# Impact of Project Risk Management on the ProjectPerformance in Malaysia

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## DECLARATION

I hereby declare that the case study is based on my original work except for quotations andcitations that have been duly acknowledged. I also declare it has not been previously or concurrently submitted for any other degree at Universiti Tun Abdul Razak (UNIRAZAK)or other institution.



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Date :

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The construction industry is the pillar of success of modern countries. Since the rapid economic development has increased the demand for construction project of infrastructure and facilities around the globe. Project construction performance and risk management has been widely discussed in the literature from various perspectives. Project performance holds excellent value, particularly because of its emphasis on continuous improvement via different project types. The primary objective behind project performance is to increase the success of the project's outcome and thus, this calls for a frame of reference in understanding what is exactly meant by project success. Performance refers to the achievement and fulfillment of operations relating to a set of goals and successful project achievement. The main objective of this study is to find whether risk management impacted and important for the project performance in Malaysia construction. This study involve of FOUR (4) variables which are: project risk management, company revenue, project complexity and the present of risk manager. This variable act as the tested component together with risk management that may relate with the project performance. The company revenue, the presence of project risk manager and the Project Complexity function as the comparison component to be compare and tested together with risk management. At the end of the study, researcher found that Risk Management are highly impact on the project performance in Malaysia.

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# CHAPTER 1

# INTRODUCTION

## 1.1 Background of the Study

All nations are competing to advance their nations in a variety of disciplines in the current period of modernization. Developmental advancement has a significant impact on the construction industry. This creates room for a range of potential risks in the future. Risk is described as an unforeseen occurrence or circumstance that could have an impact on the project's goals, either positively or negatively. Risk can't be controlled. Since uncertainty, probability, or unpredictability are all aspects of risk, the term "risk management" might be deceptive. Truly controlling what happens during the process is impossible. Risk management is the process of reducing hazards to lessen their effect on a company's health. Any decision or omission that raises a company's risk is a business risk.



The goal of risk management is to ensure that both the organisation and its employees take measures to reduce their vulnerability to the potential adverse effects of any identified risks. Instead of reacting to prospective occurrences as they happen, risk management could be understood as a process of anticipating potential events. Because it significantly improves the chances of a project being completed successfully, risk management is an essential component of project management. You can prevent significant disasters, boost income by cutting costs, guarantee the successful completion of the project, gain a competitive edge, improve a sense of accountability and responsibility, and uncover new possibilities if you create and adhere to a project risk management plan.

Each project has its unique set of hazards that are dependent on the project's current environment, and each one has its own project risk management plan. Based on this, we can divide hazards

into two categories: external and internal. An organization cannot control external risks, which include political, economic, and natural threats. However, the most prevalent project risks are those that can be managed by a project manager or a risk management team. Risk management is an unavoidable duty for project managers as part of each project. Project risk management can be difficult to learn, and the uncertainty that comes with it can be stressful. Risk management is inextricably linked to the project's cost, schedule, and quality. Consequently, it has to be a key component of the project management process.

An unplanned rise in project expenses is known as cost risk. It's possible that actual expenditure will exceed projections for this project. Poor financial planning, inefficient use of resources, inaccurate cost estimation, and uncontrolled scope growth all contribute to this all-too-common project risk. In addition to schedule risk and performance risk, this is the third most common type of project risk. Schedule risk refers to the potential for tasks to take more time than allotted. The lack of forethought is frequently at blame for this kind of danger. Since an inaccurately planned schedule typically results in cost increases, this risk is closely linked to cost risk. Longer projects naturally demand a higher budget. Delays, a direct effect of schedule risk, can cause projects to miss their deadlines and cost companies valuable time and resources. Performance risk, or failing to complete the task by the deadline, is another potential outcome of schedule risk.



On the other hand, performance risk is the danger that the project won't produce expected outcomes. Because of the potential complexity of its root causes, tracing the origin of this risk is challenging. It's possible for a project team to complete their work on time and within budget without producing the expected results and advantages. However, if a team's or a technology's performance causes the project's costs or timeline to rise, then performance risk is a factor. The company ultimately wasted its time and money on a disastrous project.

## 1.2 Problem Statement

Malaysia has moved swiftly to keep up with the changing times as the country strives to achieve robust economic development and chart its path to becoming a developed nation. The construction industry is one of the most essential industries for developing a nation's economy and increasing its competitiveness. In tandem with the economic expansion, the construction industry also contributes to the high accident fatality rate. Numerous inherent dangers are frequently presented to construction workers by the hazardous working conditions on construction sites. Despite the fact that a variety of approaches have been implemented to prevent accidents, the statistics indicate that further progress must be made immediately. SOCSO and DOSH statistics indicate a 231.9% and 125.9% increase in the number of fatal accidents over the past five years, respectively. The top three causes of fatal construction incidents are unsafe methods, the industry's unique characteristics, and hazardous worksite conditions.



Approximately 313 million workplace accidents occur annually, resulting in over 350,000 fatalities (ILO, 2015). This equates to over 800,000 accidents and 959 fatalities per day. There were 312 workplace fatalities and 32,674 workplace injuries in Malaysia in 2020 (DOSM, 2020). The sectors of service, manufacturing, and construction have the highest rates of workplace accidents. The Construction industry has the highest rate of workplace fatalities despite having the third-highest number of injuries. This industry has not shown any signs of long-term stability and continues to be the riskiest. The construction industry has a higher death rate than the average workplace in other countries.

The US Bureau of Labour Statistics reported 1,008 deaths due to occupational incidents in the US Construction industry, with a rate of 10.2 deaths per 100,000 workers, compared to the overall industry rate of 3.4% (BLS, 2021). In the United Kingdom, the Health and Safety

Executive (HSE) reported that the rate of fatal injuries in the Construction industry was 1.74, compared to 0.34 for all industries (HSE, 2021). Japan recorded a rate of 5.24 fatal accidents per 100,000 construction employees in the Asia region (all industries: 1.49 per 100,000 workers), while Singapore recorded a rate of 2.2 (all industries: 0.9).

The construction sector has long been known for its high fatality rate, earning it a reputation as one of the most hazardous in the world. As a result, researchers have focused their attention on this problem to identify the causes of injuries and fatalities. Therefore, the goal of thisarticle is to take a closer look at work-related fatalities in the Construction business and to determine what factors contribute to these tragedies in Malaysia. The economic and social cost of occupational accidents can be decreased, and workplace safety and worker protection can be improved by determining the elements that contribute to occupational accidents and fatalities in the aforementioned industry.



The Star reported on 3 January 2023 that a construction worker died after falling 70 meters in Pasir Gudang, Malaysia. A 42-year-old Nepalese man died after falling from a development project structure. According to the Johor Occupational Safety and Health Department (Dosh), the incident occurred on Monday, January 2, at 10:21 a.m., when the victim was removing scaffolding from the project. In addition, on 19 February 2023, the Department of Occupational Safety and Health reported that a rice cutter machine operator perished after being struck by a broken iron hook chain while attempting to free a rice cutter machine from a rice field. In the meantime, on 10 February 2023, the Department of Occupational Safety and Health reported that a subcontractor performing scrap cleaning work in a confined space pit caught fire due to adjacent welding work.

## 1.3 Research Objectives

For this study, researcher establishes the following objectives which are:

1 - To determine whether risk management has significant impact on the project performance in Malaysia.

2 - To investigate the relationship between risk management and the project performance in Malaysia.

3 - To investigate the relationship between company revenue and the project performance in Malaysia.

4 - To investigate the relationship between Project Complexity and the project performance in Malaysia.

5 - To investigate the relationship between the presence of a risk manager and the project performance in Malaysia.

## 1.4 Research Questions

For this study, researcher establishes the following questions which are:

1 - Does the risk management have significant impact on the project performance in Malaysia.

2 - Does the company revenue influence on the project performance in Malaysia.

3 - Does the Project Complexity influence on the project performance in Malaysia.

4 - Does the presence of a risk manager influence on the project performance in Malaysia.

## 1.5 Significance of Study

The significant of this study is to comprehend the impact of risk management on project performance. Further it aims to investigate the degree of diffusion of risk management practice in Malaysia companies. From the result the study, responsible body like Socso and Department of Occupational Safety and Heath Malaysia can use the data in order to find the best solution to cater the problem of risk management in Malaysia especially in constructions and factories working conditions. Data from the study can be utilized in order to come out with good and different ideas on the risk management issues. This study hopefully may give concern or act as a trigger point to the responsible bodies in Malaysia in giving special attention to the issue. Respondents who get involved in this study also will be more conscious about the risk management issues and also can apply in their job and carrier especially in construction field.

# CHAPTER 2

# LITERATURE REVIEW

## 2.1 Introduction

This section aims to review the relevant literature and provide a theoretical framework for the study. This chapter begins with a theoretical overview of the variables which are: project risk management, company revenue, the project complexity, and the present of risk manager. This variable function as the tested component together with risk management that may relate with the project performance. The company revenue, the presence of project risk manager and the Project Complexity function as the comparison component to be compare and tested together with risk management. The literature review of the variables has been discus below:



## 2.2 Project Performance

Managers of construction projects worry a lot about how well their projects are performing since completing a construction project is fraught with peril at every level from planning to delivery. As a result, numerous academics in the field of project management have studied what makes a building project a success (Abidin et al., 2021). However, the concept of project success and performance indicators remains hazy as a result of divergent expectations of project success among stakeholders of numerous projects within a project. Therefore, when evaluating the success of a project based on the opinions of its various stakeholders, there is a knowledge gap. Given that performance is defined as "an individual's contribution to the execution of a task necessary to complete a construction project" (Liu and Walker, 1998), measuring, evaluating, and prioritising performance throughout all phases of a project is essential for gauging its overall success.

Based on their research, Pillai et al. (2002) provided a framework for evaluating the success of R&D initiatives. Project phases, associated performance indicators, stakeholders, and performance measurements are all highlighted in this model. By bringing together the most important aspects of each stage of the R&D project's life cycle, they proposed using the Integrated Performance Index (IPI) to measure the project's success at any time. Stakeholder requirements, expectations, and outcomes at each stage are explored at length and formalized. In order to better use resources and increase stakeholder contributions to the successful completion of R&D projects, the IPI model was developed based on the real-world experience of Pillai et al., (2002) and has been tested and verified.

Choosing a technique to evaluate performance is difficult since performance is intangible, especially in the case of managerial performance. Consequently, developing a best-in-class organisation calls for an assessment instrument that can boost project performance (Qureshi, Warraich, & Hijazi, 2009). There is no agreed-upon standard for evaluating project success (Jha & Iyer, 2007), thus the term is used inconsistently. Criteria, as stated by Lim & Mohamed (1999), are "the rules of the game" by which evaluations are conducted. The success of a project can be judged by how effectively it meets the needs of the target audience and how well the project owner's strategic organisational goals are met, as stated by Khang and Moe (2008).

Schedule, cost, and quality performances—also known as the "iron triangle" (Atkinson, 1999)—are commonly used to assess project success or failure. In the years since the introduction of the "iron triangle," other studies have presented additional metrics by which performance can be judged. Performance assurance is an important part of construction project management. Achieving construction project success, however, is no easy feat. Furthermore, there are no

universally agreed standards for measuring the performance of a building project (Jha & Iyer, 2007), making this a contentious subject in and of itself.

### 2.3 Project Risk Management and Project Performance

Every project has its share of unknowns and potential pitfalls during its execution. A project manager must be ready to handle variations in a variety of areas, including but not limited to budget, schedule, and quality. This is according to Kerzner (2006). The obvious follow-up query is, "What is risk management?" According to Kerzner (2006), risk management is "the process of identifying, quantifying, and responding to risks of a project without any material impact on the project's objectives and schedule." According to Dinu (2015), risk management is "the process of identifying, analysing, and responding to risk factors during the life of a project in the best interests of its objectives."



However, risk management is defined by Dinsmore and Cabanis-Brewin (2011) as "the formal process by which risk factors are systematically identified, assessed, and provided for." All types of projects require Risk Management (RM) as an integral part of management and accountability. Proactively identifying, analysing, assessing, prioritising, and monitoring risks throughout the entire project lifecycle is at the heart of risk management, which is a systematic approach applied across the implementation phases of any project that supports the achievement of its strategic objectives (Petr & Blanka, 2018).

This process includes risk management planning, identification, analysis, reactions, monitoring, and control for a project, as described by Dinsmore and Cabanis-Brewin (2011). The authors go on to say that managing risks should be seen of as anticipating events rather than reacting to them as they happen. Project schedule, scope, budget, communications, stakeholder participation, and

agreed-upon quality of deliverables are only few of the areas that risk management can affect, as explained by Boyer (2016).

Studies show that every project has some degree of uncertainty attached to it, making risk management crucial for any project's outcome. Kerzner (2006), Nicholas and Steyn (2011), and Yim et al. Burke (2003), who also asserts that risk management is and always has been a crucial part of project management, supports this view. According to Chapman and Ward (2003), risk management is essential since managing uncertainty is intrinsic to most initiatives that call for formal project management.

However, Monteiro de Carvalho and Rabechini Junior (2013) state that there is a big gap between risk management theory and practise in actual businesses. This seems to be an explanation for why risk management isn't widely used in some businesses. Dey (2002) adds that as risk is always subjective, poorly managed risks might jeopardise the success of a project. Some aspiring project managers may wonder if risk management is even necessary in project management if they compare the arguments of Kerzner (2006), Nicholas & Steyn (2011), and Yin et al (2015) to those of Monteiro de Carvalho & Rabechini Junior (2013) and Dey (2002) and find a contradiction.



According to Dinu (2015), a project risk is anything that poses a danger to or places constraints on the project's goals, objectives, or outputs. Having established what risks are, we may go on to the study of project risk management. Project risk management is defined differently depending on the author: by Yim R et al (2014), it is the process of systematically identifying, evaluating, and mitigating risks to increase the probability of project success, and by Kerzner (2006), it is the process of identifying, quantifying, and responding to the risks of the project without materially impacting the project's objectives. Burke (2003) elaborates on the aforementioned definitions by extending the scope of project risk management to encompass risk management at all stages of a

project's lifespan. The term "project risk management" refers to the process of systematically locating, assessing, and dealing with any threats to a project at any point in time.

In addition to this definition, it states that these measures must maximise the outcomes of favourable events and decrease the consequences of unfavourable ones. Risk management, according to both Burke (2003) and Chapman & Ward (2003), needs to guide and inform all phases of the project life cycle (PLC) for it to be successful. Hedemann et al. (2005) define the project lifecycle as the sequence of events that starts with the acceptance of the project assignment and ends with the handoff of the completed product. There is a consistent thread running across all of these different authors' definitions of risk. They always make sure that risk is related to the goals.



**2.4 Company Revenue and Project Performance**

The success of the company's initiatives has a bearing on its competitiveness. Project achievement is the completion of a project within the agreed-upon parameters of scope, time, cost, quality, resources, and risk (Heldman, 2011). As a measure of project success, the first studies considered the 'iron triangle', which incorporates factors related to project completion on time, within budget, and according to quality specifications (Heldman, 2011). Over time, individuals realised that this issue was significantly more complex; these factors were insufficient to determine the success of a project (Patah & Carvalho, 2016).

The objective of construction project management is to ensure that events transpire in accordance with the project's plans and standards. Nevertheless, dissatisfaction with performance is a prevalent issue in the construction industry. The success of a typical endeavour may be hindered by a number of obstacles, such as low productivity. AlBeshtawi et al. (2014) cite a lengthy

history of cost and schedule overruns in the construction industry as a source of additional problems. Yisa and Edwards (2002) concur that, despite the implementation of new alternative and less aggressive contractual frameworks, project time and expense overruns continue to afflict the firm, resulting in dissatisfied clients.

A construction company's failure is primarily attributable to insufficient funds to finance daily operations. Failure is unfavourable for any business and must be avoided at all costs because its repercussions affect not only the contracting organisation but also the entire construction industry and society(Doan et al., 2021). Moreover, cash appears to be the most valuable resource in construction companies, so cash flow should be the most crucial managerial factor (Omopariola et al., 2019). According to Weber (2018), the most difficult and critical challenge currently facing contractors is securing sufficient cash flow at all stages of construction project implementation. Sufficient cash flow enables contractors to meet three objectives: paying for overhead, labour, and material costs; completing construction activities on time; and reducing financial liabilities. Consequently, contractors refrain from performing work that exceeds available currency or credit at any point during the project (Zraqat et al., 2021).



Additionally, the enormous complexity and general lack of control that characterises building projects exponentially raises the risk associated with their already high cost of execution. Due to delays in completion and failure to satisfy economic feasibility, the owners may incur considerable financial losses as a result of poor financial management of these projects, such as failing to fulfil outstanding payments on time. Knowing the true cash flow values required throughout construction is therefore essential (Kotb et al., 2018). Successful construction businesses often employ sound methods for managing their finances. According to Tengan et al. (2016), the duration of a construction project and the managerial contribution of the necessary stakeholders are also important factors in the project's success, along with the degree of (financial)

resources, organisational performance, and proper financial management procedures. The goal of this research is to examine how different cash flow variations affect firm performance depending on the level of financial management. Prosperity in Building Projects.

### 2.5 Project Complexity and Project Performance

Over the past two decades, researchers in the field of project management have focused most of their attention on the factors that contribute to a project's success (Cooke-Davies, 2000). The traditional "Iron Triangle," "Golden Triangle," "Triangle of Virtue," or "Holy Trinity" criteria of time, cost, and quality have been seen as the most critical link to project success (de Carvalho et al., 2015). However, the meaning of "success" differs widely among academics. Still, some projects that were delivered on time, under budget, and with acceptable quality were declared failures, while others that went over budget or ran over schedule were considered successes (Shenhar et al., 2001). These contrasting responses to and assessments of the standard definition of success have led to new ways of thinking about, and measuring, the success of projects (Jugdev & Muller, 2005). This indicated that different stakeholder groups have diverse definitions of project success (Chou & Yang, 2012).



Consequently, the measurement of project performance can vary according to project type, perception, stage, and relative or absolute terms (Carvalho et al., 2015). However, success factors may influence the accomplishment of these project success criteria throughout the project's life cycle (Joslin & Muller, 2015). The efficacy of project management is one of these factors that are intended to enhance the efficiency of project management in order to increase the probability of success (Badewi, 2016). Moreover, the high rates of project failure call for greater concern and indicate that the essential elements that comprise a project's success are malleable and require greater comprehension (Judgev & Muller, 2005). Prior evidence suggests that these

elements may not enhance project success in other contexts (Davis, 2016). Therefore, it is impossible to implement them as guidelines in a standard template or by upgrading tools.

Complexity is regarded as an essential factor in the project management discipline. However, the characteristics and nature of project complexity are the subject of a contentious debate. Despite the fact that a number of factors are considered to be determinants of project complexity, there are few studies that investigate them. On the one hand, the term "Complexity" is not explicitly defined in the literature; rather, authors have recommended focusing more on defining and managing complex projects. On the other hand, project performance is believed to be closely related to project complexity. In order to accomplish effective project management, it is necessary to measure the project's complexity with exactitude. Despite the fact that construction projects are becoming larger and more complicated, it is essential to comprehend the concept and administration of project complexity. The construction industry has struggled to deal with the increasing complexity of significant construction projects and project management performance (Williams, 2002). Construction projects, especially big ones, have a lot of parts that all work together. Which make things complicated in ways that can be described (Chan et al., 2004). In fact, most people agree that knowing complexity is important for project management (Remington, 2009). This is because complexity seems to cause problems with making decisions and reaching goals. Chan et al. (2004) say that a project's success eventually depends on how well it is done and how hard it is to do. Even though the importance of project complexity in project management has been widely recognised (Parsons-Hann et al., 2005), there aren't enough objective ways to measure it. This is because complexity is mostly based on how the observer sees it (Pich, 2002).

## 2.6 Risk Manager and Project Performance

It was thought that it was important to develop a novel assessment method that went beyond the conventional perspective on project success (Müller et al., 2018). By offering a paradigm for comprehending the interaction between person-centered leadership and team-centered leadership by members of the project team, highlighted the significance of managing people in projects. According to Martinsuo & Hoverfält (2018), project management should examine the interorganizational dimensions of change programmes while taking various stakeholders' needs into account. The success or critical success factors approach is one of the primary schools of project management. It aims to evaluate managerial or organizational elements that influence project management success or failure (Turner et al., 2013) and investigate the causes of successes and failures (Söderlund, 2011). A project's success depends on the risk manager's capacity to carry out the suggested objectives (Turner, 2006).



According to Jugend et al. (2016), several scholars have identified crucial elements in successful project completion. Regarding the variables that affect project success, there is disagreement among scholars (Crawford, 2000). The importance of organizational elements for the success of projects has been emphasized in several studies on the subject of project management (Brem & Wolfram, 2017). The following dimensions can be used to categorize these organizational factors: top management support (Ekrot et al., 2016), communication (Wu et al., 2017), change management (Hwang & Low, 2012), organisational culture (Situmeang et al., 2017), and training (Dandage et al., 2018).

A risk manager's responsibility is to educate stakeholders about the company's risk management practises. They provide assistance in developing market, credit, and operational risk models, checking the effectiveness of controls, and conducting research and analysis. Risk managers need

to be able to apply their advanced quantitative and analytical skills across a variety of company functions. In the project management sector, research on human resource (HR) management has been rudimentary at best (Belout & Gauvreau, 2004), and research on PS related behavioural components is often lacking (Shafi et al., 2020), with a few notable exceptions. In recent decades, leadership has emerged as an important area of study (Danils, Hondeghem, & Dochy, 2019). A leader's influence is said to be guided by their vision and the principles and ideas they hold dear (Danils et al., 2019; Bush and Glover, 2003).

According to Michael and Raanan (1993), leadership is defined as a preplanned, deliberate programme used by an organization to improve the standard of its leadership. According to Danils, et al. (2019), in the context of LD in the education sector, instructional leadership places a greater emphasis on the teaching and learning process than transformational leadership does on the workforce's motivational elements. By gathering information and ideas from many sources, the risk manager investigates the social environment and spots potential dangers (sterlund and Jens, 2019). Because risk management processes would be implemented as a result of the risk manager's employment, the project's outcome is likely to change (Raz et al., 2002).

## 2.7 Hypotheses Development

According to the literature review, researcher establishes the following hypothesis:

**H1** - Risk management does influence the project performance in Malaysia.

**H2** - Company revenue does influence the project performance in Malaysia.

**H3** - The Project Complexity does influence the project performance in Malaysia.

**H4** - The presence of a risk manager does influence the project performance in Malaysia.

## 2.8 Conceptual Framework

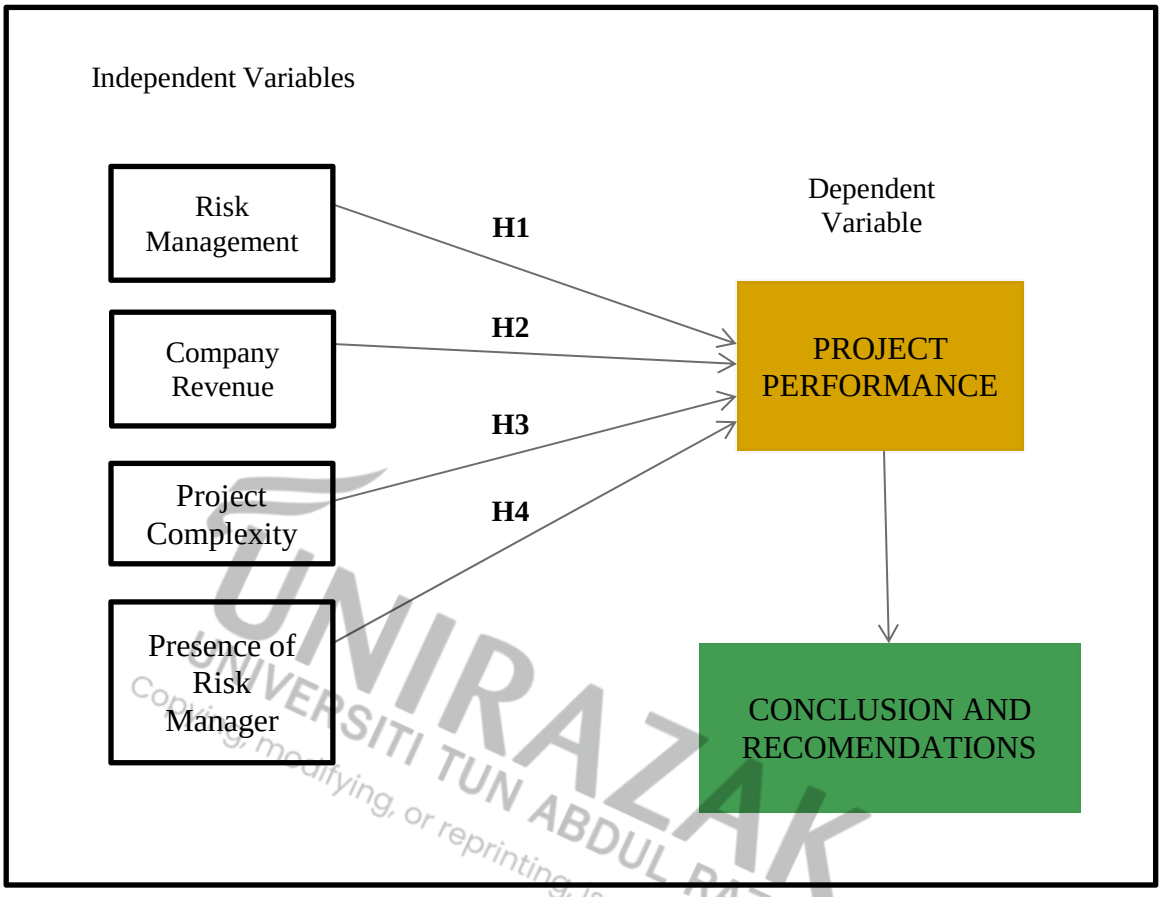




**Figure 2.1: Conceptual model of relationship between dependent variable and independent variables.**

Figure 2.1 shows the conceptual model of relationship between dependent variable and independent variables. Whereas, it list the independent variables of which are the factors that may impact on project performance (Risk Management, Company Revenue, Project Complexity, and Presence of Risk Manager). While, the dependent variable of this study is the project performance in Malaysia.

# CHAPTER 3

# RESEARCH METHODOLOGY

## 3.1 Introduction

In this chapter the researcher will discuss on the research methodology. Which this include the research hypothesis, research design, the academic construct and research framework, data collection method, sampling design, the measurement and scale, data collection method and also the method of data analysis.

## 3.2 Research Design

A plan defining the methods and strategy to an inquiry that is deemed necessary for the study at hand is referred to as a "research design" (Kothari, 2004). We refer to a study as legitimate when its results are consistent with reality; when they are not, we refer to a study as badly conceived. A researcher will develop a strategy that will serve as the guide for how he will carry out his research, including the methods for data collection and analysis. The study strategy has no relation to any particular data collection technique or data type. For this study, descriptive research methodology was used. The descriptive research approach was chosen for this study because it has the ability to produce a sizable sample size from a diverse population. This design attempts to explain why individuals behave in certain ways in addition to accurately portraying the situation. The advantage of this arrangement is that it makes it easier to find views in their original context.

### 3.3 Data Collection Method

Data collection, which comprises the methodical gathering and measuring of information on pertinent factors, is necessary in order to address research questions, provide hypotheses, and evaluate results. Both physical and social science research require the collection of pertinent data. The importance of gathering pertinent data for a study cannot be overstated. Data collection involves a lot of planning, work, patience, endurance, and other skills to be successful. The first step in data collection is determining the precise information requirements of the project, then choosing a representative data sample from the intended audience. After that, you'll require a particular tool to collect data from your selected sample.

Additionally, primary and secondary data are accessible. On the other hand, primary data describes knowledge that has been gained from firsthand experience. Primary data is more reliable, real, and unbiased than secondary data because it has not been publicised. Primary data is more trustworthy than secondary data because it hasn't been altered or modified by people. As a result, this study also uses primary data in the form of questionnaires that were given to participants. Furthermore, secondary data is information that has been acquired from a source that has already been in some way publicised. Secondary data is essential since it is challenging to conduct a new survey that can accurately reflect prior change and/or advancements. This study drew on secondary sources of data, including academic journals, statistical websites, books, the works of other experts, government records, and internet articles.

### 3.4 Sampling Technique

Some individuals of the population are randomly picked to make up the sample (Sekaran, 2010). To put it another way, a sample is a selection of people from a larger whole (Holmes et al., 2005). The best way to ensure precision and uniformity is to compile data from every member of the population. The size of the population, however, means that sampling will be necessary for this study (Sekaran & Bougie, 2010). About 230 participants were involved. There is rarely justification in behavioral research for sample sizes less than 30 or larger than 500; within these limits (30 to 500), the use of a sample about 10 percent size of the parent population is recommended. For further reading, please refer to Roscoe (1975), who proposed a number of rules of thumb that can be used to select an appropriate sample for behavioral research.



### 3.5 Measurement and Scale

Making measurements entails gathering numerical data. To quantify an item's properties, a scale is needed. A scale is used in this context to compare and contrast people's opinions on the relevant aspects. The four most basic types of measurement tools are nominal, ordinal, interval, and ratio scales (Sekaran & Boogie, 2010). The nominal and ordinal Likert Scales were also utilised in this study; the former was used to categorise participants into their respective demographic groups in Part A, and the latter was used to quantify the items making up each of the study's independent variables in Parts B.

### 3.6 Method of Data Analysis

The questionnaire data was entered into SPSS (Statistical Package for the Social Sciences) version 20 for automated coding and analysis. Then, descriptive and inferential statistics were used to summarize the data.

#### 3.6.1 Reliability Analysis

The steadiness of a measurement is linked to its dependability. A participant's responses on a motivational assessment tool should be somewhat consistent across administrations. Although reliability cannot be precisely assessed, it can be estimated using a number of methods. The steadiness of a measurement is linked to its dependability. A participant's responses on a motivational assessment tool should be somewhat consistent across administrations. Although reliability cannot be precisely assessed, it can be estimated using a number of methods. How effectively a measurement or method maintains within a predetermined range of values is what determines its reliability (Best and Kahn 2006). It all comes down to how consistent a measurement is. Although it is impossible to calculate dependability precisely, a variety of measures can be employed to obtain a reliable approximation. To prove the reliability of the study, consistent responses from the sample were employed. We were able to guarantee the accuracy of our findings by posing essential questions to the appropriate respondents and paying great attention to the core concerns around the causes and effects of project performance. One of the most well-known and extensively applied reliability metrics is Cronbach's alpha, which, assuming the test items are standard, is based on the average correlation between test items. Sekaran et al. (2011) suggested that a Cronbach's Alpha value for a questionnaire of less than 0.6 (0.6) is regarded as being of low quality. This is in accordance with the rule of thumb cronbach's alpha coefficient size.

### 3.6.2 Correlation Analysis

A statistical tool for figuring out how closely a group of variables vary one another is correlation analysis. The correlation coefficient's (r or R) value can be used to determine how close two variables are to one another. To examine the relationship between the two sets of variables, the correlation analysis is conducted. A positive correlation shows how much the variables move together, whereas a negative correlation shows how much one variable increases when another decreases, assuming that all the variables rise or fall at the same pace. a generalization According to Cronbach's Alpha Coeffieicent Size, values between 0.6 and 0.7 denote a reasonable level of dependability, 0.8 and 0.9 a very good level of reliability, and 0.9 and 100 an exceptional level of reliability.

### 3.6.3 Multiple Regression Analysis

While the correlation coefficient provides insight into the nature of the link between two variables, it does not reveal the extent to which a set of independent variables will account for a given amount of variance in a dependent variable. It is possible to examine such cases by employing multiple regression analysis (Sekaran, 2008). The table 3.1 provides guidelines for interpreting the range of coefficients and the strength of their associations.

Table 3.1: Rules of Thumb about Correlation Coefficient Size

| Coefficient range | Strength of association |
|---|---|
| 0.91 to 1.00 | Very Strong |
| 0.71 to 0.90 | High |
| 0.41 to 0.70 | Moderate |
| 0.21 – 0.40 | Small but define relationship. |
| 0.01 – 0.2 | Slight almost negligible |

**3.7 Data Analysis**

The goal of any study of data should be to find insights that can be used. Whether the data is qualitative or quantitative, the analysis can describe and summarise the data, find links between variables, compare variables, show differences, and predict results. In this study, the surveys that were filled out were used to review the data. Once the data was checked to make sure it was correct, it was turned into a frequency and percentage distribution. The results were shown in both graphs and tables. SPSS was used to do the study of the findings.

# CHAPTER 4

# RESULT AND DISCUSSION

## 4.1 Introduction

The main purpose of this chapter is to offer an analysis of important data obtained from a survey using questionnaires conducted. After the distribution of 230 questionnaires to all of the targeted respondents whereby most of them consists of employee in risk management department and employee who are involve directly in construction field. The findings of the questionnaire survey are presented in this chapter, as well as the results of the multiple regression analysis techniques used and the results of hypothesis testing.

## 4.2 Descriptive Analysis

The result from the study can be seen in the table 4.1. The respondents are comprised mainly male 58.7% and female is 41.3% from 230 respondents. On the other hand, for the age of respondent: respondents with the age between 41 to 50 years old stated the highest percentage which is 47.4%. While respondent with age between 51 to 60 years tend to state the second highest percentage of respondents which stated 29.1% from total respondents. And respondents with the age 21 to 30 years stated the lowest percentage which is only 3%. Meanwhile, in term of race; Chinese is the largest percentage from the respondents which is 51.3% followed by Malay as the second largest which stated 33.9% then followed by Indian which is 14.8%. Meanwhile in term of type of construction, residential construction stated the largest percentage which is 34.3%, while second largest is infrastructure stated 33.0% from the total respondents, while the respondents involve in commercial construction stated the lowest percentage which is 32.6%. Meanwhile, in term of working experience, respondent with 11 to 20 years old experience stated the largest portion which is 32.6%, followed by respondent with experience 21 to 30 years old stated the second largest percentage which is 30.9%.

While respondent with 31 to 40 years old experience stated as the third largest percentage which is 24.8% followed by respondent with more than 40 years' experience 7.4% and the lowest percentage is respondent with 1 to 10 years' experience which stated about 4.3% of the total respondents tested.

**Table 4.1**: Descriptive Analysis

| | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| **Gender** | | | | |
| Female | 95 | 41.3 | 41.3 | 41.3 |
| Male | 135 | 58.7 | 58.7 | 100.0 |
| **Age** | | | | |
| 21- 30 years old | 7 | 3.0 | 3.0 | 3.0 |
| 31- 40 years old | 47 | 20.4 | 20.4 | 23.5 |
| 41-50years old | 109 | 47.4 | 47.4 | 70.9 |
| 51-60 years old | 67 | 29.10 | 29.1 | 100.0 |
| **Race** | | | | |
| Malay | 78 | 33.9 | 33.9 | 33.9 |
| Chinese | 118 | 51.3 | 51.3 | 85.2 |
| Indian | 34 | 14.8 | 14.8 | 100.0 |
| **Type of Construction** | | | | |
| Residential Construction | 79 | 34.3 | 34.3 | 34.3 |
| Infrastructure Construction | 76 | 33.0 | 33.0 | 67.4 |
| Commercial Construction | 75 | 32.6 | 32.6 | 100.0 |
| **Experience** | | | | |
| 1 to 10 years | 10 | 4.3 | 4.3 | 4.3 |
| 11 to 20 years | 75 | 32.6 | 32.6 | 37.0 |
| 21 to 30 years | 71 | 30.9 | 30.9 | 67.8 |
| 31 to 40 years | 57 | 24.8 | 24.8 | 95.6 |
| More than 40 years | 17 | 7.4 | 7.4 | 100.0 |

### 4.3 Reliability Analysis

The study's dependability was assessed. Items evaluating risk management, company revenue, project complexity, and the presence of a risk manager have all been subjected to a reliability test using the Cronbach's Alpha value. The coefficient, which represents the degree to which the items in the set are positively associated with one another, is a valid metric. The closer the alpha value is to 1, the more consistently reliable the data, according to Hair et al., (2003). Below is the Table 4.2 shows the rule of thumbs Cronbach's Alpha coefficient size.

**Table 4.2** Summary of Reliability Analysis

| Variables | Number of Items | Cronbach's Alpha |
|---|---|---|
| Project Performance | 4 | 0.744 |
| Risk Management | 5 | 0.902 |
| Company Revenue | 4 | 0.529 |
| Project Complexity | 4 | 0.622 |
| Presence of Risk Manager | 4 | 0.808 |



Table 4.2 show the summary of reliability test in this study. It shows that the independent variable result of Cronbach's Alpha which is Project Performance is 0.744, Risk Management is 0.902, Company Revenue is 0.529, Project Complexity is 0.622, and Presence of Risk Manager is 0.808. From this result it can be concluded that Risk Management, Presence of Risk Manager and Project Performance are in good range due to the result finding 0.7 and above. It is reliable and accepted for this research base on Cronbach's Alpha in Table 4.2. While the Project Complexity can be considering as moderate alpha coefficient which result between 0.6 > 0.7 which for sure it was reliable for this study. Although the lowest Cronbach's Alpha value stated by Company Revenue is 0.529 but it can be consider as consistent but it will be classified as a poor reliability between each of the items.

### 4.4 Inferential Statistic

#### 4.4.1 Correlation Analysis

Correlation analysis is a method of statistical analysis used to examine the degree to which two or more variables are related to one another. It was once used to figure out how various factors related to one another. The correlation coefficient is used to measure the degree to which one or more independent factors predict another dependent variable. Using Pearson product moment correlation coefficients, we analyzed the association between our independent variable and our dependent one.

**Table 4.3** Result of Correlation Analysis

| | | ProjectPerformance | RiskMgt | Revenue | Complexity | MgrPresence |
|---|---|---|---|---|---|---|
| ProjectPerformance | Pearson Correlation | 1 | .887 | .784 | .687 | .875 |
| | Sig. (2-tailed) | | .000 | .000 | .000 | .000 |
| | N | 230 | 230 | 230 | 230 | 230 |
| RiskMgt | Pearson Correlation | .887 | 1 | .509 | .553 | .644 |
| | Sig. (2-tailed) | .000 | | .000 | .000 | .000 |
| | N | 230 | 230 | 230 | 230 | 230 |
| Revenue | Pearson Correlation | .784 | .509 | 1 | .590 | .572 |
| | Sig. (2-tailed) | .000 | .000 | | .000 | .000 |
| | N | 230 | 230 | 230 | 230 | 230 |
| Complexity | Pearson Correlation | .687 | .553 | .590 | 1 | .644 |
| | Sig. (2-tailed) | .000 | .000 | .000 | | .000 |
| | N | 230 | 230 | 230 | 230 | 230 |
| MgrPresence | Pearson Correlation | .875 | .644 | .572 | .644 | 1 |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | |
| | N | 230 | 230 | 230 | 230 | 230 |

The strength of correlation can be determined by referring to the Table 4.4. The result of the Pearson correlation is being presented in Table 4.4:

**Table 4.4** Summary of Correlation Analysis

| Variables | Pearson Correlation |
|---|---|
| Risk Management | 0.877 |
| Company Revenue | 0.784 |
| Project Complexity | 0.687 |
| Presence of Risk Manager | 0.875 |

According to the Table 4.4, there was a high relationship between Risk Management and the project performance in Malaysia as it indicated by the value correlation coefficient of 0.877, thus it can be said that the relationship has a high relationship as the value are between 0.71 – 0.8. Meanwhile, for the next variable which is Presence of Risk Manager also stated a high relationship between Presence of Risk Manager and the project performance in Malaysia as it indicated by the value correlation coefficient of 0.875, thus it can be said that the relationship has a high relationship as the value are between 0.71 – 0.8.



On the other hand, Company Revenue also stated the high relationship as the correlation coefficient is 0.784 which can be consider as high relationship whereby it is between range of 0.71 -0.8. So, we can conclude that there was a high relationship between Risk Management, Presence of Risk Manager, and Company Revenue towards the project performance in Malaysia. Besides, the project complexity stated the lowest correlation coefficient value which is 0.687 and can be consider as a moderate relationship as the Coefficient range is between 0.41-0.7

.

### 4.4.2 Multiple Regression Analysis

In order to verify the hypothesis significant link, multiple regressions are employed here. The only way to tell if a set of independent factors influences a set of dependent variables is to do a multiple regression analysis. The correlation coefficient between the dependent variable and the independent variables can be calculated using the R-value.

**Table 4.5** Model Summary of Multiple Regressions

| Model | R | R Square | F | Sig. |
|---|---|---|---|---|
| 1 | 0.847[a] | 0.821 | 177.720 | .000[a] |

Model Summary Table 4.5 summarizes the multiple regression models when all four independent variables simultaneously influence dependent variables, the Project Performance in Malaysia. There are four independent variables in varying degrees, but they might also inter-correlate among themselves too.



Based on the Table 4.5, the value of correlation coefficient (R) for four independent variables (Risk Management, Company Revenue, Project Complexity and Presence of Risk Manager) with the dependent variable (Project Performance in Malaysia) was 0.847. So this study has a positive and strong correlation between four independent variables and dependent variables.

Meanwhile, the R square value is the measure of how much of the variability of the dependent variable accounted by the independents variables. By looking to the Table 4.5 the value of R square which is 0.821 indicates that the risk management has 82.1% of variation in project performance while the rest of 17.9% are explained by other factors. Thus these prove that risk management has impact and influence on Project Performance in Malaysia.

## 4.5 Discussion

### 4.5.1 Research Question 2:

*Does the risk management influence on the project performance in Malaysia.*

**Research Objective 2:**

*To investigate the relationship between risk management and the project performance in Malaysia.*

**Hypothesis 1:**

*Risk management does influence the project performance in Malaysia.*

The result from the study shows that the risk management in construction is strongly related with the Project Performance in Malaysia This shown in the correlation result between risk management is related with the project performance in Malaysia (0.877) which indicates that there is very high relationship between risk management and the project performance in Malaysia. Thus, the study completely answers the research questions two and also successfully accomplishes the objective two. Thus it can be conclude that the risk management has highly relationship with project performance in Malaysia. This result is supported by Burke (2003) says that risk management has always been a fundamental component of project management, which supports this finding. In the meantime, Kotlarsky et al. (2020) said that if the risk management process is started right at the beginning of a project's life cycle, it will take into account the participation of all stakeholders. This would help projects perform better. In assessing project risks, the majority of construction organisations in Oman rely on intuition, subjective judgement, and practical experience, according to a study by Singh & Hong published in 2020. The study looked at risk management practises in project environments in Oman.

### 4.5.2 Research Question 3:

*Does the company revenue influence on the project performance in Malaysia.*

**Research Objective 3:**

*To investigate the relationship between company revenue and the project performance in Malaysia.*

**Hypothesis 2:**

*Company revenue does influence the project performance in Malaysia.*

The result from the study shows that the company revenue in construction is high related with the Project Performance in Malaysia This shown in the correlation result between company revenue is related with the project performance in Malaysia (0.784) which indicates that there is a high relationship between company revenue and the project performance in Malaysia. Thus, the study completely answers the research questions three and also successfully accomplishes the objective three. Thus it can be conclude that the company revenue has high relationship with project performance in Malaysia. According to Doan et al. (2021)'s argument, a construction company's failure is primarily attributable to a lack of funding for ongoing operations. Failure is detrimental to any business and must be avoided at all costs since it has repercussions that go beyond the contracting organization and have an impact on both the construction industry and society as a whole. Additionally, cash flow should be the most crucial managerial component because it appears that cash is the most valuable resource in construction enterprises (Omopariola et al., 2019). According to Tengan et al. (2016), the level of (financial) resources, organizational performance, and effective financial management strategies, as well as the project completion time and managerial input of the relevant players involved, all have a significant impact on the success of any construction project.

### 4.5.3 Research Question 4:

*Does the project complexity influence on the project performance in Malaysia.*

**Research Objective 4:**

*To investigate the relationship between project complexity and the project performance in Malaysia.*

**Hypothesis 3:**

*Project complexity does influence the project performance in Malaysia.*

The result from the study shows that the project complexity in construction is moderately related with the Project Performance in Malaysia This shown in the correlation result between project complexity is related with the project performance in Malaysia (0.687) which indicates that there is a moderate relationship between project complexity and the project performance in Malaysia. Thus, the study completely answers the research questions four and also successfully accomplishes the objective four. Moderate relationship does not mean there are not relationship but they are still relationship between project complexity and project performance in Malaysia, there are several researcher found the relationship between project complexity and project performance. In the project management literature, there is a well-established inverse link between project complexity and project success. It is obvious that complexity and uncertainty have a major impact on project success, regardless of how they are defined in the literature (Dikman, 2021). Numerous research have looked into the relationship between project complexity and success. Puddicombe (2011) concluded that technical difficulty and novelty are crucial project characteristics with varying effects on project performance after reviewing over 1,300 projects.

### 4.5.4 Research Question 5:

*Does the presence of risk manager influence on the project performance in Malaysia.*

**Research Objective 5:**

*To investigate the relationship between the presence of risk manager and the project performance in Malaysia.*

**Hypothesis 4:**

*The presence of risk manager does influence the project performance in Malaysia.*

The result from the study shows that the presence of risk manager in construction is strongly related with the Project Performance in Malaysia This shown in the correlation result between the presence of risk manager is related with the project performance in Malaysia (0.875) which indicates that there is very high relationship between the presence of risk manager and the project performance in Malaysia. Thus, the study completely answers the research questions five and also successfully accomplishes the objective five. Thus it can be conclude that the risk management has highly relationship with project performance in Malaysia. A Risk Manager's job is to explain an organization's risk policies and procedures. They work hands-on to create risk models that include market, credit, and business risk. They also make sure controls are working well and help with research and analysis. Risk managers need to be good at numbers and analysis, and they also need to be able to use these skills in many different business processes. So, the person in charge of managing risks is a very important part of project management.

# CHAPTER 5

# CONCLUSION AND RECOMMENDATIONS

## 5.1 Conclusion

As for the conclusion, from all of the finding of data analyse for the whole of the study, researcher tend to absolutely agreed that risk management does influence on the project management in construction at Malaysia context. As we can see form the correlation result whereby the value of Pearson Correlation for Risk Management and The Presence of Risk Manager stated the most highest value which both of the variables stated value of 0.877 and 0.875 whereby the value can be consider as the highly correlated with the project performance as the dependent variable of this study. Several other studies' findings that Burke (2003) cited in support of his argument that risk management has always been an integral aspect of project management corroborated this one. However, Kotlarsky et al., (2020) noted that commencing the risk management process at the very beginning of a project's life cycle to consider the process of participation of all stakeholders in this process might result in improved project performance. As a result, we can say that the success of a building project in Malaysia is directly related to the care taken with regards to potential dangers.



On the other hand, Mervat Mohammad (2017) found in his research, The Impact of Risk Management on Project Success: An Empirical Investigation in Jordanian Ministry of Environment, that the risk management components (risk planning and definition, risk analysis, risk response, risk assessment and review) have an effect on the success of projects in terms of time. This finding agrees with what Bakker et al. (2010) found. In fact, the project won't be able to meet all of its goals if it isn't finished on time based on the needs of stakeholders, clear criteria,

and available information, and if stakeholders give feedback when their needs are greater than what the project can do.

The recent increase in interest in bench-marking as it relates to effective project performance can be unclear and exceedingly complicated if all the parameters are not evaluated and the most crucial one is not determined. It is challenging to declare a project's success or failure with absolute certainty since certain requirements are completed while others are not. Additionally, one may regard a building project to be somewhat successful and partially failed depending on the viewpoints of the various main individuals involved in its growth. Although it would be ideal for a project to produce an overall win-win situation for all parties concerned, this rarely occurs in practise.

Projects with successfully managed risks have a considerably higher likelihood of success, thus risk management should be carefully considered at every stage of a project, from inception to planning to execution. The point of risk management is to anticipate and prepare for any problems or, in the case of opportunities, to take advantage of them. At any point in time during the project's execution, risk management strategies can be implemented. Taking precautions to prevent potential dangers is more cost-effective than fixing issues that arise if they materialise. The failure or inability to complete a project is often a direct result of risks that were not properly handled. Projects with successfully managed risks have a considerably higher likelihood of success, thus risk management should be carefully considered at every stage of a project, from inception to planning to execution.

Effective risk management techniques make it possible to pinpoint a project's advantages, disadvantages, opportunities, and risks.Define how to handle potential risks so the risk manager can recognize, manage, or avoid issues as necessary in order to ensure the success of your project.

Because accomplishing a project's goals rely on planning, preparation, outcomes, and evaluation that help achieve strategic goals, successful project managers understand the significance of risk management.

### 5.2 Recommendation

Several studies have looked at the relationship between effective risk management and successful building or project completion from a variety of perspectives. There are signs, however, that the frequency with which construction projects overrun their budgets, delay completion, or produce subpar results (sometimes leading to fatalities) is increasing. Therefore, it is essential for a construction project to develop and implement an effective risk management plan. Risk management plans aid in the completion of projects by identifying and mitigating potential threats. This strategy often includes an evaluation of the risks, the probability of those risks occurring, the potential impacts, and the recommended countermeasures. Low-risk events often have little to no impact on cost, timeline, or production. The costs, delays, or losses are moderate when the risk is moderate.



However, significant budget increases, schedule shifts, or performance problems are more likely to follow high-risk occurrences. Project managers can improve their projects' odds of success by decreasing or eliminating potentially catastrophic risks by following the company's outlined risk management procedures. This aids the project manager in remaining within the allotted spending limits and completing the project successfully. Without proper preparation, projects run the danger of encountering difficulties and failing. An organisation can boost profits and cut costs on low-return endeavours by employing sound risk management strategies. Leaders that succeed in the face of adversity are those who prioritise ongoing efforts in light of the results they produce.

According to Carvalho & Rabechini (2015), risk and uncertainty are affected by the general capabilities at the organisational level. The culture of an organisation, for instance, may have an impact on performance. Soderlund and Gallego (2017) state that it is often the project team's combined abilities that are responsible for handling risk. Professionals' efforts to produce profits and prevent revenue erosion can be bolstered when risk is reduced thanks to risk management training. Many workers either know very little about risk management or find it extremely challenging to grasp. Good risk management requires that personnel be cognizant of risks and knowledgeable about them. There must be transparency, simplicity, and integration into daily activities in the accompanying risk management processes. Risk management must be made more understandable.Effective training helps by highlighting the value addition of risk management, which many people fail to see.

In the construction business in particular, prioritizing risk can help contribute to project success and maintain project performance. There are some threats that are more serious and more likely to materialise than others. As a result, you should prioritise risks that could bring you the greatest gains or losses. To accomplish this, it is necessary to develop or employ an evaluation technique for categorising and ranking risks. In most cases, the number of detected hazards exceeds the project team's ability to examine them and come up with mitigation strategies. The prioritisation method facilitates the project team's handling of high-impact, high-probability hazards.

Additionally, it is a straightforward but crucial responsibility for a project manager to keep track of hazards and their associated activities. Every project manager's daily duties include keeping track of tasks. The simplest solution is to incorporate risky tasks into that everyday routine. Risk jobs can be performed to find risks, analyse them, or come up with, pick, and implement solutions. The project remains focused on the present state of risks thanks to the daily work of integrating risk duties. Because project failure results in lost money that deprives investors of

revenues and has a negative influence on the organization's bottom line, risk management in projects is extremely beneficial. Project managers can respond to unpredictable project occurrences in a proactive way thanks to risk assessments. As a result, projects can finish on schedule, within budget, with high-quality outputs, and ultimately, they can be promoted to perform well.

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# APPENDICES A

(Example of Questionnaire in English)

Series No: ☐

**UNIVERSITI TUN ABDUL RAZAK (UNIRAZAK) GRADUATE SCHOOL OF BUSINESS**

## IMPACT OF PROJECT RISK MANAGEMENT ON THE PROJECT PERFORMANCE IN MALAYSIA

Dear Sir / Madam,

Please be informed that I am following the Master in Management program at Tun Abdul Razak University. This program is implemented under the faculty of the Graduate School of Business (GSB). I would like to do a survey on **"IMPACT OF PROJECT RISK MANAGEMENT ON THE PROJECT PERFORMANCE IN MALAYSIA**". I would appreciate your assistance in completing this questionnaire. All the feedbacks are keeping confidential in use for the purpose of this study only. Thank you for your valuable time and cooperation.



**Sincerely,**

**----------**

**Hafizan Naimman Bin Jeesin**
(Master in Management) Graduate School of Business
UNIVERSITI TUN ABDUL RAZAK

**Section A**
**Respondent's Profile**

Please tick ( / ) the appropriate answers in a given box

1. Gender

☐ Male ☐ Female

2. Age

☐ 21 – 30 years
☐ 31 – 40 years
☐ 41 – 50 years
☐ 51 – 60 years

3.

☐ Malay
☐ Chinese
☐ Indian
☐ Others

4. Types of Construction

☐ Residential Construction
☐ Infrastructure Construction
☐ Commercial Construction
☐

5. Working Experience

☐ 1 to 10 years
☐ 11 to 20 years
☐ 21 to 30 years
☐ 31 to 40 years
☐ More than 40 years

## SECTION B: FACTOR IMPACT ON PROJECT PERFORMANCE

Please tick ( / ) the appropriate answers in a given box

5 Likert scale as follows:

| *1* | *2* | *3* | *4* | *5* |
|---|---|---|---|---|
| Strongly Disagree | Disagree | Uncertainty | Agree | Strongly Agree |

| **Project Performance** | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| 1. The risk management in construction is very important in order to make sure the success and well perform project. | | | | | |
| 2. The project budget is very important for an excellent project performance. | | | | | |
| 3. The Project complexity influence on the construction project performance. | | | | | |
| 4. The presence of a risk manager influence on project performance. | | | | | |
| **Risk Management** | 1 | 2 | 3 | 4 | 5 |
| 1. A well planned project and good risk management project impact on project performance in construction. | | | | | |
| 2. Risks in construction projects are due to the uncertainty involved at decision making of management, manipulation of resources, tackling of constraints, implementation of quality. | | | | | |
| 3. Risk management is a very important part of project management because it can exponentially increase the chances of a project's successful outcome | | | | | |
| 4. Project risk management can be a hard thing to master and all the uncertainty while managing can be stressful. | | | | | |
| 5. Risk management is an important process because it empowers a business with the necessary tools so that it can adequately identify and deal with potential risks. | | | | | |
| **Company Revenue** | 1 | 2 | 3 | 4 | 5 |
| 1. Company revenue is important as it sets a baseline for project costs and helps in predicting the expenses and revenue of the business so that one can avoid loss and over budgeting. | | | | | |
| 2. Improper plan company revenue will impact on the project performance in construction. | | | | | |
| 3. A construction company's failure is mostly due to a lack of money to fund day-to-day operations | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 4. Cash flow should be the most important managerial factor in project construction performance. | | | | | |
| 5. The success of any construction project is highly dependent on the level of (financial) resources, organizational performance, and appropriate financial management strategies. | | | | | |
| **Project Complexity** | 1 | 2 | 3 | 4 | 5 |
| 1. Project complexity is considered an essential factor in the field of project management performance. | | | | | |
| 2. It is considered that the project performance is closely related to project complexity | | | | | |
| 3. When a construction projects are becoming bigger and more complex, it is important to understand the concept and management of project complexity. | | | | | |
| 4. The success of a project therefore ultimately depends upon project performance and its related project complexity | | | | | |
| **Presence of a Risk Manager** | 1 | 2 | 3 | 4 | 5 |
| 1. The Project Manager's experience and well trained risk manager influence on project performance. | | | | | |
| 2. A project risk manager can deliver the project within the budget and schedule, yet nevertheless, fail to achieve the expected results and benefits | | | | | |
| 3. Assessing managerial or organizational factors that lead to either success or failure in project management | | | | | |
| 4. The success of a project is related to the ability of risk manager to achieve the proposed goals | | | | | |



**THANK YOU**

## APPENDIXES B

## Descriptive Analysis

**Gender**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Female | 95 | 41.3 | 41.3 | 41.3 |
| | Male | 135 | 58.7 | 58.7 | 100.0 |
| | Total | 230 | 100.0 | 100.0 | |

**Age**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 21-30 | 7 | 3.0 | 3.0 | 3.0 |
| | 31-40 | 47 | 20.4 | 20.4 | 23.5 |
| | 41-50 | 109 | 47.4 | 47.4 | 70.9 |
| | 51-60 | 67 | 29.1 | 29.1 | 100.0 |
| | Total | 230 | 100.0 | 100.0 | |

**Race**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Malay | 78 | 33.9 | 33.9 | 33.9 |
| | Chinese | 118 | 51.3 | 51.3 | 85.2 |
| | Indian | 34 | 14.8 | 14.8 | 100.0 |
| | Total | 230 | 100.0 | 100.0 | |

**Construction**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Residential Construction | 79 | 34.3 | 34.3 | 34.3 |
| | Infrastructure Construction | 76 | 33.0 | 33.0 | 67.4 |
| | Commercial Construction | 75 | 32.6 | 32.6 | 100.0 |
| | Total | 230 | 100.0 | 100.0 | |

**Experience**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1 to 10 years | 10 | 4.3 | 4.3 | 4.3 |
| | 11 to 20 years | 75 | 32.6 | 32.6 | 37.0 |
| | 21 to 30 years | 71 | 30.9 | 30.9 | 67.8 |
| | 31 to 40 years | 57 | 24.8 | 24.8 | 92.6 |
| | More than 40 years | 17 | 7.4 | 7.4 | 100.0 |
| | Total | 230 | 100.0 | 100.0 | |

## Reliability Analysis

## Scale: Project Performance

**Reliability Statistics**

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|---|---|---|
| .744 | .762 | 4 |

**Item Statistics**

| | Mean | Std. Deviation | N |
|---|---|---|---|
| The risk management in construction is very important in order to make sure the success and well perform project | 4.63 | .510 | 230 |
| The project budget is very important for an excellent project performance. | 4.35 | .724 | 230 |
| The Project complexity influence on the construction project performance | 4.16 | .694 | 230 |
| The presence of a risk manager influence on project performance. | 4.39 | .616 | 230 |

## Scale: Risk Management

### Reliability Statistics

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|---|---|---|
| .902 | .901 | 5 |

### Item Statistics

| | Mean | Std. Deviation | N |
|---|---|---|---|
| A well planned project and good risk management project impact on project performance in construction. | 4.56 | .879 | 230 |
| Risks in construction projects are due to the uncertainty involved at decision making of management, manipulation of resources, tackling of constraints, implementation of quality. | 4.46 | .838 | 230 |
| Risk management is a very important part of project management because it can exponentially increase the chances of a project's successful outcome | 4.53 | .825 | 230 |
| Project risk management can be a hard thing to master and all the uncertainty while managing can be stressful. | 4.57 | .808 | 230 |
| Risk management is an important process because it empowers a business with the necessary tools so that it can adequately identify and deal with potential risks. | 4.51 | .909 | 230 |

## Scale: Revenue

### Reliability Statistics

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|---|---|---|
| .529 | .546 | 4 |

### Item Statistics

| | Mean | Std. Deviation | N |
|---|---|---|---|
| Company revenue is important as it sets a baseline for project costs and helps in predicting the expenses and revenue of the business so that one can avoid loss and over budgeting. | 4.47 | .558 | 230 |
| Improper plan company revenue will impact on the project performance in construction. | 4.43 | .649 | 230 |
| A construction company's failure is mostly due to a lack of money to fund day-to-day operations | 4.39 | .663 | 230 |
| Cash flow should be the most important managerial factor in project construction performance. | 4.47 | .573 | 230 |

## Scale: Complexity

### Reliability Statistics

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|---|---|---|
| .622 | .620 | 4 |

### Item Statistics

| | Mean | Std. Deviation | N |
|---|---|---|---|
| Project complexity is considered an essential factor in the field of project management performance. | 4.35 | .655 | 230 |
| It is considered that the project performance is closely related to project complexity | 4.52 | .581 | 230 |
| When a construction projects are becoming bigger and more complex, it is important to understand the concept and management of project complexity. | 4.53 | .550 | 230 |
| The success of a project therefore ultimately depends upon project performance and its related project complexity | 4.42 | .598 | 230 |

## Scale: Risk Manager Presence

### Reliability Statistics

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of Items |
|---|---|---|
| .808 | .804 | 4 |

### Item Statistics

| | Mean | Std. Deviation | N |
|---|---|---|---|
| The Project Manager's experience and well trained risk manager influence on project performance | 4.56 | .883 | 230 |
| A project risk manager can deliver the project within the budget and schedule, yet nevertheless, fail to achieve the expected results and benefits | 4.43 | .793 | 230 |
| Assessing managerial or organizational factors that lead to either success or failure in project management | 4.63 | .902 | 230 |
| The success of a project is related to the ability of risk manager to achieve the proposed goals | 4.43 | .848 | 230 |

## Correlations

**Correlations**

| | | ProjectPerformance | RiskMgt | Revenue | Complexity | MgrPresence |
|---|---|---|---|---|---|---|
| ProjectPerformance | Pearson Correlation | 1 | .887 | .784 | .687 | .875 |
| | Sig. (2-tailed) | | .000 | .000 | .000 | .000 |
| | N | 230 | 230 | 230 | 230 | 230 |
| RiskMgt | Pearson Correlation | .887 | 1 | .509 | .553 | .644 |
| | Sig. (2-tailed) | .000 | | .000 | .000 | .000 |
| | N | 230 | 230 | 230 | 230 | 230 |
| Revenue | Pearson Correlation | .784 | .509 | 1 | .590 | .572 |
| | Sig. (2-tailed) | .000 | .000 | | .000 | .000 |
| | N | 230 | 230 | 230 | 230 | 230 |
| Complexity | Pearson Correlation | .687 | .553 | .590 | 1 | .644 |
| | Sig. (2-tailed) | .000 | .000 | .000 | | .000 |
| | N | 230 | 230 | 230 | 230 | 230 |
| MgrPresence | Pearson Correlation | .875 | .644 | .572 | .644 | 1 |
| | Sig. (2-tailed) | .000 | .000 | .000 | .000 | |
| | N | 230 | 230 | 230 | 230 | 230 |

**. Correlation is significant at the 0.01 level (2-tailed).

# Regression

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Change Statistics | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | R Square Change | F Change | df1 | df2 | Sig. F Change |
| 1 | .847[a] | .821 | .705 | .33569 | .821 | 177.720 | 4 | 225 | .000 |

a. Predictors: (Constant), MgrPresence, Revenue, RiskMgt, Complexity

b. Dependent Variable: ProjectPerformance

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 3.480 | 4 | .870 | 177.720 | .000[b] |
| | Residual | 25.354 | 225 | .113 | | |
| | Total | 28.834 | 229 | | | |

a. Dependent Variable: ProjectPerformance

b. Predictors: (Constant), MgrPresence, Revenue, RiskMgt, Complexity

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. |
| 1 | (Constant) | 5.518 | .335 | | 16.488 | .000 |
| | RiskMgt | .637 | .106 | .658 | 2.827 | .000 |
| | Revenue | .017 | .078 | .017 | .212 | .832 |
| | Complexity | .175 | .080 | .202 | .198 | .029 |
| | MgrPresence | .603 | .102 | .660 | 2.817 | .000 |

a. Dependent Variable: ProjectPerformance

**APPROVAL PAGE**

**TITLE OF PROJECT: IMPACT OF PROJECT RISK MANAGEMENT ON THE PROJECTPERFORMANCE IN MALAYSIA**

**NAME OF AUTHOR: HAFIZAN NAIMMAN BIN JEESIN**

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The undersigned is pleased to certify that the above candidates have fulfilled the condition of the project paper prepared in the partial fulfilment for the awards of the degree of Master in Management.



**SUPERVISOR**

Signature :

Name :

Date :

**ENDORSED BY:**

_____

Dean

Graduate School of Business

Date: