IMPACT OF THE COST OVERRUN FACTORS ON THE PROJECT DELAYS IN CONSTRUCTION INDUSTRY

NOOR ELINAH BINTI SAILIN

B. ENG(HONS.) CIVIL ENGINEERING

UNIVERSITI MALAYSIA PAHANG

SUPERVISOR'S DECLARATION

I hereby declare that I have checked this thesis/project and in my opinion, this thesis/project is adequate in terms of scope and quality for the award of the Bachelor Degree of Civil Engineering

_____

(Supervisor's Signature)

Full Name : EN. MOHAMMAD SYAMSYUL HAIRI BIN SAAD

Position :

Date :

STUDENT'S DECLARATION

I hereby declare that the work in this thesis is based on my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously or concurrently submitted for any other degree at Universiti Malaysia Pahang or any other institutions.

_____

(Student's Signature)

Full Name : NOOR ELINAH BINTI SAILIN

ID Number : AA14107

Date :

IMPACT OF THE COST OVERRUN FACTORS ON THE PROJECT DELAYS IN CONSTRUCTION INDUSTRY

NOOR ELINAH BINTI SAILIN

Thesis submitted in fulfillment of the requirements
for the award of the
Bachelor Degree in Civil Engineering

Faculty of Civil Engineering and Earth Resources

UNIVERSITI MALAYSIA PAHANG

DEC 2018

ACKNOWLEDGEMENTS

"In the name of Allah, the most gracious, the most compassionate"

With the greatest blessing of Allah, finally I have accomplished this final year project as a requirement to graduate and acquire in a Bachelor of Civil Engineering from Universiti Malaysia Pahang.

I would like to take this golden opportunity to express my sincere gratitude to my supervisor, Mr. Mohammad Syamsyul Hairi bin Saad. His ideas, invaluable guidance, continuous support and constant support in making this research possible and improved my piece of work. I really appreciate her consistent support from the first day of my thesis progress and I also sincerely thanks for the time spent correcting my many mistakes.

My sincere thanks to my lovely parents, Mr Sailin bin Jun and Mrs Newah binti Jaim and also my beloved sibling. Their continuous moral support and pure blessing have brought me all this way.

In addition, I would also like to thanks all my beloved friends especially Nur Munirah binti Anuar who have provided directly and indirectly assistance to this study.

Last but not least, I would like to thank all of them who were with me throughout this project. I sincerely appreciate this valuable favors from all of you.

ABSTRAK

Kelewatan dan melebihi kos merupakan masalah kerap dalam industri pembinaan banyak negara maju dan membangun. Penjimatan kos dan persembahan masa biasanya penting kepada semua pihak yang terlibat dalam projek pembinaan yang pemilik, kontraktor, dan subkontraktor. Penyebab utama pertikaian dalam projek pembinaan melibatkan kelewatan dan kegagalan untuk menyelesaikan kerja dalam kos dan kerangka waktu tertentu. Tujuan kajian ini adalah untuk menilai faktor-faktor yang menjurus kepada penambahbaikan masa (kelewatan) dan overruns kos dalam projek pembinaan di Malaysia. Sejumlah 36 faktor telah dikenal pasti dari kajian terdahulu. Pengumpulan data telah dijalankan menggunakan kaji selidik soal selidik berstruktur. 50 responden daripada industri pembinaan di Malaysia mengambil bahagian dalam soal selidik tinjauan. Terdapat dua pemboleh ubah dalam kajian ini yang merupakan pembolehubah bebas (faktor-faktor yang menelan kos) dan pembolehubah bergantung (kelewatan Projek). Hasilnya menunjukkan bahawa semua faktor yang menelan kos mempunyai hubungan positif dengan kelewatan projek. Mencari dalam kajian ini memberi manfaat kepada majikan untuk memahami betapa pentingnya faktor kos yang terlalu besar untuk kelewatan projek, serta untuk mengelakkan berlakunya daripada berlaku dalam industri pembinaan.

ABSTRACT

Delays and cost overruns are evidently frequent problems in the construction industries of many developed and developing countries. Cost saving and time performances are usually essential to all parties who are involved in a construction project that is owner, contractor, and subcontractor. The main causes of disputes in construction projects involve delay and failure to complete the work in the specified cost and time frame. The purpose of this study is to assess factors leading to time overruns (delays) and cost overruns in construction projects in the Malaysia. A total of 36 factors were identified from previous studies. The data collections were carried out using structured questionnaire survey. 50 respondents from the construction industry in Malaysia participated in the survey questionnaire. There are two variable in this study which are independent variables (Cost overrun factors) and dependent variable (Project delay).The results indicate that the all the cost overrun factors has a positive relationships with the project delay. Finding in this study is beneficial to employer to understand how important cost overruns factors to project delay, as well as to prevent recurrences from happening in construction industry.

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

LIST OF SYMBOLS

Ai	Constant expressing weight given to i
Xi	Variable that expressing the frequency of degree

LIST OF ABBREVIATIONS

SPSS	Software Statistical Package for Social Sciences

CHAPTER 1

INTRODUCTION

1.1 Introduction

The key success indicators of construction management system(s) include completing the project with cost and time, within the planned budget and duration, and within the required quality, safety, and environmental limits. These goals are interrelated where each of them is affecting and affected by the others. An accurate cost estimating and scheduling should be sought in order to meet the overall budget and time deadline of a project.

The inability to finish project within completion time and budget to be a long lasting worldwide problem and is worsening. Angelo and Reina (2005) mentioned that the cost overruns are a risky and crucial problem. They also state that the problems of cost overruns and project delay are become a trend in the worldwide and it is more happened in developing countries (Angelo & Reina, 2002). As in the developing country, the construction industry is continues growing, so the planning and budgeting problem in construction project definitely will happen. It is a common problem of a project is not to be completed on time and within the budget (Apolot, Alinaitwe, & Tindiwensi, 2011). Hence, it is important to determine the factors that contribute to the cost overruns, take action to prevent and reduce these issues in the future.

There are many sources of uncertainty in construction projects, which include the performance of construction parties, resources availability, environmental conditions, involvement of other parties, contractual relations, etc. As a result of these sources, construction projects may face problems that cause delay(s) in the project completion time.

Time contingency is used to guarantee the completion time of either an activity or a project. Due to the unique nature of construction projects, cost overrun and schedule overrun uncertainty are essential for true budget and scheduling, which should be flexible enough to accommodate changes without negatively affecting the overall cost and duration. It is also essential to allocate a contingency value to both cost and time.

There are situations where there could be delays in activities, whether they are within the critical path or not, which result in a delay in the overall project duration. These delays will consequently have a negative impact on the quality, budget, and might be safety of a project. Therefore, estimating cost and time contingencies are seen as a prime factor in achieving a successful construction project. Although several industrial sectors developed and used software for estimating time and cost contingencies in order to minimize delays and avoid being over budget, yet limited efforts are reported in the literature in the area of predicting time contingency in construction projects.

1.2 Problem Statement

In the construction industry, the aim of project control is to ensure that projects finish on time, within cost and achieve other project objectives. A success of any project can be assessed based on the performance of cost, time, quality and safety of the project (Memon, Rahman, Zainun, & Karim, 2014).

Poor time and cost performance are critical issues facing by today's construction industry in Malaysia, due to construction companies failed to achieve project objective in the targeted time and targeted cost (Enshassi, Al‧ Najjar, & Kumaraswamy, 2009).

The critical issues facing by Malaysia is due to the lack of concern by project manager in the construction issues; and there are less of studied on the impact of the cost overrun factors to the project delay, lack of updated information about how cost overrun factors can bring impacts to the project delay in different stages (Ibrahim, Roy, Ahmed, & Imtiaz, 2010).

The statements above can be concluded as both cost overrun and project delay are issues that are directly can lead a project to failure. If the problems are untreated, it

will bring unanticipated and unexpected impact to the company as well as the construction industry (Mohammed, 2010). Therefore, project manager and site contractor need pay serious attention to alleviate it (Memon, Rahman, Asmi, & Azis, 2012).

Thus, this study is attempted to highlight the factors of cost overruns in the construction industry, and investigate the impact of the factors of the project delay in the construction industry in Malaysia. Hence, it can help contractor and project manager to understand the importance of cost and time in a project, alleviate financial and time related issues in order to make the project successful.

REAL CASE PROJECT DELAYS IN CONSTRUCTION PROJECT

Table 1-1 Real case of project delays in construction project

Date	Construction Project	Location
30 November 2017	Mega projects	Bintulu, Serawak
03 February 2016	Project ”Rumah Keluarga Angkatan Tentera”	Kuala Lumpur

1.3 Objectives

There are three main objectives of this research:

I. To study the time delay factors and cost overrun factors in construction project.
II. To obtain the information about the impact of cost overrun on the project delays through questionnaire design.
III. To analyse the impact of time delay and cost overrun of the project.

REFERENCES

Abd El-Karim, M. S. B. A., Mosa El Nawawy, O. A., & Abdel-Alim, A. M. (2015). Identification and assessment of risk factors affecting construction projects. *HBRC Journal*, *13*(2), 202–216. https://doi.org/10.1016/j.hbrcj.2015.05.001

Apolot, R., Alinaitwe, H., & Tindiwensi, D. (2011). An Investigation into the Causes of Delay and Cost Overrun in Uganda's Public Sector Construction Projects. *Second International Conference …*, *18*(2), 305–312. Retrieved from http://mak.ac.ug/documents/Makfiles/aet2011/Apolot.pdf

Cantarelli, C. C., Flyvbjerg, B., van Wee, B., & Molin, E. J. E. (2010). Lock-in and its influence on the project performance of large-scale transportation infrastructure projects: Investigating the way in which lock-in can emerge and affect cost overruns. *Environment and Planning B: Planning and Design*, *37*(5), 792–807. https://doi.org/10.1068/b36017

Enshassi, A., Al Najjar, J., & Kumaraswamy, M. (2009). Delays and cost overruns in the construction projects in the Gaza Strip. *Journal of Financial Management of Property and Construction*, *14*(2), 126–151. https://doi.org/10.1108/13664380910977592

Ibrahim, A. R. Bin, Roy, M. H., Ahmed, Z., & Imtiaz, G. (2010). An investigation of the status of the Malaysian construction industry. *Benchmarking*, *17*(2), 294–308. https://doi.org/10.1002/fld.2309

Khan, R. A., Liew, M. S., & Ghazali, Z. Bin. (2014). Malaysian Construction Sector and Malaysia Vision 2020: Developed Nation Status. *Procedia - Social and Behavioral Sciences*, *109*, 507–513. https://doi.org/10.1016/j.sbspro.2013.12.498

Memon, A. H., Rahman, I. A., Asmi, A., & Azis, A. (2012). Time and Cost Perfomance in Costruction Projects in Southern and Cenrtal Time and Cost Perfomance in Costruction Projects in Southern and Cenrtal Regions of Penisular Malaysia, (May 2014), 52–57. https://doi.org/10.11591/ijaas.v1i1.537

Memon, A. H., Rahman, I. A., Zainun, N. Y., & Karim, A. T. A. (2014). Web-based Risk Assessment Technique for Time and Cost Overrun (WRATTCO) – A Framework. *Procedia - Social and Behavioral Sciences*, *129*, 178–185. https://doi.org/10.1016/j.sbspro.2014.03.664

Mohammed. (2010). ELEMENT OF COST OVERRUNS INVOLVED IN CONSTRUCTION PROJECT Mahdi Mohammed Abdullah Abkar.

Niazi, G. A., & Painting, N. (2017). Significant Factors Causing Cost Overruns in the Construction Industry in Afghanistan. *Procedia Engineering*, *182*, 510–517. https://doi.org/10.1016/j.proeng.2017.03.145

Olawale, Y. A., & Sun, M. (2010). Cost and time control of construction projects: Inhibiting factors and mitigating measures in practice. *Construction Management and Economics*, *28*(5), 509–526. https://doi.org/10.1080/01446191003674519

Ramanathan, C., Narayanan, S. P., & Idrus, A. B. (2012). Construction delays causing risks on time and cost - A critical review. *Australasian Journal of Construction Economics and Building*, *12*(1), 37–57. https://doi.org/10.5130/ajceb.v12i1.2330

Sambasivan, M., & Soon, Y. W. (2007). Causes and effects of delays in Malaysian construction industry. *International Journal of Project Management*, *25*(5), 517–526. https://doi.org/10.1016/j.ijproman.2006.11.007

UK Essays. (2013). Causes And Effects Of Delays in Projects, 1831–1837. Retrieved from https://www.ukessays.com/dissertation/examples/construction/causes-and-effects-of-delay-of-projects.php

Will, W., Take, I. T., Establish, T. O., Education, E., & All, F. O. R. (2008). March 2008. *Technology and Engineering Teacher*, (March).

Abdullah, M. R., Azis, A. A. A., & Rahman, I. A. (2011). Potential effects on large mara construction projects due to construction delay. International Journal of Integrated Engineering, 1(2), 53–62

Abdullah, M. R., Rahman, I. A., & Azis, A. A. A. (2010). Causes of delay in MARA management procurement construction projects. Journal of Surveying, Construction and Property, 1(1), 123–138.

Ali, A. S., & Kamaruzzaman, S. N. (2010). Cost performance for building construction projects in Klang Valley. Journal of Building Performance, 1(1), 110–118.

Al-Kharashi, A., & Skitmore, M. (2009). Causes of delays in Saudi Arabian public sector construction projects. Construction Management and Economics, 27(1), 3–23.

Doloi, H. (2013). Cost overruns and failure in project management-understanding the roles of key stakeholders in construction projects. Journal of Construction Engineering and Management, 139(3), 267–279.

Ejaz, N., Ali, I., & Tahir, M. (2013). Assessment of delays and cost overruns during construction projects in Pakistan.