



Faculty of Economics and Business

Factors Influencing Project Performance in Malaysian Construction Industry

Mark Anak Selat

Doctor of Business Administration

2024

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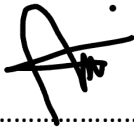
A dissertation submitted
in fulfilment of the requirement for the degree of
Doctor of Business Administration

Faculty of Economics and Business
UNIVERSITI MALAYSIA SARAWAK

2024

DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Malaysia Sarawak. Except where due acknowledgements have been made, the work is that of the author alone. The thesis has not been accepted for any degree and is not concurrently submitted in candidature of any other degree.



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Signature

Name: Mark Anak Selat

Matric No.: 20040033

Faculty of Economics and Business

Universiti Malaysia Sarawak

Date: 30th June 2024

ACKNOWLEDGEMENT

First and foremost, I would like to praise and thank God, the Almighty, who has granted countless blessing, knowledge, and opportunity to the writer, so that I have been finally able to accomplish the thesis.

I would like to show my greatest appreciation to my supervisor Associate Professor Dr. Kartinah Binti Ayupp for her continuous support, patience, availability, encouragement, guidance and feedback on my work. Her constructive guidance, valuable suggestions, opinions and invaluable comments were a source of great inspiration, which benefitted me immensely in completing this task.

My deepest gratitude goes to my beloved Parents and Parents in Law. They have been a constant source of inspiration, motivation and encouragement. I have no doubt that this achievement and many of the things I have achieved in life wouldn't have been possible without their love and support. Then to my wife, Fiona Beragai who provided me with unlimited support and encouragement to achieve my goal, and for my lovely son Ivan Rajit who have supported me by being patient and understanding throughout the journey.

I am profoundly grateful to Ir. Dr. Haji Abang Hatta Bin Abang Taha for being an exceptional mentor in both my career and my DBA journey and continually reminding me to adopt the *Infinite Game* mindset.

Last but not least, I want to thank Murphy Nyambong for making this DBA journey more fun and less lonely.

ABSTRACT

Success in a construction project is indicated by the performance in timeliness, cost, quality and stakeholder's satisfaction. Construction projects in Malaysia bears a high risk of being over budget and completed way past due. Thus, identifying the most influential factor towards a successful implementation of construction projects is crucial. Although a number of factors have been found to potentially influence the success of a construction project, the correlation between these aspects has not been extensively investigated. This research investigates the relationship between six (6) factors; top management support level, project management maturity, realistic schedule and budgeting, clear project goal definition, project team competency, and risk management. The results demonstrated the factors which has the most influence on Malaysian construction projects' success. Purposive and non-proportionate quota sampling was adopted to gather 224 samples from various project managers and leaders working in construction companies with CIDB G7 grade throughout Malaysia. To gather quantitative data, a questionnaire was developed by modifying previous research' questionnaires, and its validity and reliability were assessed using SmartPLS (SEM). The results show that defining clear goals, realistic scheduling and budgeting and project management maturity has the most impact towards project performance success in Malaysian construction industry. This study has made a significant theoretical contribution to the larger body of knowledge by establishing the most influence factors that contributed to project success. Furthermore, the outcome from this study shall contribute to construction companies, project management bodies, practicing project managers, and project analyst involved in the Malaysian construction industry.

Keywords: Project Management, Malaysia, Construction Industry, Project Success

Faktor-Faktor yang Mempengaruhi Prestasi Projek dalam Industri Pembinaan Malaysia

ABSTRAK

Kejayaan dalam projek pembinaan boleh diukur berdasarkan prestasi ketepatan waktu projek, kos, kualiti, dan kepuasan pihak berkepentingan. Projek pembinaan di Malaysia mempunyai risiko tinggi untuk melebihi bajet dan tempoh yang ditetapkan. Oleh itu, mengenal pasti faktor yang paling mempengaruhi kepada pelaksanaan projek pembinaan yang berjaya adalah penting. Walaupun beberapa faktor telah dikenal pasti, hubungan antara aspek-aspek ini belum dikaji secara mendalam. Kajian ini menilai hubungan enam (6) faktor iaitu; tahap sokongan pengurusan tinggi, kematangan pengurusan projek, jadual dan belanjawan yang realistik, definisi matlamat projek yang jelas, kecekapan pasukan projek, dan pengurusan risiko. Kajian ini mengenal pasti faktor-faktor utama yang mempengaruhi kejayaan projek pembinaan di Malaysia. Sebanyak 224 sampel diperoleh melalui pensampelan sasaran dan bukan berkadar dari pelbagai pengurus projek dan pemimpin yang bekerja di syarikat pembinaan dengan gred CIDB G7 di seluruh Malaysia. Buat kajian ini, satu soal selidik disediakan melalui modifikasi penyelidikan tersedia, dan kebolehpercayaan serta kebolehguamanannya dinilai menggunakan SmartPLS (SEM). Hasil kajian menunjukkan matlamat yang jelas, pengurusan risiko projek dan kematangan pengurusan projek mempunyai impak terbesar terhadap kejayaan prestasi projek dalam industri pembinaan Malaysia. Hasil kajian ini menyumbang kepada penambahan pemahaman terhadap faktor-faktor yang paling berpengaruh kepada kejayaan projek. Selain itu, kajian ini akan menyumbang kepada syarikat pembinaan, badan pengurusan projek, pengurus projek, dan penganalisa projek dalam industri pembinaan Malaysia.

Kata Kunci: Pengurusan Projek, Malaysia, Industri Pembinaan, Kejayaan Projek

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LIST OF ABBREVIATIONS

AM	Arithmetic Mean
AVE	Average Variance Extracted
CIDB	Construction Industry Development Board
CMV	Common Method Variance
CR	Composite Reliability
PLS-SEM	Partial Least Squares Structural Equation Modelling
SME	Small and Medium Enterprises
SPSS	Statistical Package for Social Sciences

CHAPTER 1

INTRODUCTION

1.1 Introduction

The aim of this research is to explore strategies that work and offer recommendations for enhancing the performance of construction projects in Malaysia. To establish a foundation for the subject, explanations and definitions of the key terms used in construction project managements is elaborated beforehand. The construction industry is, almost by definition, interdisciplinary and operating within a variety of frameworks as well as interacting closely with a diverse range of stakeholders, which includes architects, contractors, consultants, project sponsors/owners, or governmental organisations. In the construction industry, achieving successful project status has been deemed a difficult task. Failure of a project to meet its objectives usually results in a financial loss for all participating stakeholders. A failing project suffers from overruns in time and cost; this comes at a huge price to the stakeholders

In Malaysia, construction continues to play a pivotal role in advancing the country's infrastructure and modernization efforts. With an average annual growth rate of 7.2% from 1991 to 2020, the industry has witnessed substantial expansion, contributing an average yearly share of 3.9% to the nation's gross domestic product (GDP) (New Straits Times, 2022). According to the Department of Statistics Malaysia, the construction sector maintained its upward trajectory in the first quarter of 2023, registering a growth rate of 9.4% (DOSM, 2023). The notable contributions are attributed to civil engineering, specialized construction activities, and non-residential buildings. Forecasts suggest that the domestic construction sector is poised to grow by 6.1% this year, bolstered by improved

performances across all subsectors. This growth is primarily driven by increased demand for industrial buildings, propelled by enhanced private investment and robust domestic economic activities (New Straits Time, 2023).

The significance of the construction industry lies in its integral role in bolstering the economy, owing to its dynamic nature and interconnectedness with various sectors (Chia et al., 2014; Khan et al., 2014; Berawi et al., 2019). Moreover, the construction industry serves as the backbone for socio-economic infrastructure, facilitating industrial growth and providing essential amenities. These amenities include commercial and residential zones, transportation networks such as highways and railways, water reservoirs like dams, recreational areas such as playgrounds and stadiums, healthcare facilities, ports, airports, communication infrastructure, and power generation and distribution stations. Furthermore, in emerging nations, it lays the groundwork for crucial substructures aimed at elevating societal living standards (Chia et al., 2012; Razak Bin Ibrahim et al., 2010; Al-Shayea et al., 2019).

The Malaysian construction industry contributes greatly to the country's economy, but it has received negative publicity due to cost overruns, unrealistic schedules, accidents, poor workmanship, conflict among project joint members, and most definitely, the sore sight of an abandoned and unfinished private and public construction projects (Ting et. Al,2019). It is deemed common to see structures collapsing, roads cracking, bridges toppling, and mosquito infested abandoned buildings, reflecting the dire need of improvement especially in Malaysia's construction industry, which has left a negative impression in the minds of the public. There is an urgent need to prevent project failure, particularly due to poor project management practices. As more organisations rely on project structures and tools to ensure

project success, it is critical to identify factors that lead to better project management practices for sustainability and viability (Latoni & Gacia, 2014). In order to find areas that may influence the success of construction projects to finish within the quality, timeline, and funds allocated, factors affecting construction project performance have been examined in this study. The primary goal of this research is to identify the most significant factors that affect project performance success in the Malaysian construction sector. For professionals working in Malaysia's construction industry, the study's findings will be useful in pinpointing the essential elements of a successful project. This will therefore enable companies to concentrate their limited resources on the important driving elements that may raise the likelihood that projects will be completed on schedule, within budget, and with high quality.

1.2 Background of the Study

According to the Project Management Institute (PMI) (2017), a project is a brief endeavour that is performed with the goal of producing a unique product, service, or outcome. Project management is the use of knowledge, skills, tools, and procedures to achieve project criteria. A construction project team, or stakeholder, is, in the majority of the world's construction sectors, a cross-functional team composed of individuals from different departments collaborating to accomplish a particular and distinct aim. According to Moretti and Oscar (2014), the process of effectively initiating and completing construction activities has so sparked the interest of senior management and researchers. Three basic criteria generally govern every construction project: budget, schedule, and quality (PMI, 2017). These variables are related to one another in a way that means that if one changes, the others are likely to be impacted as well. For instance, if the timeline is shortened, it is typical for the budget to go up since more resources are needed to finish the same amount of work in

less time. Consequently, the product's scope or quality may be decreased to deliver it in a shorter amount of time within a similar budget if an increase in budget is not achievable (PMI, 2017). Therefore, the objectives of every construction project are to finish the project scope on schedule and within budget. Every construction project has to deal with the difficulty of keeping an eye on and managing potential hazards and changes.

The term "project management" refers to the expertise that is utilised to oversee and manage change as well as guide a cross-functional team. Project management, according to the PMI, is the application of knowledge, abilities, instruments, and methods to project operations with the goal of achieving project requirements (PMI, 2017). The work is completed in detail by applying and integrating the 42 logically grouped project management processes, which are broken down into five process areas known as a project life cycle and include initiation, planning, execution, monitoring and control, and closing. The Project Management Book of Knowledge (PMBOK) divides the project lifecycle into four stages, which are depicted in Figure 1.1. Starting the project, planning and preparing for it, carrying out the work, and completing the project (PMI, 2017).

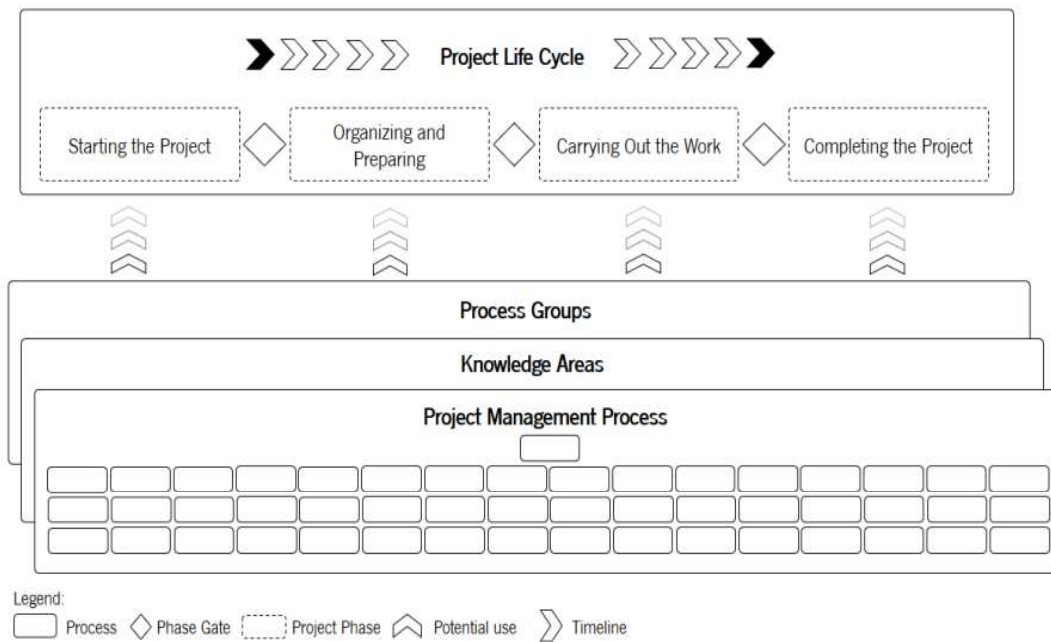


Figure 1.1 :Project Life Cycle

Source: Project Management Institute. (2017)

The ever-evolving construction market necessitates a paradigm shift in project management, emphasizing dynamic teams that can bridge functional gaps and deliver complex, time-bound projects (Ramli et al., 2021). According to Abu Hassan et. al., (2022), in today's dynamic Malaysian construction market, managing 'one-time special jobs' effectively requires a shift towards project-specific approaches. This involves meticulous goal-setting, flexible scheduling methodologies, and a commitment to continuous monitoring and adaptation to ensure project success.

1.3 Problem Statement

Recent researches are trying to uncover the various methods and challenges to improve project performance. Projects, according to Ahmed, Azmi, Mohamad, and Ahmad

(2016), carry out an operational strategy. The project's execution serves as an indicator for how well it is doing in terms of its ability to fulfil its improvement-related targets (Alsuliman, 2019). According to The Ministry of Rural and Regional Development (2017), the ministry had to take action in response to evidence that roughly 75% of construction projects took longer than expected and had to be delayed. According to the Malaysian government, improving construction quality is necessary for transforming the industry (Othman, Norfarahhanim, Ghani, & Woon, 2020).

Effective project management is crucial in the construction industry. Owing to the increased demand for construction projects, project performance monitoring is essential to the project's success. The predominance of matrix structures in today's project-driven organisations can be a major strain, as members report to several supervisors across different departments (e.g., civil, mechanical, and electrical). Due to the competing priorities created by this dual reporting, team members may feel more pressure to perform and may perceive themselves as less successful (Ling & Hamid, 2019). Malaysian organisations have significant difficulties because of the complex web of reporting links seen in matrix structures, especially in cross-functional project teams. Balancing competing demands and managing parallel reporting lines can result in job ambiguity, more effort, and ultimately, a sense of heightened project failure risk for each team member (Abdul Rahman et.al., 2020). The industry has some difficulties and barriers when integrating this component as well. This is evident from Kerzner's (2016), which highlights the vital leadership and management roles of a project manager while highlighting the significance of people-related issues in project development (Adu, 2019). Moreover, a lack of trust and top-level management support will hinder the collaborative team's success (Buli, 2019). Project management maturity (PMM) organisations continue to be plagued with project failures, which are typified by budget

overruns, schedule delays, and stakeholder discontent (Karim et al., 2023). The idea of Organisational Project Management Maturity (OPM) has gained popularity in Malaysia as a response to the increasing need for better project outcomes. OPM aims to systematically integrate, assess, and progress project management practices inside local organisations." (Abu Karim et al., 2022).

However, not all businesses will profit from the same ideal state of development (Wheatley, 2007). An excessively strict focus on raising PMM can result in bureaucratic inefficiencies, hinder innovation, and demotivate workers in Malaysian organisations, according to a case study by Wong et al. (2021). It emphasises the necessity of a flexible strategy that strikes a balance between agility and adaptation and PMM progress. These findings highlight the need for additional research on how project management maturity affects construction project success.

The nature of construction projects itself, which have extremely high constraints such as having to finish within a given amount of time regardless of viability, is the biggest cause of delays in the business. According to Chan et al. (2019), emphasising profit through significant budget constraints can have a detrimental effect on project results in the Malaysian construction industry, leading to delays, cost overruns, and schedule disruptions. Due to budgetary restrictions that are solely based on maximising profits, the construction sector in Malaysia is susceptible to project failure. Delays, overruns, and changes to the schedule may arise from this, which may lead to financial losses and reputational damage. These commercial and financial limitations present major obstacles for project teams. Cost overruns are causing organisations to become more complex, and previously unidentified issues are being updated (Simard, Aubry, & Laberge, 2018). Top management has not

supported the crisis because of the tension between a person's logic and an organization's goal (Ong & Bahar, 2018). The low project performance issue of not having enough money to support the project's advancement, which leads to late payments from the owner or customer, is also the outcome of unrealistic planning and poor cash flow management (Alsuliman, 2019).

According to Omar et al. (2019), there is a substantial impact on project performance in the oil and gas industry in Malaysia due to unclear project goals and unclear expectations regarding scope and outcomes. This can result in budget overruns, schedule slippages, and ultimately, stakeholder dissatisfaction with the project. Project success and stakeholder relationships are severely impacted by unclear project goals, scope, and expected deliverables, which is still a common problem in Malaysia. This can result in project delays, cost overruns, and ultimately, unsatisfying outcomes for owners (Emma et al., 2021).

A well-defined project outline is essential for the success of building projects. It impacts stakeholder communication and design quality as well as the project's overall performance in terms of budget, timeliness, and quality. The importance of owner competency in project definition has been highlighted in recent studies by Salleh et al. (2020) and Omar et al. (2019), especially in Malaysia's construction and oil and gas sectors where integrated projects are common. To guarantee project success and prevent expensive rework, owners must clearly articulate the goals, specifications, and scope of the project. Investing in stakeholder competency development programmes to improve their ability to articulate project objectives, requirements, and scope is essential in order to address the ongoing issues with ambiguous project briefs in Malaysia's integrated projects. This will have a major positive impact on the owner's happiness and project success. The local government claims

that the Malaysian construction industry is still beset by incapacity and a shortage of skilled project managers. About 90% of projects that were abandoned were due to management problems, according to data from the Ministry of Housing and Local Government in 2017.

While there is a growing awareness of the importance of construction project management competencies, challenges persist, particularly in handling sustainable structures (Hwang, 2013; Hasan, Sarpin, & Iskak, 2022). Despite decades of study and professionalization in project management, projects continue to deviate from budgets and schedules due to planning errors and human factors (Iriarte & Bayona, 2020; Shenhar & Holzmann, 2017). The task of developing the project within the constraints of budget, schedule, and quality falls to project managers. Highly qualified employees and the project team are required to ensure the project's success by incorporating their abilities, know-how, and unique qualities into the building project.

Hwang (2013) states that the construction industry is become increasingly conscious of the connection between project success and construction project management competencies. When it comes to construction, sustainable structures usually confront more complex issues than standard buildings. This extra difficulty is only apparent from the viewpoint of the project manager and his or her group (Hasan, Sarpin & Iskak ,2022).

On the other hand, as the need for building projects increased, so too has the body of study on project management since the field's professionalisation in the 1950s. Projects are still not succeeding as planned, even with studies on effective management and the development of project management standards (Iriarte & Bayona, 2020; Takagi & Varajão, 2019). Projects frequently stray from budgets and schedules, even in large projects, where administration usually takes up a sizable portion of the budget (Shenhar & Holzmann, 2017;

Turner & Xue, 2018). Project failures are mostly caused by errors in planning and estimating, a failure to carry out activities in accordance with the plan, or human error (Iman & Siew, 2014).

In the Malaysian construction industry, persistent challenges have hindered project performance, leading to delays, cost overruns, and stakeholder dissatisfaction. Despite efforts to address these issues, inadequate attention to critical factors such as project management practices and risk management strategies continues to undermine project success. The industry's complex landscape, characterized by dynamic market conditions, regulatory requirements, and organizational dynamics, exacerbates these challenges, making effective project management and risk mitigation imperative for achieving desired project outcomes. However, the current state of project management maturity and risk management practices within Malaysian construction organizations remains unclear, hindering efforts to improve project performance and enhance industry competitiveness (Karim et al., 2023; Omar et al., 2019).

Therefore, there is an urgent need to investigate the critical factors influencing project performance and risk management practices within the Malaysian construction industry. By identifying gaps, barriers, and opportunities for improvement, this study aims to provide actionable insights for stakeholders to enhance project resilience, mitigate risks, and drive positive project outcomes. Through a comprehensive analysis of the Malaysian construction landscape and empirical research into project management and risk management practices, this study seeks to contribute to the advancement of project management knowledge and practices in the Malaysian context, ultimately fostering

sustainable growth and development in the construction industry (Hwang, 2013; Hasan, Sarpin & Iskak, 2022).

A building project's performance might reveal its level of success. Numerous variables, such as project complexity, contractual agreements, participant relationships, project manager competency, and the skills of key project participants, will affect a project's performance. It is generally acknowledged that time, cost, and quality are the three main concern variables in project performance measurements. The "golden triangle" is made up of these three main parts (Figure 1.2). According to Atkinson (2006). In conclusion, the goal of this study is to determine the factors influencing the success of building projects in Malaysia. The study's conclusions will enable construction stakeholders, particularly contractors, to focus their limited resources on the most crucial locations for development.

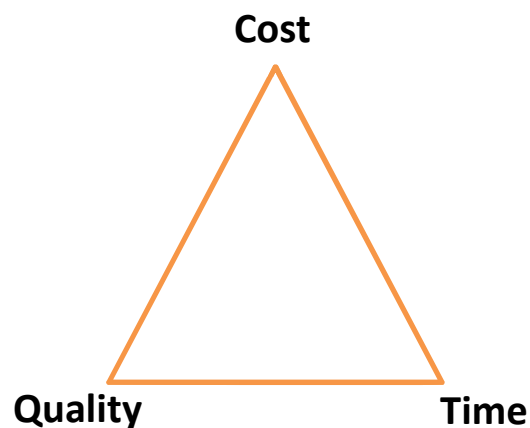


Figure 1.2: The “Golden Triangle” (Huffman & Klian, 2013)