PROJECT RISK FACTORS : CASE STUDY OF MINISTRY OF EDUCATION PROJECTS

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ABSTRACT

Risks are inherent in any projects. A major criticism of the Ministry of Education (MOE) projects undertaken by the Public Works Department (PWD) is the growing rate of delays and cost overrun in project delivery. As reports under the JKR Project Information System, (SKALA JKR), as of September 2008 there are three hundred and fifty nine (359) MOE projects were granted extension of time (EOT) and twenty three (23) projects were not completed in a timely manner due to the poor risk anticipation. The aim of this study is to investigate risk factors in building construction projects belonging to MOE. In order to achieve this aim, three objectives have been outlined in this study; to establish risk factors in building project belonging to MOE, to identify the levels of risk of each risk factor from the contractors' perspective and to identify the risk treatment for each risk factor from the contractors' perspective. Postal questionnaire surveys were used as the main data collection method. From the comprehensive assessment of the likelihood of occurrence and their impacts, this study identifies ten major risk factors where "affordable material is more expensive than presented in bills of quantity (BQ)" factor was found to have significant impact on the project during its life cycle. This study also found that each risk factor can be treated by reducing its impact if the risk occurs. Treatment includes contingency planning that should address significant risk areas through some form of tactical response. The adoption of a risk management technique for building projects belonging to the MOE is critical to ensure the successfulness of the future project implementation.

ABSTRAK

Risiko adalah merupakan perkara biasa di dalam mana-mana projek. Kritikan yang hebat terhadap projek-projek Kementerian Pelajaran Malaysia (KPM) yang dilaksanakan oleh Jabatan Kerja Raya (JKR) adalah disebabkan oleh peningkatan kadar kelewatan dan peningkatan kos di dalam penyerahan projek. Sepertimana laporan Sistem Maklumat Projek JKR (SKALA JKR) sehingga September 2008, tiga ratus lima puluh sembilan (359) projek KPM telah diberikan lanjutan masa dan dua puluh tiga (23) projek tidak dapat disiapkan mengikut masa yang ditetapkan disebabkan oleh ramalan risiko yang lemah. Matlamat kajian ini adalah untuk menyiasat faktor-faktor risiko di dalam projek pembinaan bangunan milik KPM. Bagi mencapai matlamat tersebut, tiga objektif telah dikenalpasti iaitu menghasilkan faktor risiko di dalam projek pembinaan bangunan milik KPM, mengenalpasti tahap risiko bagi setiap faktor risiko berdasarkan perspektif kontraktor dan mengenalpasti rawatan risiko bagi setiap faktor risiko berdasarkan perspektif kontraktor. Tinjauan soal selidik telah digunakan sebagai kaedah pengumpulan data utama. Penilaian secara keseluruhan terhadap kebarangkalian berlakunya risiko dan kesan yang mungkin berlaku, kajian ini telah mengenalpasti sepuluh faktor risiko yang utama dimana faktor “bahan yang mampu dibeli adalah lebih mahal daripada yang dinyatakan di dalam senarai kuantiti (BQ)” didapati mempunyai kesan yang sangat tinggi terhadap projek sepanjang kitaran hayatnya. Kajian ini juga mendapati setiap faktor risiko boleh dirawat dengan mengurangkan kesannya sekiranya risiko berlaku. Rawatan tersebut merangkumi perancangan kontigensi yang perlu ditekankan terhadap risiko yang tinggi melalui beberapa penilaian tindak balas. Penggunaan kaedah pengurusan risiko untuk projek-rojek bangunan milik KPM adalah kritikal bagi memastikan kejayaan pelaksanan projek di masa akan datang.

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CHAPTER 1

INTRODUCTION

1.1 Introduction

The construction industry has a bad reputation in coping risk which is depending on the degree of project difficulty. Risk analysis is either ignored or done by simply adding contingencies in a contract. As a result many projects fail to meet the expected deadlines, cost targets and quality standards thus loss to both contractors and clients.

Risk by its definition is the implication of existence of significant uncertainty about the level of project performance achievable (Chris and Stephen, 1997). A source of risk is any factor that can affect project performance, and risk arises when this effect is both uncertain and significant in its impact on project performance. The definition of project objectives and performance criteria has a fundamental influence on the level of project risk.

Risk will exist and should be assessed and reduced to acceptable levels. There are different types of risk at different stages of project development. Typical risk areas include client changes due to business predictions or user requirements, subcontractor default, technical failure, labour shortages, inclement weather, critical task sequences, tight deadlines, resource limitations, complex co-ordination requirements and unfamiliar tasks. Peter (2005) added that external political, economic, social, technology issues can also affect current projects which are not covered under insurance.

Construction of a building project implies considerable risks. Risk assessment during the construction period is an important tool for the construction management giving part of the basis for mitigation actions against delays in production. Application of risk management techniques can significantly improve the investment performance of construction projects (Flanagan and Norman, 1993). According to Godfrey (1996), systematic risk management will helps to:

a) identify, assess, and rank risks, making the risk explicit;
b) focus on the major risks of the project;
c) make informed decision on the provision for adversity;
d) minimize potential damage should the worst happen;
e) control the uncertain aspects of construction projects;
f) clarify and formalize the company's role and the roles of others in the risk management process;
g) identify the opportunities to enhance project performance.

Interest in the management of risk, has led to the development of best practices, tools and techniques thus will assist the construction player maximizing the value they

gain from investment in project while not exposing themselves to unacceptable levels of risk.

1.2 Background of the Study

A variety of study in risk management has been studied and introduced in literature review. The purpose of developing risk management technique is to add value to project delivery. Thus there has been an increase in research aimed at investigating risk in construction industry.

Majid and McCaffer (1998) identified the factor of shortage of material, poor quality of material, poor procurement of material, late delivery of material, and unreliable suppliers that contribute to causes of delays. Chan and Kumaraswamy (1996) revealed that factors shortage of material and poor procurement of material as a critical risk factors.

Creedy (2005) found that the design or project scope change was the most important factor identified in cost over run Reyers and Mansfield (2001) concluded that works often cannot be accurately predetermined in terms of specification, extent, duration or cost in conservation project. Chen (2004) proposed 15 risks concerned with project cost and divided them into three groups: resources factors, management factors and parent factors. Zou (2005) concluded that 20 key risks were highlighted on a comprehensive assessment of their likelihood of occurrence and level of impacts on project objectives. Tight project schedule was found to have significant impact on all

five aspects while the rest risks can significantly influence at least one aspect of project objective.

1.3 Problem Statement

Construction industry will be risky for a large number of reasons. Differences categories of project risk and level of risk found on construction projects. Project risk if not well managed has significant effect on completion cost and time of construction project. Risk can be minimize, avoid or transfer when their factors are identified. Knowing the risk factor in a construction project would help avoiding the same in future.

In PWD most of MOE projects, are awarded on a competitive basis using the traditional approach. MOE projects were prepared based on a lump sump contract with JKR 203 Condition of Contract. This is because, preparation the document tender is a very time consuming job.

A major criticism of Ministry of Education (MOE) projects under the Public Work Department (PWD) is the growing rate of delays and cost overrun in project delivery. JKR Project Information System (SKALA) reported that as of September 2008 three hundred fifty nine (359) MOE projects were given extension of times (EOT) and twenty three (23) projects were not completed in a timely manner due to poor of risk anticipation.

At the moment, PWD has no specific methodology to deal with risk in construction projects. Construction risk of government projects under the PWD generally has not been well researched. In particular, risk in construction is poorly understood and very little researches have been directed towards the need in PWD. As a result, unnecessary delays turn to a profitable project to be financially undertaking and client has become dissatisfied with the performance and level of service they are receiving. These risks can be substantially mitigated if they are properly identified and addressed accordingly. The lack of risk management in PWD is the motives of this study particularly in projects belonging to MOE, since the MOE received the biggest budget allocation in the Ninth Malaysia Plan (9MP).

1.4 Aim and Objective

The aim of this study is to investigate risks factors in building construction projects belonging to MOE. In order to achieve this aim, three objectives have been outlined:

a) To establish risks factor in building projects belong to MOE.
b) To identify the level of risk for each risk factor from the contractors perspective.
c) To identify risk control or treatment for each risk factor from the contractors perspective.

1.5 Scope

The study focused on MOE projects in Johor. The respondents to the questionnaire survey were contractors that are registered under the class E, D, C and B.

1.6 Methodology

The main research methodology was through questionnaire survey and series of discussion. The literature review was carried out to provide the background information of risk factors particularly in MOE projects. From the literature review, the issues relevance for this study were highlighted and identified. Figure 1.1 depicted the research methodology being using in this study.

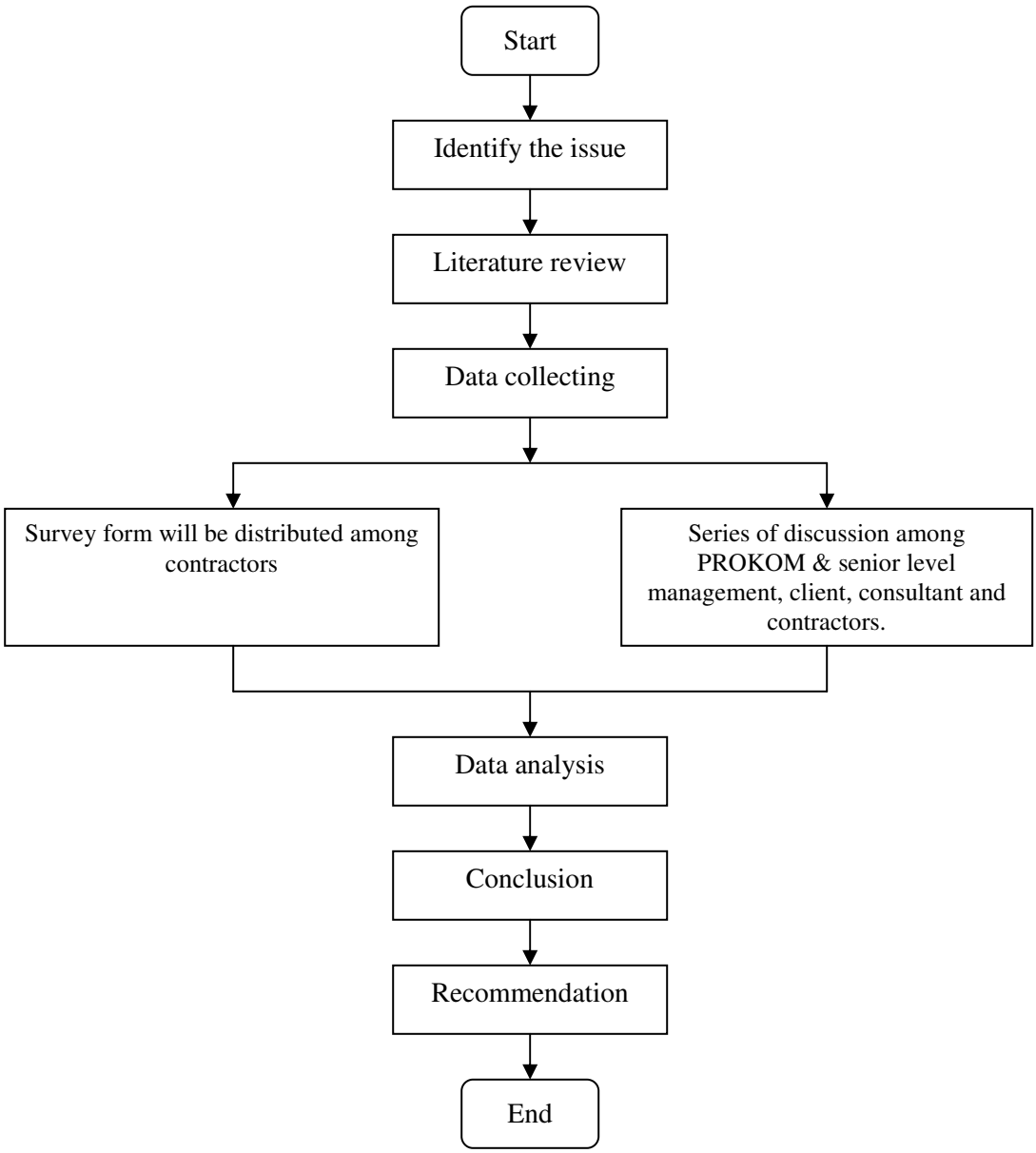

Figure 1.1: Research methodology flow chart

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