# A COMPARATIVE STUDY OF CONSTRUCTION PROJECT DELAYS IN JOHOR AND SABAH REGION

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## ABSTRACT

A timely completion of construction project is a major criterion of project success. Failure to complete the project on time will ultimately results in delay. The need to control the causes of delays during the construction process comes out when the number of delay project has been increase from time to time. Hence, it is essential to identify the causes of this problem from the early stage of construction project. The objectives of this study are to study the causes of delay in term of frequency occurrence and severity effect, and finally to identify the methods available to minimize construction project delays. A questionnaire survey was conducted to identify the significant causes of delay in order to avoid or minimize their impact on construction project. The perspective of contractors, consultants and client has been analyzed and ranked based on Relative Important Index (RII). A comparison of frequency occurrence and severity effect on the delay causes was done between Johor and Sabah. The study established that there were unlike results on the pattern of significant delays causes in both regions. Respondents in Johor believe that 'contractor's financial problem', 'poor subcontractor performance' and 'shortage of manpower' are the major causes of delay in construction project. Meanwhile, 'poor site management and supervision', 'slowness of client decision making' and 'slow payment of completed work' are the major concern from the respondents' point of view in Sabah. Finally, appropriate project management practices are thus identified to curb the significant causes of delays in construction projects.

# ABSTRAK

Penyiapan projek pembinaan yang mengikut masa adalah kriteria penting dalam menentukan kejayaan sesebuah projek. Kegagalan menyiapkan projek mengikut masa akan mengakibatkan kelewatan dalam projek pembinaan. Keperluan untuk mengawal punca-punca kelewatan semasa proses pembinaan timbul apabila jumlah projek-projek yang mengalami kelewatan telah meningkat dari semasa ke semasa. Oleh itu, ianya penting untuk mengenalpasti punca-punca masalah ini pada permulaan projek pembinaan. Objektif kajian ini adalah untuk mengkaji punca-punca kelewatan berdasarkan kekerapan dan tahap kesannya, dan akhir sekali untuk mengenalpasti kaedah mengurangkan kelewatan dalam projek pembinaan. Kajian mengunakan borang soal selidik telah dijalankan untuk mengenalpasti punca-punca utama kelewatan dalam usaha mengurangkan impak negatif terhadap projek pembinaan. Perspektif kontraktor, konsultan dan klien telah dianalisis dan diranking berdasarkan *Relative Important Index* (RII). Perbandingan di antara kekerapan dan tahap kesan terhadap punca-punca kelewatan projek telah dilakukan di antara Johor dan Sabah. Keputusan kajian menunjukkan terdapat perbezaan pada punca-punca penting kelewatan projek untuk kedua-dua negeri. Responden di Johor percaya bahawa ‘masalah kewangan kontraktor’, ‘prestasi subkontraktor yang rendah’ dan ‘kekurangan tenaga kerja’ merupakan punca-punca utama kelewatan dalam projek pembinaan. Manakala, ‘penyeliaan dan pengurusan tapak yang lemah’, ‘lambat membuat keputusan’ dan ‘lambat membuat pembayaran terhadap kerja yang siap’ adalah punca-punca yang menjadi perhatian utama dari pandangan responden di Sabah. Akhir sekali, amalan pengurusan projek yang sesuai telah dikenalpasti untuk mengekang punca-punca kelewatan projek ini.

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# CHAPTER 1

# INTRODUCTION

## 1.1 Introduction

Many problems may arise during construction project implementation; one main concern is delay. Delay is the time overrun either beyond completion date specified in a contract, or beyond the date that the parties agreed upon for delivery of a project (Assaf and Al-Hejji, 2006). There are many reasons that cause delays. According to Ogunlana (2008), although the principle reasons for delays are comparable across developing countries, several factors pertaining to local industry, social-economic, cultural issues and project characteristics also contribute to delays. Delays may occur as a result of the actions or inaction on the part of owner, contractor, subcontractors, consultants or the government. In addition, delays are always interrelated which led to the more complicated situation.

Delays in construction projects are considered one of the most common problems causing a multitude of negative effects on the project and its participating parties. Along with delay, the frequently faced consequences are project failure, reduction of profit margin, and loss of belief of citizen in government funded projects, etc. When delays do

occur, they are either accelerated or have their duration extended beyond the scheduled completion date. These are not without some cost consequences. Delays also give rise to disruption of work and loss of productivity, late completion of project increased time related costs, third party claims, abandonment and termination of contract (Abdul-Rahman H., 2006).

In conventional approach, this extra cost is included a percentage of the project cost as contingency in the pre-contract budget (Aibinu and Jagboro, 2002). Akinsola (1996) cited common practice allow a percentage of project cost as a contingency allowance in the contract price and this allowance is generally based on judgment.

There is a room for improvement in present practices for keeping track of delays. This research is carried out to study the causes and the severity effects on the delay causes arising during construction phase of projects. In addition, the result of this research would lead to recommendations aimed at reducing the impact of delay. If construction delays can be avoided or mitigated, there could be substantial financial savings on projects.

## 1.2 Problem Statement

Malaysia construction sector forms a high percentage of the economy contract (Abdul-Rahman H. *et al*, 2006). In year 2008, the construction sector grew 2.1% from the total of Gross Domestic Product (GDP), emanated mainly from the civil engineering sub-sector (BNM, 2009). GDP by state showed that the state economic structure was varied and unique.

Johor, for instance, is known as one of the developed state in Malaysia and among the three main urban centers on the Peninsular Malaysia. It is a main contributor of the national GDP in the country after Selangor and WP Kuala Lumpur (Department of Statistics Malaysia, 2009). With a population of approximately 500,000 in the city, it is an important industrial, tourism and commercial hub for Southern Malaysia and is part of Southeast Asia's most populous urban areas. Tourism is a significant contributor to the state's economy, as it receives 60% of the country's annual 16 million foreign tourists via its bridges and road links to Singapore. Johor is expected to be the top economic contributor to the country particularly after the completion of Iskandar Malaysia (The Star, 2008).

Meanwhile, Sabah is the second largest of the 14 states in Malaysia with population of 3.2 million peoples (Sabah Tourism Board, 2008). It is strategically located in the center of BIMP, stands of Brunei, Indonesia, Malaysia, Philippines, largest regional grouping and spanning territories of four ASEAN Countries. Sabah economics is open and is subject to the vagaries of exogenous factor, with an increasingly globalize and rapidly changing world economy. The buoyant economic activities at manufacturing services have been identified as the main growth sectors in the state. Sabah was also known as the major contributor in agriculture sector with 21.0% of GDP (Department of Statistics Malaysia, 2009). Other main driver of its economy was the construction sector particularly in both commercial and residential properties (Sabah Budget Speech, 2009). In year 2008, Malaysian Federal Government have allocated about RM2.37 billion to the state for Sabah Development Corridor (SDC) projects. SDC is believed as a commitment from the government to boost up the development and economy of Sabah to a renowned level (Utusan Malaysia, Aug 2008).

Despite of their developments, delay becomes a problem that associates in the construction project. The need to control the factors of delays during the construction process comes out when the number of delays project have been increase from time to time. Malaysian Treasury Secretary-general, Dr Wan Abdul Aziz stated that projects with 30% or three months' behind schedule are categorized as 'sick project' (The Star, 2007). When a delay can no longer be absorbed by the client, it will lead in the project being abandoned. According to numbers released by Ministry of Housing and Local Government, about 115 abandoned housing projects are recorded since 1990 until June 2008 (Ministry of Housing and Local Government, 2008).

In Sabah, the most notable delay projects include the Kota Kinabalu International Airport (KKIA) expansion project, road project from Kalabakan to Sapulut, Kinarut PGA project and Karamunsing flyover (Daily Express, 2007). Similarly, in Johor, about 23 abandoned housing projects have been recorded until 30 June 2008 (Ministry of Housing and Local Government, 2008). This record is excluded other types of project, for example school building and infrastructure projects. In fact, the total number reported by the Ministry also does not include projects undertaken by independent contractors, cooperatives and others who are not under the purview of Housing Development Act (Control and Licensing) 1966 (Act 118) (Bernama, 2008). If these unrecorded projects are taken into considered, the actual figure of delays must be enormous.

Regarding these problems, Malaysia government has acknowledged the construction delays and cost overruns problems as the big headache, especially with government-related funded projects. Minister of Public Work Department, Datuk Shaziman Abu Mansor, cited about RM200 million have been provide for the construction industry to revive most of abandoned government projects under Economic Stimulus Package (Utusan Malaysia, May 2009). This showed that the Government always takes a cognizance of the important role of the construction sector to stimulate

domestic economic activities and in enhancing economic growth in view of its linkages to construction-related industries.

Nevertheless, with less effort to minimize delays in construction project, it is possible for the construction industry performance become lower when compare to other industries. This will show that construction industry is too dependent to the government in order to settle down the impact of delays issue such as abandoned projects. Additionally, more delays on construction projects are expected to be increased due to the unstable economic (Bernama, Nov 2008). This was reinforced by Quarterly Bulletin which reported that there has significant external demand deteriorated following the deepening recession in several advanced economies as well as slower growth in the regional economic (Quarterly Bulletin, 2009).

Chang (2002) suggested that identifying factors is usually the first step when addressing a problem and then corrective actions can be taken. Hence, it is essential to identify the causes of this problem in early stages of construction project. This research will diagnose the main causes and effects of delays. The researcher will make a comparison between two regions according to the scope. This is because the principle reasons for delays may diverse at different places (Ogunlana and Prokuntong 2008).

Subsequently, researcher will determine the ways to minimize project delays from the perspective of construction industry players. Based on the findings, researcher can generate the appropriate recommendations aimed at reducing the impact of delays. It also believed that the study would clarify and thus create an awareness of the extent to which delays can adversely affect project delivery.

## 1.3 Aims and Objectives

The aim of this research are to study and evaluate issues related to the major causes of construction project delays in Sabah and Johor region through a survey. In achieving this aim, it is necessary to thoroughly review the existing literature and research's findings. Therefore, the objectives of this study are as follows:

i. To study the causes of delays in term of degree of occurrence and severity of effects
ii. To compare the significant causes of delays in Johor and Sabah
iii. To suggest the methods of minimizing project delays.

## 1.4 Scope of the Research

The research will be focused on the following matter:

i. This research was comprised in Johor and Sabah region.
ii. The group of respondents for this research involves client, consultant and contractor companies that registered with Construction Industrial Development Board (CIDB).

## 1.5 Significant of the Research

There are several valuable benefits expected by implementing this study. The significance of establishing the issues related to the construction project delays was to provide a greater insight and understanding on the causes of delays particularly among the main project players: contractors, client and consultants. This can be achieved by applying theoretical concepts discussed in many literatures into practice in real projects. It is hoped that these findings will guide efforts to improve the performance of the construction industry and will be useful to the construction players. Therefore, these findings might encourage the practitioner to focus on delay problem that might have existed in their present or future projects. Other than that, this study is expected to provide a better ways and methods in delivering construction projects by minimize the major causes of delays.

## 1.6 Research Methodology

In achieving these objectives, a research methodology is required. Figure 1.1 highlights the critical stages of conducting this study. This figure comprises four essential stages of conducting the study which includes the following:

- Literature review
- Main survey
- Analysis Data
- Conclusion

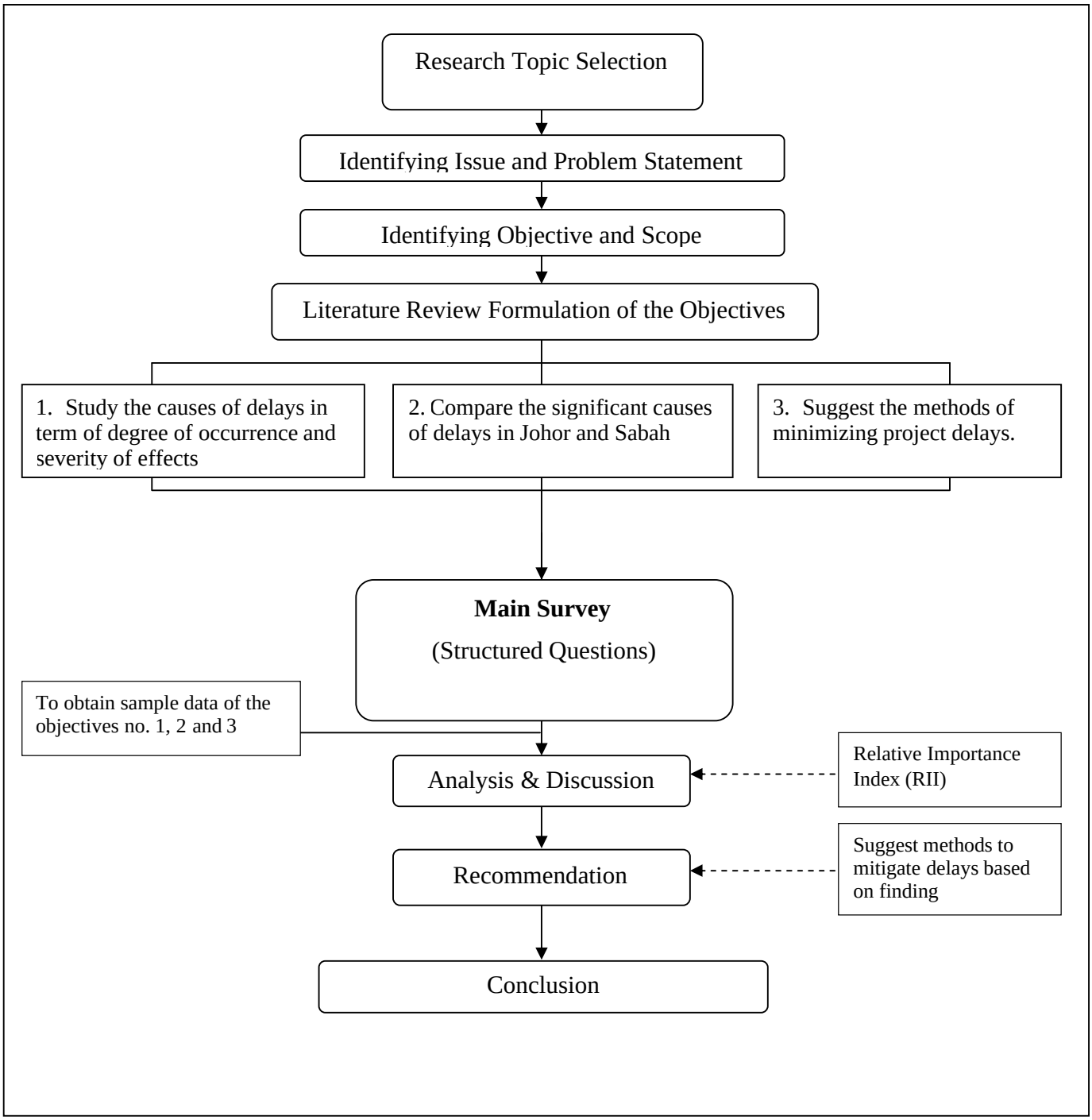


**Figure 1.1**: Research Methodology

This research will be adopted field survey methodology to uncover factors influencing on delay arising during construction stage. To identify the delay factors in construction market, a comprehensive literature review was conducted as to identify the essential information such as the main causes and effects of delay to the projects. This useful information will be included in the preparation of the main survey questionnaire. The technical materials researched include: technical papers, articles, conference proceedings, the internet, and leading construction management and engineering journals.

After that, main survey questionnaires are prepared. The designed questionnaire will be distributed to three principal construction parties namely; owner, consultant and contractor. Upon the completion of the data analysis, discussion of these findings, conclusions and recommendations will be presented.

## 1.6 Chapters Organization

The followings are the summary for each chapter on this research project paper. This project paper organized into six chapters which can be summarized as follow:

a) Chapter 1: Introduction

   This chapter presents the background and general information which comprises of introduction, issues and problem statements, research objectives, research scopes, research significance, research methodology and chapters organization.

b) Chapter 2: Concept and Causes of Construction Delays

From the available literature, this chapter composed an overview of the definition and various types of delay encountered in a project. It also includes the overall delays concept along with the causes and further classification of delays, responsibilities that the parties have in a delay, procedure taken when delays and the documentation of delays.

c) Chapter 3: Effect and Mitigation of Delays

This chapter reviews the effects of delays from the available literature. In addition, it also contains a section that discusses the methods on minimizing delays in construction project which recommended by previous researchers.

d) Chapter 4: Research Methodology

This chapter give an overall view of research methodology for the research and includes the method of data collection and questionnaire structure

e) Chapter 5: Data Collection and Preliminaries Analysis

This chapter is presents on the data collected and the preliminaries analysis on several data carried out.

f) Chapter 6: Analysis and Findings

This chapter focuses on analyzing collected data and discussing the findings. It contains the analysis of the information gathered through the questionnaire survey, identifies the critical causes of delay based on the chance of occurrence. Various suitable techniques and methodologies are used in analyzing the data gathered appropriate with the information needed and the types of data collected.

Analysis and discussion in this chapter is carried out with regards to fulfilling the objectives of the research.

g) Chapter 7: Conclusion and Recommendation

This chapter is provides the conclusions of the research. There are also several recommendations discussed in this chapter.

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