

**TIME AND COST OVERRUN OF  
CONSTRUCTION PROJECTS IN MALAYSIA**

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This project report is dedicated to my family for their endless support  
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## ABSTRACT

Time and cost overruns is one of most important problems at construction management field. Delays can be minimized only when their causes are recognized. Cost management is a main stem of construction management and the most important tool sought by contractors to maintain profit which is the main goal of every project. This research reviews all the factors that influence on cost and time overrun. Literatures of previous studies are classified into three main parts which are: (1) factors influencing time overruns of project; (2) factors influencing cost overrun that most of them are same in different countries and (3) analyze obstacles in implementing the Last Planner System as a solution for the end of project overruns. The aim of this research is to evaluate and analyze the factors contributing to time and cost overrun in Malaysian construction industry and also evaluation the obstacles of implementation of lean construction, the emergence of the lean construction concept is seen as a current approach that can be used to produce best practices because it was viewed as an effort to bring construction industry towards a more optimum productivity level with the efficient usage of resources as well as to produce the most value. The objectives of the study were achieved through a valid questionnaire survey and an interview that are obtained from some construction company in Malaysia that are directly involved in the construction industry. The study recommended owners, contractors, and consultants to hold their responsibilities to avoid any time and cost overrun which could be achieved by good management of the project and finding new methods such as using Lean Construction in construction.

## **ABSTRAK**

Masa dan kos adalah salah satu masalah yang paling penting di bidang pengurusan pembinaan. Kelewatan boleh dikurangkan hanya apabila puncanya diketahui. Pengurusan kos adalah satu bidang utama pengurusan pembinaan dan alat keperluan kontraktor untuk mengekalkan keuntungan yang merupakan matlamat utama setiap projek. Kajian ini mengkaji semua faktor yang mempengaruhi kos dan masa. Kesusasteraan kajian sebelumnya dikelaskan kepada tiga bahagian utama iaitu: (1) faktor-faktor yang mempengaruhi lebih masa projek; (2) kos faktor-faktor lain pada negara yang berbeza dan (3) analisis halangan dalam melaksanakan Perancang terakhir sistem sebagai penyelesaian. Tujuan kajian ini adalah untuk menilai dan menganalisis faktor-faktor yang menyumbang kepada masa dan kos dalam industri pembinaan di Malaysia in juga menilai halangan pelaksanaan pembinaan tanpa lebihan, kemunculan konsep pembinaan pantas dilihat sebagai pendekatan semasa yang boleh digunakan untuk menghasilkan amalan terbaik industri pembinaan ke arah tahap produktiviti yang lebih optimum dengan penggunaan sumber yang cekap serta untuk menghasilkan nilai yang paling. Objektif kajian telah dicapai melalui soal selidik dan temu bual yang diperolehi daripada beberapa syarikat pembinaan di Malaysia. Kajian memsyorkan pemilik, kontraktor dan perunding untuk memastikan tanggungjawab mereka untuk mengelakkan sebarang masa dan ditakluki kos boleh dicapai dengan pengurusan yang baik projek itu dan mencari kaedah baru seperti menggunakan Pembinaan Lean dalam pembinaan.

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## LIST OF ABBREVIATIONS

SPSS	-	Statistical Package for the Social Sciences
EPA	-	Environmental Protection Agency
TV	-	Time Variance
IMVP	-	International Motor Vehicle Program
TPS	-	Toyota Production System
WBS	-	Work Breakdown Structure
CCPM	-	Critical Chain Project Management
LPS	-	Last Planner System
WWP	-	Weekly Work Plan
PPC	-	Percent of Planned Complete
TQM	-	Total Quality Management

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## CHAPTER 1

### INTRODUCTION

#### 1.1. Introduction

Delay and cost overrun are important problems in the construction industry and have negative impacts on project success in terms of time, cost, quality and safety. To minimize these impacts, identifying the most significant causes of delay and cost overrun are vital.

Delays and cost overrun can be minimized only when their causes are recognized. The aim of this paper is to identify the main causes and consequences of delay and cost overrun in Malaysian construction projects. A questionnaire survey was conducted to solicit the causes and consequences of delay and cost overrun from consultants, owners, engineers and contractors' viewpoint.

Time and cost overruns occur in most construction projects, although, the magnitude of these delays and cost overruns varies considerably from project to project (Enshassi et al. 2009). According to Gkritza et al. (2008), cost overruns can be traced back to "root causes" that are often associated with the preliminary phases (project planning or design), that such root causes include poor estimation of quantities, design variations or errors, project schedule changes, scope changes,

unexpected site conditions, rising costs of materials and labor (largely due to inflation), and/or unforeseen events.

In construction industry one of the basic goals of practitioners is to achieve timely completion of projects within stipulated budget and required quality as each day of time overrun in the completion of any project has direct impact on the cost of project. In order to manage and control construction projects, there are various procurements strategies being adopted. Most popular strategies include traditional, management, integrated services and in-house teams (Ofori 1990).

In Malaysian, traditional lump sum system, design and build/turnkey system and Construction Project Management/Contract Management are commonly adopted in procurement strategies (CIMP 2007 and Rashid 2002). However, literature shows that in spite of adopting various management practices, construction projects in many countries are still facing problem of time overrun which needs very serious attention. Malaysian construction industry is also facing the same problem of time overrun. To avoid this issue, very first and most important step is to identify and understand the causes and factors responsible for that. Hence, this study was carried out to identify the major cause of time overrun in Malaysian construction industry.

The scope of this study was research to identify causes and consequences of delay and cost overrun in Malaysian construction project. The literature related the field of causes and consequences of delay and cost overrun in construction projects has been reviewed over the last decade.

## **1.2. Problem Statement**

Delays in project are very common in Malaysian construction industry. Most construction projects in Malaysia have delay and the projects may extend to the

double period of time allocated to the project and it causes to increase the cost of the project. It was found the predominant causes of delay are poor site management and supervision, delay in progress payment by clients, change orders by client during construction, ineffective planning and scheduling of project by contractor, slowness in decision making process by client, delays in producing design documents, poor contract management by consultant and problems with subcontractors. Cost overrun is another serious problem in Malaysian construction industry. This problem can be a result of bad planning, increasing the prices of materials and lack of using new technology.

### **1.3. Aim**

The aim of this study was research to identify causes and consequences of delay and cost overrun in Malaysian construction project. The literature related the field of causes and consequences of delay and cost overrun in construction projects has been reviewed over the last decade and also to analyze obstacles in implementing the Last Planner System as a solution for the end of project overruns

### **1.4. Objectives of the Research**

- To evaluate and analyze the factors contributing to time overruns.
- To evaluate and analyze the factors contributing to cost overruns.
- To analyze obstacles in implementing the Last Planner System as a solution for the end of project overruns

## **1.5. Research Methodology**

The methodology that is used in this research contains of six phases. The first one is to define the problems and establishment of the goals of the study to develop the research plan. The second phase of the research contains literature review of time and cost overrun and their factors that lead to them and also lean construction as a solution to end overruns. The third phase of the research contains two valid questionnaire surveys that one of them is obtained from some construction company in Malaysia and one of them is filled by project managers who are familiar with lean construction. The fourth phase of the research contains an interview with a project manager who is familiar with lean construction in Malaysia. The softwares that have been used in this research are: (1) SPSS, (2) Google docs, (3) Microsoft Excel. The fifth phase contains analyzing the data that is obtained from the third and fourth phase. And the last phase contains conclusions from the whole research and recommendations to reduce time and cost overrun based on questionnaires.

The third objective is to identify the various barriers that influence the success of Last Planner system. The researcher extracted many of barriers to lean production from previous studies and under different management concepts and after interviewing with a project manager who is familiar with Last Planner system, finally the 16 identified barriers were then reduced to 8. The data on strength of barriers is collected via field survey. A 0 to 4 Likert scale was used to assess the strength of the influence of each barrier to lean production. “Not strong” was represented by 0 and “extremely strong” was represented by 4.



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