture as increased subcontracting is correlated with reduced union influence. The proliferation of subcontracting and contractors‟ exploitation of small craft-based subcontractors are believed to be partly, if not mostly, responsible for the fragmentation of the industry and the persistent problems of quality, productivity, non-payments and safety (Chiang 2008).

According to Lai (as cited in Chiang 2008), contractors divide the works into small packages because small contractors would 1) have their heads being the gangers actually working on site, 2) be obedient and cooperative, 3) offer lower prices and 4) be less claim conscious. The main contractor would then spend much of their time managing and coordinating their large pool of small contractors instead of doing the works themselves.

Arditi and Chotibhongs (2005) suggest that clients‟ project managers can mitigate the problems of non-payment to workers by asking contractors to list their subcontractors

in their own tender documents. Once their tender is accepted, the contractor cannot change their subcontractors without clients‟ approval, thus helping prevent the exploitation of subcontractors‟ weak bargaining position in a post award bid shopping. Project managers, from both the clients‟ and contractors‟ sides, can also ensure that payments are paid when they become due to the subcontractors.

Although site managers do not have direct authority over sub-contract operatives and do not dictate the rewards to sub-contractors, the attention they give to target setting, planning and co-ordination can create better prospects for sub-contract staff to achieve their goals (Fryer 2004).

2.9 POPULATION AND SAMPLE

Behind all statistical methods of data analysis the basic idea is to create inference about a population by studying the sample picked from the population. A population is a complete collection of measurements, outcomes, items or even persons beneath examine. Generally, population has two types that are tangible population and conceptual population. A sample is a subset of the population that is observed. The figure 2.1 shows the illustrated of the population and sample. It shows sample are come from the population. Population is the total number of certain thing. The sample is the value that will present the total number of population.

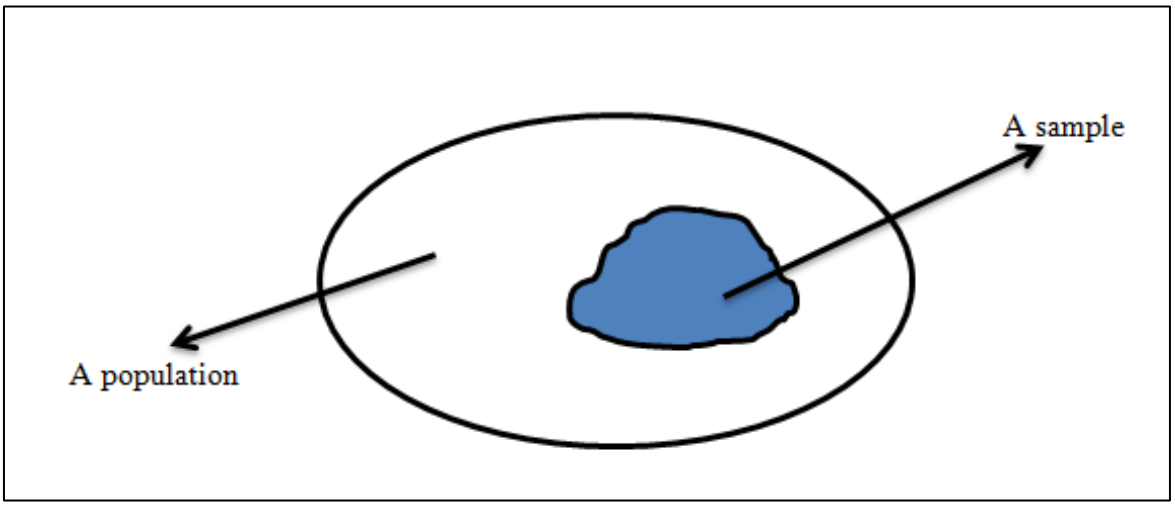

Figure 2.1: Illustrates of population and sample

2.9.1 Sample Size

Sample size is the amount of observation in a sample (Evans et al 2000). A sample size is always a positive number. It is normally denoted by capital 'n'. In any research study determination the sample size to be selected is an important step. In order to choose the sample size it can be depends on statistical considerations and non-statistical considerations. The statistical considerations would include the desired accurate on the appraisal regarding prevalence along with the anticipated prevalence regarding eye complications within school little ones. The non-statistical concerns might include availability of methods, manpower, funds, integrity and trying frame. To determine the proper sample sizes there are three requirements need to be specified. The requirements are;

i. The precision level
ii. The confidence level
iii. Degree of variability

2.9.2 The Precision Level

The precision level also known as sampling error. Sampling error are caused by the observing the sample rather than by seeing the whole population. Usually, a biased sampling procedure is the most frequent cause of sampling error. The ways to reduce the sampling error is by the use the proper and unbiased sampling and by using large number of sample size. Figure 2.2 shows the sampling error illustrations. It shows that when the same size of population but different number sample size it will affect the sampling error. The bigger the sample size the smaller the sampling error.

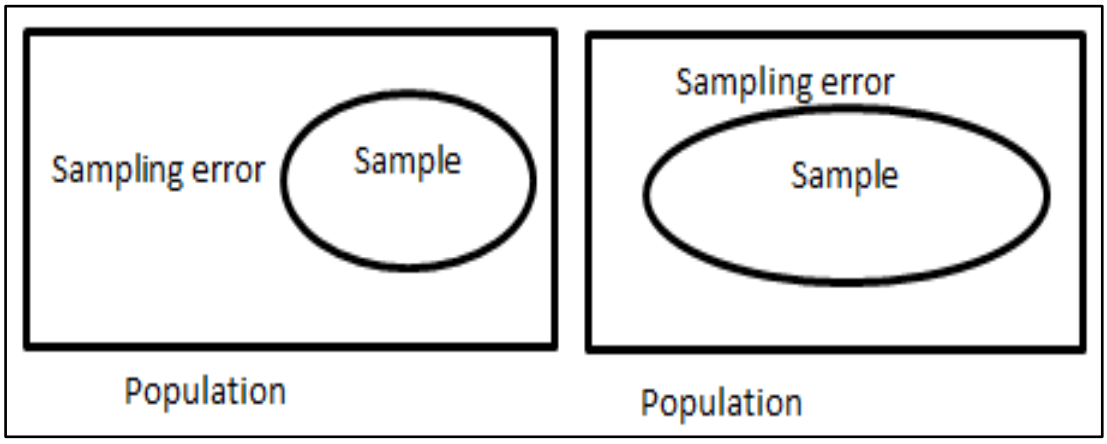

Figure 2.2 Sampling Error Illustrations

2.9.3 The Confidence Level

A confidence level refers to the percentage of feasible sample which can be expected to include the true population parameter. Confidence interval is the statistical measure of the amount of occasions outside of 100 which outcomes can be expected for being in a specified selection. In simple word it can be say that, a confidence interval of 95% the result of an action will probably meet expectations 95% of time.

2.9.4 Degree of Variability

The degree of variability varies considerably depending on the target population and attributes under consideration. The higher sample size is needed to get an optimum level of precision if the population is more heterogeneous. Variability is a dispersion or spread. There are four regularly used of variability which is the range, interquartile range, standard deviation and variance.

2.9.5 Type of Sample

In the statistical approach there are four types of sampling which is random sampling, systematic sampling, stratified sampling and cluster sampling.

i. The random sampling is each data is numbered and then the data is selected using chance or random method. Each data has an equal chance to be selected.
ii. Systematic sampling is each data is numbered and the first data selected randomly.
iii. In stratified sampling the population is divided into groups according to some characteristic that is important to the study, and then the sample is selected from each group using random or systematic sampling.
iv. In cluster sampling the population is divided into groups or clusters, and then some of those clusters are randomly selected and all members from those selected clusters are chosen. Cluster sampling can reduce cost and time.

CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

Generally, methodology is the precise, hypothetical examination of the strategies connected to a field of study, or the hypothetical investigation of the group of techniques and standards connected with a branch of information. It typically, incorporates ideas, for example, worldview, hypothetical model, stages and quantitative or subjective strategies (Ishak, 2005). In this chapter the point is to deliver an arrangement of arranging by stream keeping in mind the end goal to guarantee the study run easily.

3.2 RESEARCH FRAMEWORK

This study is taking place in six months period; however, to ensure the data collection smooth and properly done, a research framework has been created as shown in Figure 3.1. Firstly, the problem has been identified. Then, from problem identification data collection method will be defined. In this study, Selangor has been selected as the area of study. The data will be collected only in this area. After the problem has been identified

then the data collection will be obtained by using the questionnaire that will be distributed. Then, the data will be analyzed according to the objective of the study to ensure the study objective is consistent. Based on result of data analysis, discussion of each analysis will be made either it meets the objective of the study. Then, from the discussion, a conclusion can be made based on each objective. Lastly, the recommendation will be stated for the improvement.

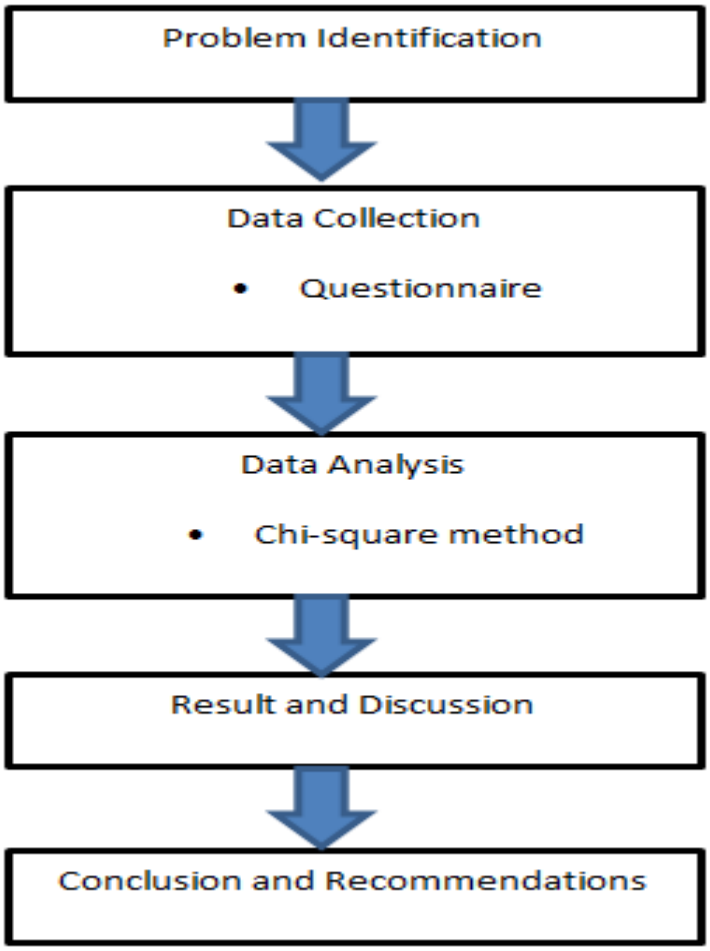

Figure 3.1: Data Collection Framework

3.2.1 Data Collection

For this survey the total number of 385 respondents should be selected. A sample representing the total population in Selangor by using a stratified sampling method. Selected sample were calculated based on the total population which is 5.4 million peoples, with 95% confidence interval, and 5% of the margin error. But due to the lack of time and cost to approach the total 250 respondents, the number of 80 respondents was been selected. This selection of sample size actually is enough to be analysed as stated on the book "Research Methods for Business: A Skill Building Approach" on page 296 write by Uma Sekaran. It is stated that sample size that larger than 30 and less than 500 are appropriate for most research.

3.2.2 Development of Questionnaire

The question in the questionnaire was made based on finding from the reading of the journals and books. The content also comes from the previous research that has some suitable idea to be used. The questionnaire has been design in such a way that is easy to be understand by the respondents. There are 12 total number of question in the questionnaire. The questionnaire was structured to have three sections which are;

Section A: General information

Section B: The factors that contributes to the abandoned housing project

Section C: Propose solution to prevent abandoned housing project

3.2.3 Data Analysis

The data collection then will be analyzed by using average index method. The statistical data that has been collected then will be visualized by using table, chart or graph. Frequency analysis was used to analyze the percentage of the respondents with relation to

the variables in part A of the questionnaires. The areas of interest were age group, gender and types of occupation . The result of the analysis is further interpreted into pie chart and bar graph to give a clearer view of the frequency.

For the statistical processing of the survey in part B, frequency tabulation is used to sort the frequencies of request for answers from the respondents. Five point scales was used to indicate the degree of agreement with the statement in the questionnaire. In order to analyze the data gathered, average index analysis is used to gather the level of importance of the data (Muhd Zaimi Abd. Majid dan McCaffer, 1997).

$$\text{Average Index, } X = \frac{1X_1+2X_2+3X_3+4X_4+5X_5}{N}$$

Table 3.2: The index attributes (Abd. Majid and McCaffer, 1997).

Level of Importance or Evaluation	Average Index
Most Agree	4.5 < Average index < 5.0
Agree	3.5 < Average index < 4.5
Average	2.5 < Average index < 3.5
Disagree	1.5 < Average index < 2.5
Most Disagree	1.0 < Average index <1.5

The index show the number of contentments with the factors abandoned housing project an entire range of satisfaction agree from “strongly agree” to “strongly disagree” rather than just state of being “agree”.

CHAPTER 4

RESULT AND DISCUSSION

4.1 Introduction

This chapter will discuss on data analysis obtained from the survey carried out based on location and types of data collected for this study that been described in chapter 3. This observation is important to show that they know about the abandoned project well enough to answer the questionnaire.

The aim of the questionnaire was to attain the first objective of the study which is to determine the statistic data of abandoned housing project in Selangor of first objective. The second objective is to investigate the factors contribute to the abandonment project in Selangor can conclude the third objective which is propose the solution to issues of abandoned housing project in Selangor. The method of study conducted was discussed in the previous chapter, Chapter 3. The following paragraph will discuss the result of the data obtained from the questionnaires.

The questionnaire is about the factor that contributes to the abandoned project in Selangor. Six factors were asked in the questionnaires which are response on environmental, construction, politics, law, management and finance. There are 120 sets of questionnaire that were distributed to the respondents only 80 are answered. From the questionnaire, the analysis was done using an average index which was discussed in Chapter 3.

4.2 STATISTICAL DATA OF ABANDONED HOUSING PROJECT IN SELANGOR

Table 4.1: Statistical data abandoned housing project in Selangor

City	No of Abandoned Project
Shah Alam	10
Petaling Jaya	3
Klang	30
Subang Jaya	3
Kajang	12
Selayang	9
Ampang Jaya	4
Sepang	7
Kuala Selangor	8
Hulu Selangor	14
Kuala Langat	13
Total	**113**

Source. Selangor Housing and Property Board until 2016

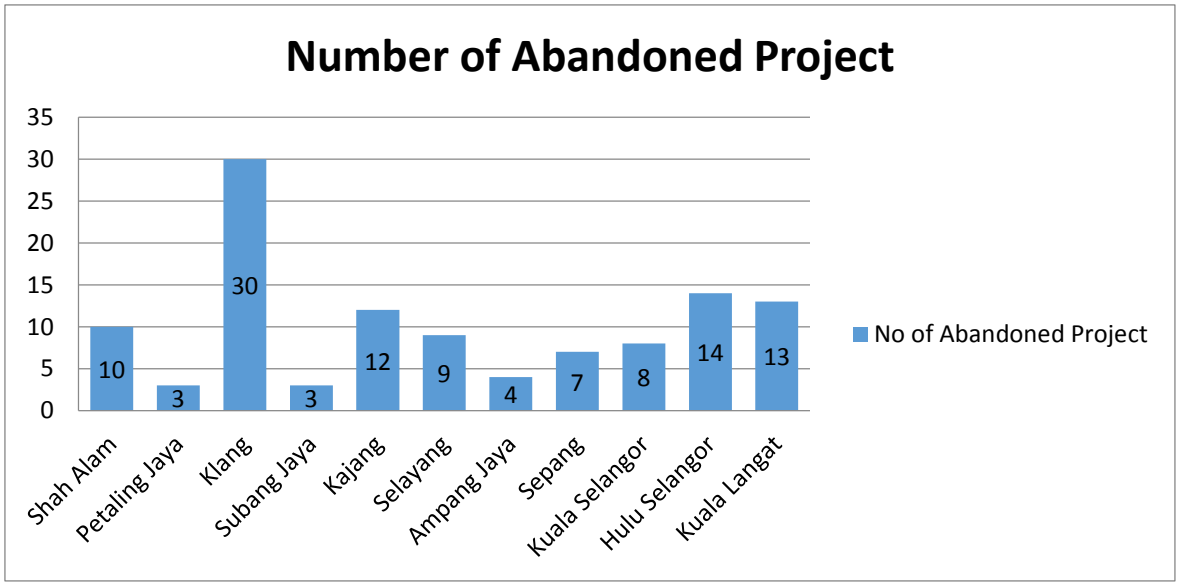

Figure 4.0: Graph of abandoned project in Selangor

Figure 4.0 shows that the number of abandoned project in all city in Selangor. The data of abandoned project in all city around Selangor has been recorded in Selangor Housing and Property Board. That graph shows that Kajang city has the highest number of abandoned project that is 30 have been recorded. This is because Kajang city also has the highest population around 229 665 people compare to the other city. Hence more houses is needed to ensure that all the people in Kajang can have their house. When too many projects are builds in Kajang the probability of abandoned project also higher and this must be avoided because it is not good to the economy of the state and also for the country.

Negative impact of project towards society or environment includes site pollution and noise (Toor & Ogunlana 2008) that negatively impact water resources, forest, wildlife and nearby residents. As in a case in Thailand this resulted in conflicts and non-cooperation with local residents and the need to pay compensation. These could be linked back to inadequate project feasibility studies such as the environmental impact assessment (EIA), and public consultation sessions (Awakul & Ogunlana 2002).

4.3 FACTORS CONTRIBUTE TO THE ABANDONED HOUSING PROJECT

4.3.1 Types of gender

The types of gender by the respondent in the abandoned project are summarized in Table 4.2. The proportion of male is 75% and female is 25%.

Table 4.2: Types of gender

Type of gender	Number of respondent	Proportion (%)
a) Male b) Female	60 20	75 25
Total	80	100

4.3.2 Age group

The age groups of the respondent in the project are summarized in table 4.3. The proportion of 18-26 is 56.25%, 27-35 is 31.25%, 36-44 is 10% and over 45 is 2.5%.

Table 4.3: Age Group

Age group	Number of respondent	Proportion (%)
a) 18-26	45	56.25
b) 27-35	25	31.25
c) 36-44	8	10
d) Over 45	2	2.5
Total	80	100

4.3.3 Types of organization

The types of organization by respondents in the projects are summarised in Table 4.4. The proportions of developer, client consultant and local authorities are 62.5%, 8.75%, 20% and 8.75% respectively.

Table 4.4: Types of organization

Types of organization	Number of respondent	Proportion (%)
a) Developer	50	62.5
b) Client	7	8.75
c) Consultant	16	20
d) Local authorities	7	8.75
Total	80	100

4.3.4 Working experience

The working experince by respondents in the projects are summarised in Table 4.5. The proportions of 0-10, 11-20, 21-30 and 31-40 are 50%, 37.5%, 10% and 2.5% respectively.

Table 4.5: Working experience

Experience of respondent	Number of respondent	Proportion (%)
a) 0-10	40	50
b) 11-20	30	37.5
c) 21-30	8	10
d) 31-40	2	2.5
Total	80	100

4.3.5 Level of education

The level of education by respondents in the projects are summarised in Table 4.6. The proportions of diploma, degree, master and Ph.D are 25%, 62.5%, 10%, 0.9%, and 2.5% respectively,

Table 4.6: Level of education

Experience of respondent	Number of respondent	Proportion (%)
a) Diploma	20	25
b) Degree	50	62.5
c) Master	8	10
d) Ph.D	2	2.5
Total	80	100

4.3.6 Response on environmental impact

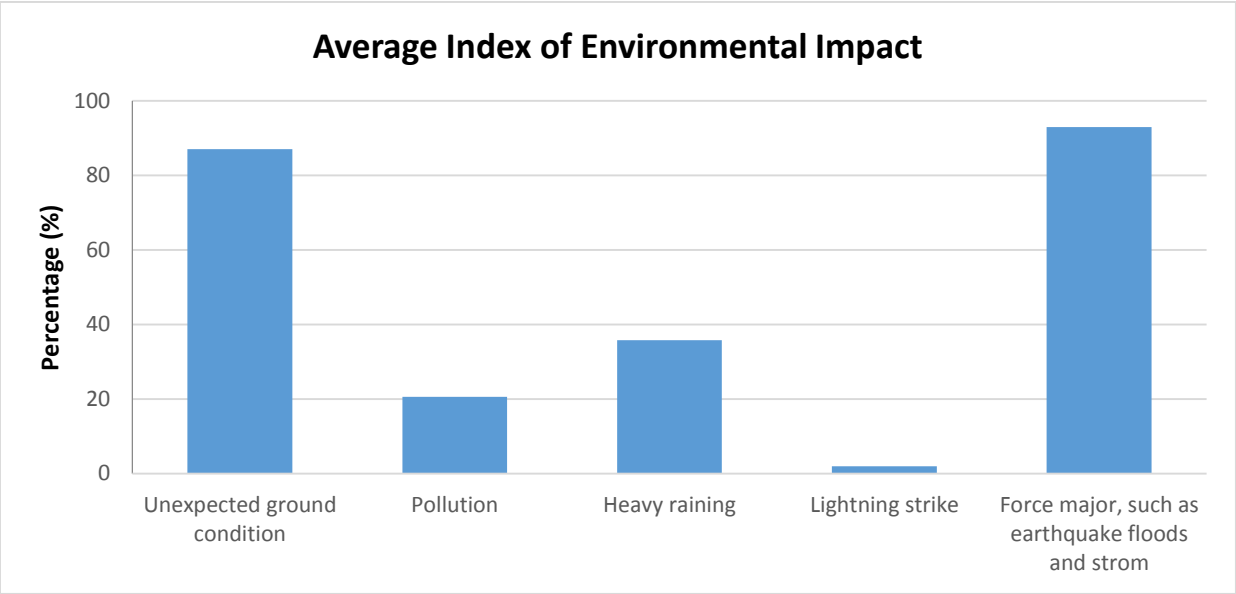

Figure 4.1: Average Index of environmental impact

Figure 4.1 shows that force major, such as earthquake, floods and storm has the highest mean that is 3.71. The respondent has agreed the force major has a highest probability contributes to the abandoned project and unexpected ground condition is the second higher probability may lead to abandoned project. This is because natural disaster is unpredictable and this statement is supported by previous study from (Zhi 1995) Bad weather and unforeseen ground condition are among factors that cause schedule delay. When this happen at the construction site the effects is very high such as destruction of the houses and the contractor need to start the new one with new cost. This result shows us that force major is the main reason why the project was abandoned by the developer.

Environmental impact is unpredictable and it is very risky when it happens at the construction. For example, limestone areas are characterized by some of the most difficult ground conditions in Malaysia, namely weak soils overlying limestone bedrock with karstic features such as pinnacles, solution channels, cavities and overhangs, posing difficulties

both during design and construction of foundations (Chan & Hong 1986). Hence good precautions and inspection at the site location must be increased frequently to monitor the process to avoid any problems that can lead to the abandoned housing project.

4.3.7 Response on construction

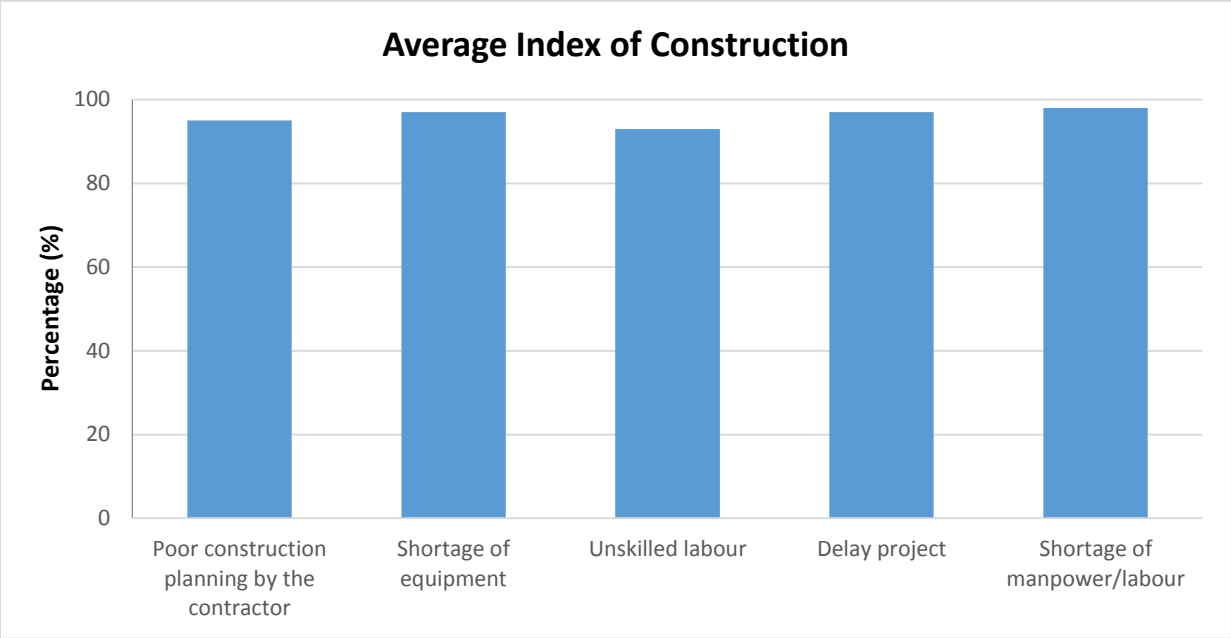

Figure 4.2: Average index of construction

Based on Figure 4.2 the respondent have votes that poor construction planning by the contractor has a higher probability that may lead to the abandoned project in Selangor compared with the other factors. The answers that obtain for this question prove that good management by the contractor is very important at any construction to make sure that the construction work is on schedule to avoid any circumstance that can lead to abandoned project.

Accurate short-term planning is key to maintaining progress and control. Inappropriate project planning and scheduling by the contractor with lack of experience and knowledge (Frimpong et al. 2003; Sweis et al. 2008) can result in high frequency of

schedule adjustments that will be risky to the contractor because it can be contributes to the delay in project (Dissanayaka & Kumaraswamy 1999).

All respondents believe that the probability of project delays is either high or very high in a housing project, indicating that the incidence of project delays is a risk that requires all parties to be cautious and take appropriate action to mitigate them. The suspension of a housing project is usually caused by contractors who fail to meet the components involved in the construction process. For example, some contractors failed to solve problems such as material shortages or workforce on site due to a reduction. This situation is likely to cause project delays in a given period and may cause the project to become abandoned.

4.3.8 Response on politic

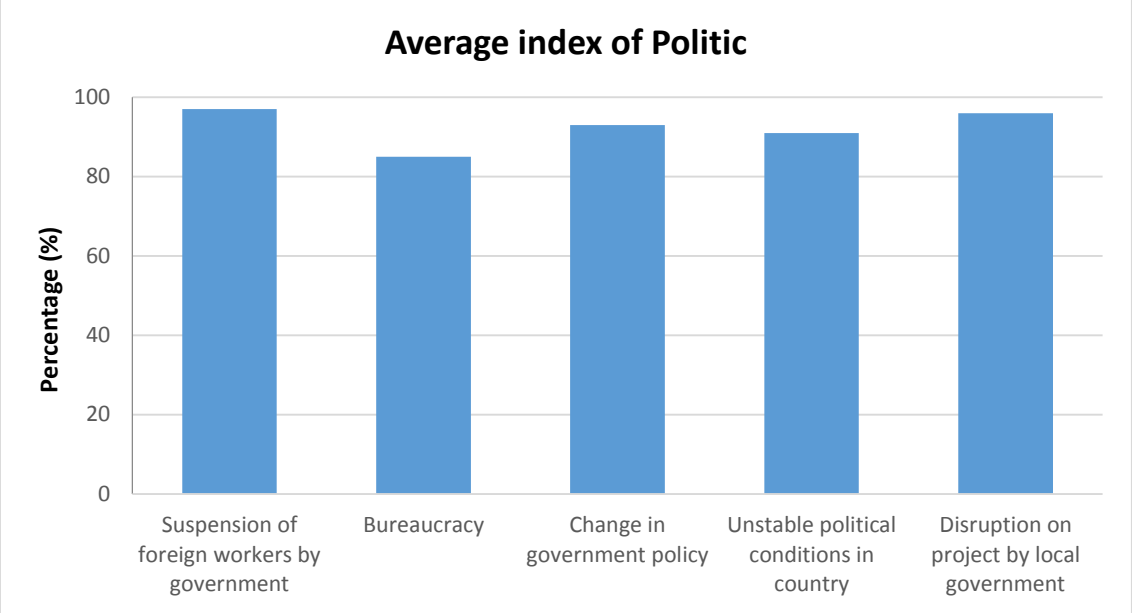

Figure 4.3: Average index of politic

From the table 4.3 it shows that the respondent has agreed that suspension of foreign worker by the government has highest probability compare to the other factors

contributes to the abandoned housing project in Selangor. Suspension of foreign workers by the government is very risky and when this happen in can lead to the delay in project because of shortage of manpower work in the construction and the work cannot running smoothly according to the plan. This statement has been supported by previous study (MBAM) Putrajaya's suspension of foreign workers' intake will exacerbate the shortage of manpower problem in the construction industry, which will cause delays in project completion, warned the Master Builders Association Malaysia.

Shortage of site workers might result in severe shift and overtime(Ogunlana 2008). When this happen at the site construction it can affected their performances during works and maybe can lead to the health problem such as fain, fever and fatigue due to severe shift and overtime they are doing. It can reduces the progression of the project and can contributes to the delay in construction.

4.3.9 Response on law

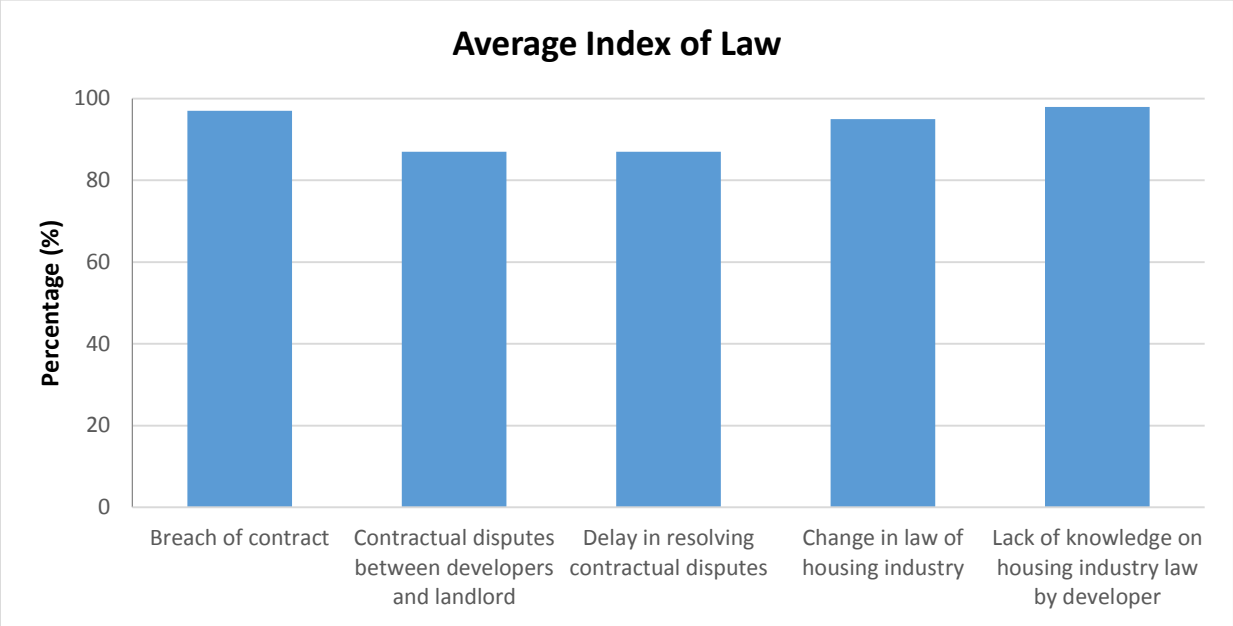

Figure 4.4: Average index of law

Based on figure 4.4 the respondent has agreed lack of knowledge on housing project industry law by the developer and breach of contract has a higher probability compare to the other factors. This factor contributed greatly towards management issue mentioned. This result also supported by previous studies conducted. Inappropriate project planning and scheduling can result in high frequency of schedule adjustments (Frimpong 2003). This can contributes to delay in project or abandoned housing project may happen.

Lack of knowledge on housing industry law by the client or developer can causes the breach of contract. Inappropriate contract arrangements will contribute to disputes in international projects (Chan & Tse 2003). Unclear lines of responsibility and authority and inappropriate mode of financing project may cause delays (Elinwa &Joshua 2001). Inappropriate risk allocation among project team members means risk is not shared proportionately to every each team member (Dissanayaka & Kumaraswamy). When problems arise, they usually affect the one who assumed too much risk. When the one is unable to absolve the impacts of the risk, the resultant liquidation may potentially lead to delay, cost overrun or even abandonment of project.

Poor contract administration also includes lack of appropriate dispute resolution method which means either no dispute resolution mechanism is integrated in contract (Chan & Tse 2003), or that the method used is inappropriate. These result in delays and disputes in a construction project which might eventually render a project to be abandoned. This is very important to understanding the law in housing industry by developer to avoid any problems that can contributes to the abandoned project.

4.3.10 Response on management

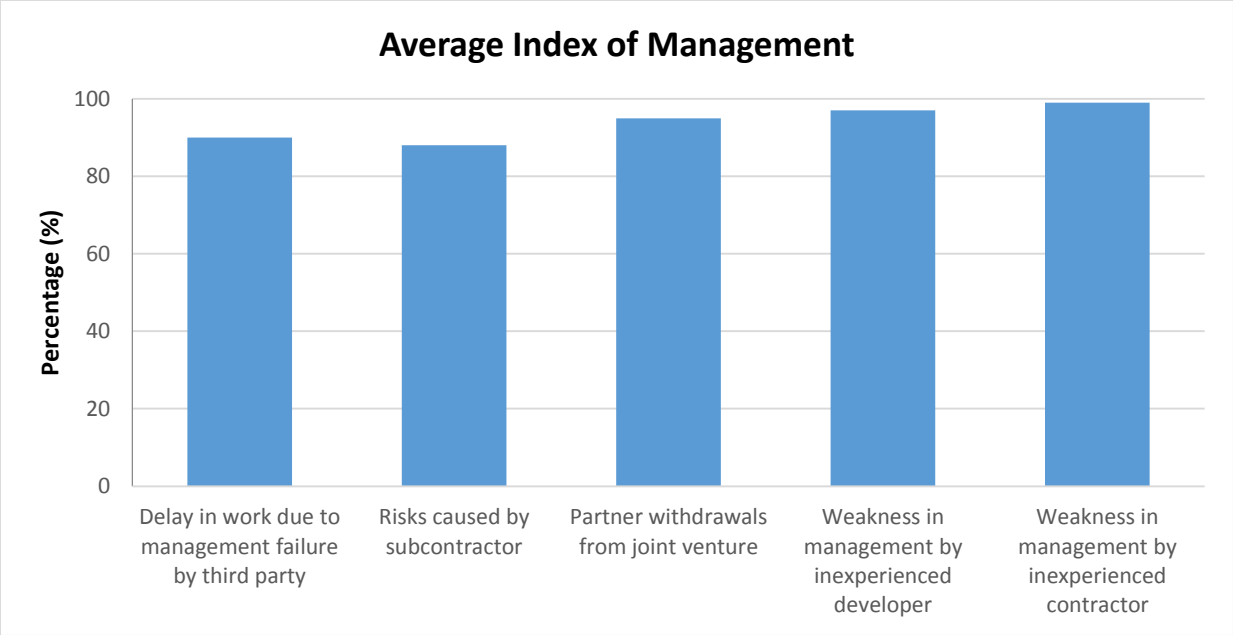

Figure 4.5: Average index of management

From the figure 4.5 it show that weakness in management by inexperienced contractor and weakness in management by inexperienced developer has the highest probability that contributes to the abandoned project in Selangor ranked by the respondent. Project management factors are factors that are resulted from an ineffective project manager, such as problems of communication and coordination, inappropriate project planning and scheduling, project control problems, and poor safety management on site. This statement has been supported by previous study (Fox, 1991) it has been noted that inexperienced or first time owners of small project will select a designer or contractor who is not qualified to handle that work. The risks involved in choosing an inexperienced designer include unfamiliarity with contract furnishings and little knowledge of the strict fire codes specifying the types of fabrics required in houses and hotels.

Communication system is important key towards the successful of a project. A successful project manager is to ensure that designs, instruction, work procedure and other

production information are appropriately and effectively communicated to each members of the project team (Cheng et al. 2005). A good communication system will ensure that all the information be carried around and exchanged among all project participants involves in the project.

Communication of information also involves the recording of information into explicit forms to facilitate communication across dimensions of space and time. ICT technologies adopted by a firm can be considered tangible communication systems. The level of implementation of ICT technologies can be measured by looking at how much a firm has adopted ICT technologies.

4.3.11 Response on finance

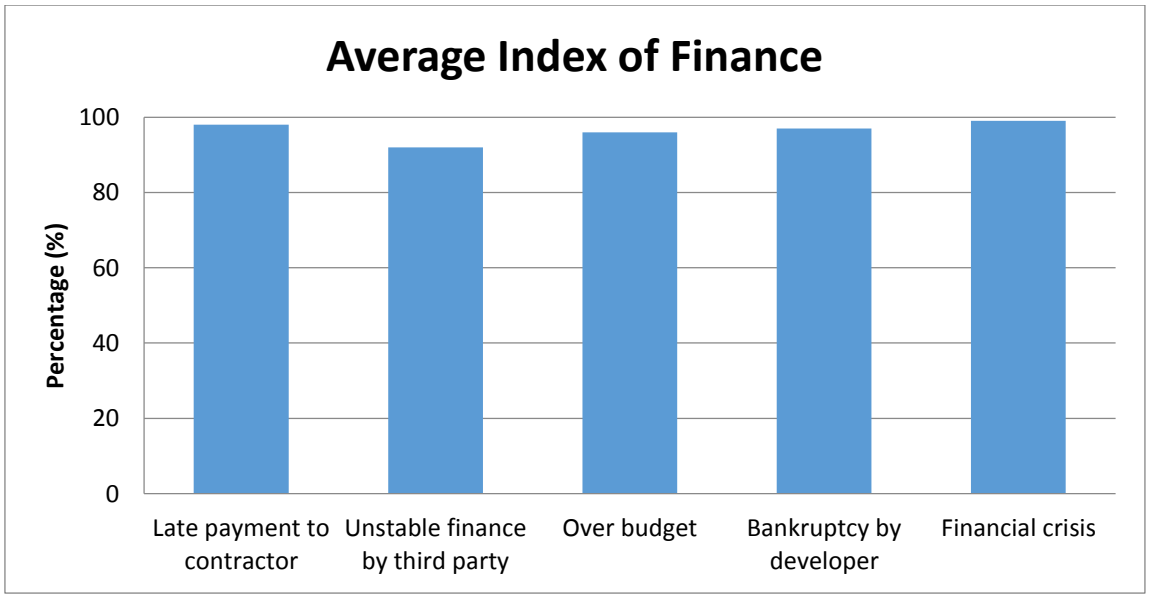

Figure 4.6: Average index of finance

Figure 4.5 shows that financial crisis and bankruptcy by developer is the highest main reason contributes to the abandoned housing project in Selangor agreed by the respondent. Financial is very important in all construction project and good financial system is required to manage the flow cash of many in the company to avoid any problems

related to the financial such as namely late payment, poor cash flow management, insufficient financial resources and financial market instability. The most important aspect of cash flow management is to avoid any extended cash shortages which are caused by having too great a gap between cash inflows and outflows. This statement has been supported by previous study (Abdul Rahman 2006) addressed that lack of funds may affect the project cash flow and lead to delay in of site possession which consequently causes the delay in project and maybe lead to the abandoned project. This is very important to have good management financial plan in every construction project.

This result has been supported by previous study Sweis et al (2007) stated that in Jordan, the financial problems faced by many contractors led to delays in construction projects. This is because of the many changes made by project customers during construction. Consequently, it increases the cost of construction where contractors need to get materials and equipment out of their normal boundaries. In addition, the delay in paying the contractor will affect the cash flow of the contractor. Delay in payments causes slow progress on the site, as many subcontractors and suppliers are subject to financial difficulties. Therefore, no material is sent to this site. Hence it can cause delay in project.

4.4 PURPOSE SOLUTION TO OVERCOME ABANDONED HOUSING PROJECT IN SELANGOR

Figure 4.7: Purpose solution of abandoned housing project

For this study respondent were asked their perspective about which method is the best purposes solution to overcome abandoned housing project from happen in the construction. Figure 4.6 shows the result for the best solution to avoid abandoned project in construction. Good financial system is the best solution to avoid abandoned project in Selangor voted by the respondent that is 62% respondent agreed, 26% has voted that good teamwork between team member client, consultant and contractor, 5% stable political condition in country, 4% for well-managing and planning by the contractor, 3% understand the law of industry project.

This result has been supported by the previous study, according to Ahmed et al (2003) similar trend can be seen in the Malaysian construction industry. The possible financial-related factors that lead to delays in Malaysian construction projects are financial problems of clients such as financial difficulties, delayed payments and economic problems. The financials and cash flow problems of contractors and external factor of poor economic conditions such as currency and inflation rate. In addition, difficulties in obtaining loans (Arditi et al, 1985) and short of funding are adverse financial-related factors that were identified in previous works.

4.5 SUMMARY

Finally, the most important attribute can be summarized from each causes from the analysis, rating frequencies for the highest ranked and the least ranked attributes for which described the probability are derived from the respond of respondents.

Based on this questionnaire it can conclude that the all this six main categories that is environmental impact, construction, politic, law, management and finance have their impacts that can lead to the abandoned housing project in Selangor. The majority of respondent have agree that major force, shortage of manpower, suspension of foreign workers by government, breach of contracts, weakness in management by the inexperienced developer and financial crisis is very high, so all these risks are considered the most significant risks that can contributes to the problems associated with abandoned housing project in Selangor.

From the analysis we can conclude that the best solution to abandoned housing project is having a good financial system in the company. All the problems associated with abandoned housing project need an effective system of risk management strategies to face the rapidly growing housing industry in Selangor. Nowadays all risks related to the abandoned housing project should be given a great attention. These risks can be detected in early stage and be efficiently managed if all parties involved in housing industry cooperate together to dealing with this matter.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1 INTRODUCTION

The study of factors contributes to the abandoned housing project is still low in Malaysia. In order to achieve the implementation to overcome this problem in short period is really hard but something should be done in order to achieve it. Let take the longer time to achieve rather than just wait and no action taken. From time to time the study should be improved. This is to make sure that the solution of abandoned housing project can be determine and fully implemented in Malaysia.

5.2 CONCLUSION

Based on the findings, the following conclusion can be highligted:

i. There are many issue involved in housing project such as risks related to the environmental impacts, construction, politic, law, management and finance. From the result it shows that under the categories have been abovementioned issues, the probability of risks from unexpected ground condition, shortage of manpower, suspension of foreign workers by goverment, breach of contracts, weakeness in management by the inexperinced developer and financial crisis is very high, so all these risks are considered the most significant risks that can contributes to the problems associated with abandoned housing project in Selangor.

ii. The respondent seems agreed with the purpose solution to abandoned housing project in Selangor is by having a good financial system in the company. It shows that good financial system is the key to the successful project because with the good financial system we can avoid many risk related to the abandoned housing project to be happen. All the problems associated with abandoned housing project need an effective system of risk management strategies to face the rapidly growing housing industry in Selangor. These risks should be detected in early stage and prevent efficiently managed by all parties involved in housing industry to prevent this problem occurred in future.

5.3 RECOMMENDATION

For future research, there are more extensive studies could be carried out in order to understand more clearly about the factors contributes to the abandoned housing project and its associated data. There are some suggestions for future study such as:

i. In order to obtain a more precise and accurate value of the average index, the number of the sample size can be increased such as involving the role of the authorities, those involving restricting and financing.
ii. The questionnaires that are intended to be distributed should be understood by the respondent to ensure that their feedback is satisfying.
iii. Develop a system to detect the abandoned housing project in early stage.
iv. Study on economical effect of abandoned housing project toward Malaysia economy.

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APPENDIX A

Put a check (√) to your corresponding answer.

Section A (General information)

1. Gender:

□ Male □ Female

2. What is your age group?

□ 18 to 26 □ 27 to 35 □ 36 to 44 □ Over 45

3. Type of organization

□ Developer □ Client □ Consultant □ Local authorities

4. Working experience

□ 0 to 10 □ 10 to 20 □ 20 to 30 □ 30 to 40

5. Level of education

□ Diploma □ Degree □ Master □ Ph.D

Section B

Please indicate the suitable response for each statement by tick (/) your answer on a scale as below.

A) Response on Environmental Impact

Factors	Probability				
	Very low probability	Low probability	Moderate probability	High probability	Very high probability
Force Major, such as earthquake, flood and storm					
Unexpected ground condition					
Pollution					
Heavy Raining					
Lightning Strike					

B) Response on construction

Factors	Probability				
	Very low probability	Low probability	Moderate probability	High probability	Very high probability
Poor construction planning by the contractor					
Shortage of equipment					
Unskilled labour					
Delay project					
Shortage of manpower/labour					

C) Response on politic

Factors	Probability				
	Very low probability	Low probability	Moderate probability	High probability	Very high probability
Suspension of foreign workers by government					
Bureaucracy					
Change in government policy					
Unstable political conditions in country					
Disruption on project by local government					

D) Response on law

Factors	Probability				
	Very low probability	Low probability	Moderate probability	High probability	Very high probability
Breach of contract					
Contractual disputes between developers and landlord					
Delay in resolving contractual disputes					
Change in law of housing industry					
Lack of knowledge on housing industry law by developer					

E) Response on management

Factors	Probability				
	Very low probability	Low probability	Moderate probability	High probability	Very high probability
Delay in work due to management failure by third party					
Risks caused by subcontractor					
Partner withdrawals from joint venture					
Weakness in management by inexperienced developer					
Weakness in management by inexperienced contractor					

F) Response on finance.

Factors	Probability				
	Very low probability	Low probability	Moderate probability	High probability	Very high probability
Late payment to contractor					
Unstable finance by third party					
Over budget					
Bankruptcy by developer					
Financial crisis					

Section C

Propose solution to prevent abandoned housing project.

□ Good Financial System
□ Good teamwork between team members client, consultant and contractor
□ Understand the law of housing industry
□ Well-managing and planning by the contractor
□ Stable political condition in country

Thank you for your time and support.

APPENDIX B

Tandakan (√) pada jawapan anda.

Bahagian A (Informasi Diri)

1. Jantina:

□ Lelaki □ Perempuan

2. Apakah kumpulan umur anda?

□ 18 to 26 □ 27 to 35 □ 36 to 44 □ Over 45

3. Jenis organisasi:

□ Pemaju □ Klien □ Perunding □ Pihak berkuasa tempatan

4. Pengalaman bekerja anda?

□ 0 to 10 □ 11 to 20 □ 21 to 30 □ 31 to 40

5. Tahap pendidikan:

□ Diploma □ Degree □ Master □ Ph.D

Bahagian B

Sila pilih kenyataan yang sesuai untuk setiap pernyataan dengan tandakan (/) jawapan anda pada skala seperti di bawah.

A) Berpunca dari alam sekitar.

Punca-punca	Kebarangkalian				
	Kebarangkalian yang sangat rendah	Kebarangkalian rendah	Kebarangkalian sederhana	Kebarangkalian tinggi	Kebarangkalian sangat tinggi
Bencana alam, seperti gempa bumi, banjir dan ribut					
Keadaan tanah yang tak dijangka					
Pencemaran					
Hujan Lebat					
Panahan Petir					

B) Berpunca dari pembinaan.

Punca-punca	Kebarangkalian				
	Kebarangkalian yang sangat rendah	Kebarangkalian rendah	Kebarangkalian sederhana	Kebarangkalian tinggi	Kebarangkalian sangat tinggi
Perancangan pembinaan yang tidak terancang oleh kontraktor					
Kekurangan peralatan					
Buruh tidak mahir					
Kelewatan projek					
Kekurangan tenaga kerja / buruh					

C) Berpunca dari Politik

Punca-punca	Kebarangkalian				
	Kebarangkalian yang sangat rendah	Kebarangkalian rendah	Kebarangkalian sederhana	Kebarangkalian tinggi	Kebarangkalian sangat tinggi
Penggantungan pekerja asing oleh kerajaan					
Birokrasi					
Perubahan dasar kerajaan					
Keadaan politik yang tidak stabil					
Gangguan pada projek oleh kerajaan tempatan					

D) Berpunca dari Undang-undang

Punca-punca	Kebarangkalian				
	Kebarangkalian yang sangat rendah	Kebarangkalian rendah	Kebarangkalian sederhana	Kebarangkalian tinggi	Kebarangkalian sangat tinggi
Pelanggaran kontrak					
Pertikaian kontrak antara pemaju dan tuan tanah					
Kelewatan dalam menyelesaikan pertikaian kontrak					
Perubahan undang-undang industri perumahan					
Kurang pengetahuan mengenai undang-undang industri perumahan oleh pemaju					

E) Berpunca dari Pengurusan

Punca-punca	Kebarangkalian				
	Kebarangkalian yang sangat rendah	Kebarangkalian rendah	Kebarangkalian sederhana	Kebarangkalian tinggi	Kebarangkalian sangat tinggi
Kelewatan dalam kerja kerana kegagalan pengurusan oleh pihak ketiga					
Risiko yang disebabkan oleh subkontraktor					
Rakan kongsi tarik diri dari usaha sama					
Kelemahan dalam pengurusan oleh pemaju yang tidak berpengalaman					
Kelemahan dalam pengurusan oleh kontraktor yang tidak berpengalaman					

F) Berpunca dari Kewangan

Punca-punca	Kebarangkalian				
	Kebarangkalian yang sangat rendah	Kebarangkalian rendah	Kebarangkalian sederhana	Kebarangkalian tinggi	Kebarangkalian sangat tinggi
Bayaran lewat kepada kontraktor					
Kewangan tidak stabil oleh pihak ketiga					
Terlebih bajet					
Kebankrapan oleh pemaju					
Krisis kewangan					

Section C

Cadangan penyelesaian untuk mencegah projek perumahan daripada terbengkalai

□ Sistem kewangan yang baik
□ Kerja berpasukan yang baik antara klien pasukan, perunding dan kontraktor
□ Memahami undang-undang industri perumahan
□ Pengurusan dan perancang yang baik oleh kontraktor
□ Keadaan politik yang stabil di dalam Negara

Terima kasih atas kesudian menjawab.