

Risk due to the availability of resources construction essay



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Risks are involved in all stage of the construction project. The construction risks will arise within the contract period and it may cause the Contractors failure to keep within the cost budget, failure to complete the work within the completion date and failure to achieve the quality requirement of work (Flanagan and Norman, 1993, p. 8)². The Contractors have the responsibilities to bear for the risks that arise during the construction period (Flanagan and Norman, 1993, p. 183)². Once the contract has been signed, the contractors have the responsibility to perform the project either the project is continue for better or for worse until the project is completed (Sayers, 1997, p. 1)³. 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.

The risk has the capacity of eroding profit and moving the project from a profit making into a loss-making venture. A Contractor can make a profit or loss at the end of the project is depending in how accurately the risks have been assessed. Thus, the Contractors have to consider the risk factors that involved in the project in order to make a decision on whether or not to tender the project. The tender price will be influence by the risk factors. The construction risks will cause the estimated tender sum difference with the actual cost of project. Therefore, during tendering for a project, a Contractor has to consider the risks factors that may occur during the construction stage in order to ensure they have the capability to carry out the work and making a profit margin at the end of the project.

1. 2 Aim and Objectives

This study aim is to understand the importance of managing the risks during tender stage. In order to achieve the aim, the following objectives are conducted to support the aim:-

To determine the construction risk that may occur within the contract period that faced by the Contractors.

To illustrate the consequence of the risk where the risks does not be managed at the tender stage.

To identify the approach of managing the risk that faced by the Contractor.

1. 3 Background

Risk are involved in the all stage of a construction project due to the construction process period are long, the process are complicated, and costly. A risk can be managed, reduced, transferred, shared, and accepted, but it cannot be ignored (Dallas, 2008, p. 5)¹. Moreover, the risk has an impact over the construction objectives which in term of cost, time, quality, safety and health and environmental (Flanagan and Norman, 1993, p. 8)². Thus, before the Contractors are going to tender for a project, they have to identified all the risk that face by him to measure the impact that against by him. In order to dealing with the risks, a risk management processes are recognized as a systems process which assists the Contractors to manage the construction risks. Risk management is one of the systematic ways to manage the risk or unwanted event which influence the outcome of the project. According to Smith et al. (2006, p. 2)â€ , undertaken a risk

management process in tender stage can assist the Contractors to minimize the impact of the risk and making a better decision over the risk. By conducted the risk management process, it can assist the Contractors have the better understanding over the risks or problem. The risks will involve in each of the tender stage. During the estimating process, the risks factors will influence the tender price. The estimators have to ensure the risks are well pricing into the tender price. Consequently, the risk management process has to be conducted in the tender stage due to the risk management process can assist to make right decision over project.

1. 4 Scope of study

This study is focus on how the Malaysian private Contractor managing the risk before signed the contract for a project. The area of research is focus on Malaysian private Contractor. The scopes of this study including finding out the different type of the construction risk which may occur within the contract period and the consequence of those risk against the Contractor. A suitable approach of managing the construction must be provided in order to identify, analyze and response those risks. The questionnaire survey will conducted in order to enhance this study. This study will only focus on the group of the Malaysian private Contractor.

1. 5 Research Methodology

In this research, the main research methods used to complete this research are the literature review and data collection through the questionnaire survey which among the Malaysian private Contractors. The literature reviews in this research are conducted to support the objectives of this study. The resources of the literature review are from the books, journal <https://assignbuster.com/risk-due-to-the-availability-of-resources-construction-essay/>

articles, and internet sources. In order to achieve the objectives of this study, the literature review has focusing on the potential construction risk that encountered by the private Contractor, the effect to the construction against the Contractor and the approach of managing the construction risk that are required to carry out by the Contractor.

Furthermore, the questionnaire survey will conducted among Malaysian private Contractor to enhance this study and achieve the objectives of this study. The questionnaire survey sent to the Contractor through either by hand, email and post. The main purpose of conduct the questionnaire survey is to obtain the information from the focusing groups of Malaysian private Contractors in order to investigate the construction risk that faced by them, the effect of construction risk among them and how the Contractor manage the construction risk. After the collected data from the questionnaire survey has been collected, then the collected data will be summarizing, arranging and analyzing by using the SPSS software. Moreover, a clear interpretation of the result will be conducted to support this study.

1. 6 Structure of the Dissertation

This study contains of 5 chapters and each of the chapter had summarizing as follows:

Chapter 1: Introduction

This chapter highlights the main reason that the Contractors have to carry out risk management during the tender stage. The aim and objectives and background of this study has determined in this chapter.

Chapter 2: Literature Review

This chapter discussed on the potential risk that encountered by the Contractor, the consequence of construction risk against the Contractor, importance of managed risk in tender stage, and the approach of manage the risk in tender stage and construction stage.

Chapter 3: Research Methodology and Questionnaire Structuring

This chapter identified the method and material that used in this study. The research method of this study will be well interpreted in this chapter.

Chapter 4: Data Analysis

This chapter summarized, arranged and analyzed the collected data and conduct a clearly interpretation on the result of the collected data.

Chapter 5: Conclusion

This chapter summarized the outline and the finding of this study, and recommend on this study for future research.

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1. 7 Reference

Dallas, M. F. 2006. Value and risk management: A guide to best practice. UK: Blackwell. p. 5.

Flanagan, R and Norman, G. 1993. Risk management and construction. London: Blackwell. p. 8, 183.

Sayers, P. 1997. Competitive tendering, management and reality: Achieving value for money. London: E & Fn Spon. p. 1.

Smith, N. J., Merna, T. and Joling, P. 1999. Managing risk in construction project. Oxford: Blackwell Science. p. 2.

CHAPTER 2: LITERATURE REVIEW

2. 1 Overview of various type of risks in construction project that faced by Contractors

This chapter discussed on the potential risk that may occur during the contract period. The definition of risk and the various types of the risks and its consequence over the project will be discussed on this chapter.

2. 1. 1 Definition of risks

Risks that involved in the construction project can be described as the probability of occur something or occur some unwanted or unfavorable event which that will has an impact over the project (Mostata Ghadak Zadeh, 2010, p. 9). Flanagan and Norman (1993, p. 8) emphasized that, risk is an uncertain event the may cause a construction project failure to keep within the objective of project which in term of cost, time, quality, safety and environmental sustainability. Moreover, Begum Ongel (2009) stated that, risks can be described as the unforeseen event that might be occur in the future and may have negative consequences over the project objectives. The construction risk can be described as an uncertainty or probability of occurrence of something that has an impact over the project outcome as shown as Figure 2. 1.

Figure 2. 1: The Concept of the risk (Source: Merna and A-Thani, 2008, p. 8)
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Merna and A-Thani (2008, p. 13) suggested that, the risk can be described into 3 categorized:-

Known risk- The known risk can be described as the risks that happen every day on construction industry. Basically, the known risk will be the variation work and the inflation in construction resource costs. Those known risk will cause the additional work needed to be carry out and delay for the work. If the known risk has happen in the construction stage, then those work will usually covered by the contingency sum of the contract.

Known unknowns- The known unknowns are the risk event that can be predicted or foreseen. The effect of the known unknowns and their probability of occurrence will be easily to be known.

Unknown unknowns- The unknown unknowns are the risk that cannot easily be predicted. Generally, those events that cannot be easily foreseen are the force majeure event.

2. 1. 2 Type of risk in tender stage

According to Odeyinka et al (2006), the risk sources in the construction industry that are occur during the tender stage are including the estimating risks, design risks, tender evaluation risks and the competitive tendering risks. Moreover, Cooke and Williams (2009, p. 123) mentioned that, the risk factors that require to consider by the Contractors during the tender stage are including the tender risks, quantity risks, subcontractors risks, design risks, programme schedule risks, method risks, health and safety risks, and documentation risks.

2. 1. 2. 1 Design risks

Poor design can cause the Contractor's bid be influenced and affecting the ability to win the project. The Contractors have the responsibility for the quality of work.

2. 1. 2. 2 Estimating error risks

During the preparation of the tender price, the estimators may estimate wrongly or make some mistake on quantities of the work. Thus, this will influence the accuracy of the tender price. According to Cooke and Williams (2009, p. 123), the Contractors are require to assess the accuracy of the quantities in the bills of quantities. In case of the quantity error is done in the bills, the Contractors have to accept the error and bear for the losses after the contract award to the Contractors.

2. 1. 2. 3 Competitive tendering risks

In traditional tender process, the tender will awarded by the lowest bidder. Many of the Contractors will try to lower down the tender price in order to winning the bid. In this case, the Contractors may not have sufficient resource to complete or carry out the work. Consequently, lose the profit margin.

2. 1. 2. 4 Documentation risks

According to Cooke and Williams (2009, p. 125), clarity of tender documentation is important. The Contractors requires referring the tender documentation such as the drawing and specification carefully in order to price accurately. Cooke and Williams (2009, p. 125) stated that, the Contractors require to refer to the tender documentation very carefully in

order to assess implication of onerous contract term, clauses deleted from standard contracts, high levels of liquidated damages, unrealistic contract period, possible innovation of the design and contract bonds and guarantees required.

2. 1. 2. 5 Method risks

The Contractor's choice of construction method is one of the important decisions during the tender stage. Cooke and Williams (2009, p. 125) mentioned that, the Contractor's choice of construction method can win the contract but it may cause risks over the project. One of the example is that the type of the earthwork support required may be require more expensive earthwork support to support the foundation in case of week site condition.

2. 1. 2. 6 Subcontractors risks

2. 1. 2. 7 Health and safety risks

2. 1. 3 Type of risks in construction stage

The construction risks are the risks that occur during the construction stage. According to Nafisah Binti Abdul Rahiman (2006, p. 24), the construction risks are the unforeseen or unwanted events that occur within the construction period. Flanagan and Norman (1993, p.) stated that, the risk are involved in the construction project due to the construction activities process are taken long duration, complicated, influenced by environment factor and costly. According to Boussabaine and Richard (2004, p. 180), the construction risks has an affect the over the cost, time and work quality of the project. During the construction stage, the Contractors have the responsibility to bear for the risk. Thus, the Contractors are requiring

focusing on the construction risk that may face by them in order to reduce the effect against them. Boussabaine and Richard (2004, pp. 181-184) mentioned that, the construction risks that face by the Contractors during the construction period are including the availability of resources risks, industrial disruption risks, productivity of labour and plant and machinery risks, safety and health risks, performance of subcontractor risks, poor workmanship risks, schedule programme accuracy risks, capability of the contractors risks, materials or components risks, site condition risks, unfavorable weather conditions risks, quantities of work risks, price inflation risks and etc.

2. 1. 3. 1 Risk due to the availability of resources

The availability of material, labour and plant and machinery will influence the construction cost be increased. The price of the material, labour and plant and machinery are expensive in the condition of those resources are not readily available in the area of the construction site. It may require the extra transportation fees to deliver the material and plant and machinery to the construction site. Moreover, when the certain labour is not readily available in the area of the construction site, it may require employing them from an area where such labour is available.

2. 1. 3. 2 Risk due to industrial disruption

The industrial disruption risk may occur due to the strike action among the labour. The strike event may occur when the labour is unwilling to follow any matter that instruct by the Contractor. In this case, the construction work will be delayed and cannot be completed within the completed date.

Consequently, the Contractors suffer the losses of paying for the cost to <https://assignbuster.com/risk-due-to-the-availability-of-resources-construction-essay/>

settle down the strike event and pay the liquidated damage over the delayed work.

2. 1. 3. 3 Risk due to the productivity of labour and plant and machinery

The productivity of labour and plant and machinery is important due to it may caused the work be delayed. The Contractors can provide the training for the labour to increase labour's productivity and provide adequate maintenance for the plant and machinery to ensure the plant and machinery operate efficiently.

2. 1. 3. 4 Risk due to safety and health

The safety and health risk will occur due to the impact of hazards which involved in construction site. Risk of accidents is occurring during the construction period and that cause the personal injury. The Contractors are required to compensate for the labour in case of the labour are injured during carry out the construction work. The Contractor has the responsibility to ensure the construction site is safety. Consequently, the Contractors have to comply with the Occupational Safety and Health Act in order to reduce the accident risk during the construction stage.

2. 1. 3. 5 Risk due to the subcontractor's coordination

In case of the subcontractors are fail to coordinate the work plan correctly, it can lead to work be delayed and cost be overrun. Moreover, the specialist subcontractor's work can account a high percentage of the overall capital cost. Thereby, the effect of the specialist subcontractors are fail to coordinate the work on the overall project is of a greater magnitude.

2. 1. 3. 6 Risk due to poor workmanship

The poor workmanship can cause the quality of construction work is not meet with the standard requirement. A Contractor has the responsibilities to ensure the construction work is meet and according to the contract requirement. In case of the quality of work are not meet with the standard requirement, the Contractors may require to reconstruct the work and to rectify the work by his own cost.

2. 1. 3. 7 Risk due to project programme accuracy

Sometime the process of the actual work will not keep within project schedule and plan. Failure on scheduling the time, unforeseen delay in material delivery, plant and labour availability will lead to cost overruns and work be delayed.

2. 1. 3. 8 Risk due to capability of the contractors

The Contractors have to ensure he has sufficient capital and resource in order to carry out the work. The Contractors must consider the size of the project in order to ensure that he has sufficient resource to carry out the work of the project. Besides, the Contractor must ensure that the type of project is the work that he has the experience and he has performed the similar type of work in the past. This is to ensure the Contractors can carry out the project successfully.

2. 1. 3. 9 Risk due to the materials or components

The Contractors have the responsibilities to ensure the works meet with the quality requirement. Failure in maintain the components of the work can lead

to expensive maintenance cost. Thus, the Contractors have to ensure the quality of the material and be careful on selecting the material.

2. 1. 3. 10 Risk due to differing site condition

Sometime the actual site condition may different with the expectation condition. The type of the earthwork support may require support by an expensive foundation as the ground condition of site is weak. An investigation of the site condition should be conducted in order to reduce the differing site condition risks.

2. 1. 3. 11 Risk due to unfavorable weather conditions

Weather is an unforeseen risk during the construction period and it will cause delay of work. Moreover, the adverse weather will damage the components and element in the construction site. Thus, the Contractors should provide regular updates of weather in order to ensure the work plan can be altered due to the adverse weather condition can interrupt the work programme.

2. 1. 3. 12 Risk due to quantities of work

The Contractors has to bear for the loss due to the quantity in the bill of quantities is not accuracy. It will cause the construction cost and time overrun if the quantity work is subsequently reduce (Cooke and Williams, 2009, p. 123). Moreover, the differences between the actual and planned work will lead to cost and time be overrun.

2. 1. 3. 13 Price inflation risks

The price inflation is means a persistent rise in the price of the construction resources such as the cost of material, transportation fees, cost of labour

and cost of plant or machineries. The inflation on the price of construction resources is difficult to forecasting. During the recession, the price of resources may be increased and this may cause that the Contractors to losses a lot of money.

2. 1. 3. 14 Design risks

The design risks are the risks that involved in a concept design or a detailed. According to Jackson (2010, p. 313), the Contractors are responsible for the design and in those cases it is critically important that design risks are given serious review and consideration in the overall risk mitigation plan. The design risks may influence the Contractor's ability to construct the project on time, within budget, and within the quality requirement. To continue with Jackson (2010, p. 314), the design risks that may faced by the Contractors are including the followings:-

Poor quality and inadequate of the design drawing or specifications

The information and detail of drawing and specification that needed to construct the construction works are not completed, inaccurate, or unavailable. The Contractors are require to obtain the drawing or information from the Architect, thus, delay on work be occurred.

Noncompliance with the design standard

The design of the project does not meet with the standard requirement, building code or the other regulations. In case of the Contractors are build according to the design the not meet with the standard requirement,

building code or the other regulations, it may cause the Contractors fail to keep within the quality of the works.

Changes in design standard or regulation requirement

The regulatory requirement in place at the commencing of the project may change during construction stage.

Variation on design

The Client changes the design during the construction stage. The contractors are require extra time carry out the variation work, thus, delay on time.

Inaccuracies associated with supplemental design information.

The information of the soil report, environmental report and etc that provide by the Architect to the Contractors is not accurate.

Latent design defects affecting Contractor's warranty

Defective design details that result in flawed construction after occupancy of the facility such as a roof flashing leaks because of poor design.

Jackson (2010, p. 314) stated that, The Contractors are require to do some background investigation about the Architect and Engineer before tender the project which in case of the Contractors not familiar with the Architect or the Engineer who designed the project. This is to ensure that the quality of works that the Architect or Engineer produces in order to reduce the design risks.

2. 1. 3. 15 Political risks

According to Jackson (2010, p. 317), the political risks can be described as third-party risks which the Contractors are usually have least amount of

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control over it. Although the Contractors are aware that the political risks are exist, but there is no ways to accurately predict how various jurisdictions and agencies will act. Contractors are required try to anticipate the political risks that may affect the ability to fulfill the expected contract requirement before submit a bid. According to Jackson (2010, p. 317), the political that involved in the construction project are including the followings:-

Changes in law

Change in sales tax or other tax structures that increase in sales or use taxes will impact material costs

Constraints on the accessibility and employment of expatriate staff

2. 1. 3. 16 Environmental risks

Environmental risk is an important issue that the Contractors are requires to concerns due to it may influence the cost and time of the construction project. The material and chemicals that used at the construction project may cause the pollution over the surrounding area. Moreover, the environmental risks are the risks that the Contractors have less control over it. According to Jackson (2010, p. 319), the environmental issues that can influence Contractor's budget and schedule planning which are including the followings:-

Environmental permits and approvals

The environmental permits and approval are cannot be getting on the planned time due to the environmental permits and approvals are delayed or require more time to negotiate than expected.

Hazardous materials or site contamination

The unknown hazardous materials or site contaminants be found after the construction work has commenced.

Archeological findings

The unknown artifacts are founded or an unknown burial site or cemetery is unearthed during the construction period, that may requiring the construction work to stop.

Endangered species

The project has known or unknown endangered species sightings that will require protection and special care during construction.

Wetlands, coastal protection or flood plain issues

Wetlands, coastlines or flood plain are require the special protection, thus can influence the construction approach.

According to Osborn and Schreyer (1988, p. 1), before the construction project commencing, the Contractors are require to appreciate the potential for additional costs due to the existence of hazardous substances and other environment concerns.

2. 1. 3. 17 Financial risks

According to Jackson (2010, p. 317), the financial risks can be described as the risks that associated with the Contractor's own financial position. The Contractors are required to maintain sufficient working during project execution, thus the financial standing of the Contractors are require be good.

The financing risks that faced by the Contractors are including the followings:-

Contractor's cash flow

In case of the Contractors have insufficient of the credit can cause delays in supplying the material, late payment to subcontractor. It may cause the construction work be delayed and the subcontractor not willing to carry out the work.

Interest rate increases

In case of the borrowing money from bank by the Contractors to fund the project, once the interest rate is increased it would have an adverse effect on the project.

Insufficient Client funds

If the Clients is unable to make payment on time to the Contractors, then it will causing the Contractors do not have sufficient cash flow to fund the project.

Subcontractor or supplier bankruptcy

In case of the bankruptcy of the subcontractors or suppliers, the Contractors are requiring to hire another subcontractors or suppliers to take over the job. Thus, it may cause delays, cost overruns for the project.

2. 2 The importance of managing risk in tender stage

This chapter discussed the various reasons for the Contractor to managing the risk in the early stage of the project which at the tender stage and the consequences of the risks that against the Contractors.

2. 2. 1 Why should the risk be managed at the tender stage

According to Boyce (2003, p. 6), during the tender stage, a risk management should be undertaken in order to look at the potential problem on preparing an attractive bid on time, to winning the project, and to consider whether or not the project can be completed successfully. By providing the risk management process during the tender stage, the potential risk and problem can be identified and forecasted. Thus, a mitigation risk plan can be conducted to avoid and reduce arise during the construction stage.

A risk management process has to provide at the tender stage which when there is still has a possibility for fundamental changes of any decision (Anna Klemetti, 2006, p. 24). To tender for a contract will costs a lot of money and therefore the Contractors cannot simply accept to bid a contract without consider of any risk factors and profit potential in the project (Cooke and Williams, 2004). Boussabaine and Richard (2004, p. 181) emphasized that, the Contractors has to bears and take on the risk that occur during the construction stage. Thus, this is important for the Contractors to aware of all the construction risks that faced by him before the contract is being signed.

The main objectives of the construction project will likely to be influence by the construction risk (Smith et al., 2006, p. 2). The risks will cause the Contractors failure to keep within the cost budget, failure to complete the work within the completion date and failure to achieve the quality requirement of work (Flanagan and Norman, 1993, p. 8). As a result of this, the Contractors need to recognize the risk involved in the project and manage the risks at tender stage in order to ensure the objectives of the project are achieved over the contract period.

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Moreover, the Contractors have to make the right decision on whether or not to tender the project. Once the contract was signed, the Contractors have to bear for all risk that involved the project until the project is completed (Sayers, 1997, p. 1). The Contractors will face two risks during they tender for the project which are the risk of losing the project and the risk of winning the project (Boyce, 2003, p. 9). Once the Contractors have winning the project, the Contractors have started to perform the contract. In case of awarded a project that is difficult to be completed or managed, it may cause the Contractors suffer for losing their financial or reputation (Boyce, 2003, p. 9). According to Smith et al. (2006, p. 94), the risk management process can help the Contractors to concern on the decision of to or not to bid for the project. Consequently, the decision that make by the Contractors are very important due to the risks may cause the Contractors to lose money or become bankrupt.

During preparation of the tender price, the risk will influence the accuracy of the tender sum. The estimating risk can cause the Contractors to lose money or become bankrupt in case of the tender price was pricing wrong. The risk has the capacity of eroding profit and moving the project from a profit making into a loss-making venture. A Contractor can make a profit or loss at the end of the project is depending in how accurately the risks have been assessed.

Smith et al. (2006, p. 2) mentioned that, the risk management provides a better reviewing, understood, consideration over the project issues. To continues with Smith et al. (2006, p. 94), a lack of understanding the risk

may cause the Contractors pricing the tender price wrongly and as a result of this the additional cost will required to pay by the Contractors.

Smith et al. (2006, p. 193) suggested that, the risk management is used in the project due to it provide the following benefits:-

To assist Contractors to aware of the risk that involved in the project and impact of the risks. Thus, the Contractors can focus on minimizing the risk or try to allocate risks to the other parties.

To assist the Contractors to provide better decision over the potential risks or problem.

To provides a better understanding of the risks or problem.

To provide a better understanding over the project detail. This may assists Contractors to provide the realistic plan in term of programme schedule and cost estimate.

To gives knowledge of the risk in projects. This may allow assessment of contingencies that actually reflect the risks and also tend to discourage the acceptance of financially unsound project.

To provide the better management over the major risks that involved in the project.

According to Burtonshaw-Gunn (2009, p. 21), the risk management can assist the Contractor on the following:-

To plan and taken necessary action to reduce the risk before the risk has been occur and assist the Co