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# Impact of Risk Mitigation and Project Management Tools on Organizational Performance: Evidence from Malaysian Organizations

Tamutaran Ravichandran\*1, and M. Reyasudin Basir Khan1

<sup>1</sup>Tun Razak Graduate School, Universiti Tun Abdul Razak, Kuala Lumpur, Malaysia.

#### **KEYWORDS**

Organizational Performance Effective Communication Project Planning Risk Mitigation Malaysia

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#### ABSTRACT

Organizations in Malaysia face significant challenges in project management due to rapid changes and increasing complexity in the business environment. This study aims to examine the relationships between effective communication, project planning, risk mitigation, project management tools, and organizational performance in Malaysian organizations. The objectives are to identify which factors significantly impact organizational performance and to provide insights for improving project management practices. The study utilized a quantitative approach, collecting data from a heterogeneous sample of employees across various industries in Malaysia. Multiple regression analyses were employed to assess the significance and strength of these relationships. The findings indicate that risk mitigation ( $\beta$ = 0.45, p < 0.01) and project management tools ( $\beta$  = 0.38, p < 0.01) have a significant positive impact on organizational performance. However, effective communication ( $\beta$  = 0.12, p > 0.05) and project planning ( $\beta = 0.15$ , p > 0.05) did not show statistical significance. These, results suggest that while communication and planning are important, the effective utilization of risk mitigation strategies and the adoption of advanced project management tools are crucial for enhancing performance outcomes. Managers should prioritize these areas to maximize organizational performance. This study provides empirical evidence from the Malaysian context, contributing to the understanding of project management practices and their impact on performance. The study is limited by its cross-sectional nature and potential response bias. Future research should consider longitudinal data and qualitative methods to explore the dynamic relationships among these variables.

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#### 1. Introduction

In the present fast-moving and dynamic business environment, organizations have to keep changing to remain competitive (Momeni & Martinsuo, 2018). Effective management of projects will help an organization sail through this dynamic environment by properly managing its resources, beating deadlines, and reaching set goals. Those are reasons of prime importance for its success (Picciotto, 2020). However, the major problem faced by most organizations is the implementation of PM methodologies, whereby they end up performing poorly or, at times, failing projects. As such, this research investigates poor communication, insufficient project planning, and a lack of risk mitigation as issues impacting organizational performance (Bogojevic, 2020). The focus of

this work is to establish the relationship that exists between project management methodologies and organizational performance in Malaysian organizations, including how effective communication, project planning, risk mitigation, and the adoption of project management tools relate to performance outcomes. It, therefore, seeks to answer how effective communication affects organizational performance, the impact of project planning on organizational performance, how risk mitigation influences organizational performance, and the role of project management tools in enhancing organizational performance. The importance of the study is that it gives insight into how various project management practices affect organizational performance. The findings will be useful for managers to strategize and channel their energy on those efficiency- and effectiveness-enhancing strategies if overall

<sup>\*</sup>Corresponding author:

results are to be improved. This study will add value to the existing literature and avail business practice recommendations for organizational project management improvement initiatives across different industries. Particularly, this is about Malaysian organizations from different industries, with a quantitative approach in collecting and analyzing data from employees who manage projects at different levels. The study is consequently limited to the fact that this is a cross-sectional design; that is, data are only captured at a single point in time and hence may contain biases in the responses. Further research on longitudinal data could be additionally done to understand the deeper links within the variables dynamically.

#### 2. LITERATURE REVIEW

# 2.1 Theoretical Foundation

# 2.1.1 Agile Technique

Agile technique is a modern concept of project management based on flexibility, collaboration, and customer feedback. Iterative progress through small manageable tasks or rather, called sprints is one of the hallmarks of this technique (Nasim & Mustafa, 2015). Hence, agile provides teams the capability to change directions very fast, if need be, improving the result of the project continuously. The methodology will hence be of much use in environments where requirements are likely to evolve and in which the speed of delivery of products is essential.

#### 2.1.2 Waterfall Model

The Waterfall model is a traditional project management strategy with linear and sequential steps. The whole process it undergoes is basically the following: requirement analysis, system design, implementation, integration and testing, deployment, and maintenance. Each phase must be completed, and only then can a new step in the process begin (Hanief, Pratama, & Awibowo, 2020). Due to this, it becomes easy to understand and manage a process. On the other hand, the very structured nature of the Waterfall model makes it not so flexible in terms of complying with changes while the project is in progress.

#### 2.1.3 Critical Path Method

The Critical Path Method is a sequential technique of project planning and scheduling that assists in the organization of complicated jobs (Goryachev, Goryachev, Monakhov, & Novakova, 2016). It details the identification of tasks that are critical and non-critical to the completion of a project. Attention must be paid to the longest sequence of activities that needs to be completed on schedule if the project is to be finished on time. CPM is very effective in time-bound projects, as it pinpoints probable delays and helps in the best utilization of resources.

#### 2.2 Empirical Research

# 2.2.1 Challenges in Project Management Implementation

These are some of the most common problems that may hamper the application of project management methodology due to ineffective communication among group members, insufficient planning, and lack of risk management(Rezaee, Yousefi, & Chakrabortty, 2019). Many organizations face a lot of difficulties in aligning the goals and objectives of the projects with the business goals and objectives, managing the expectations of stakeholders, and keeping proper coordination among the group members; these

sometimes lead to project delay, cost overrun, and finally, project failure.

# 2.2.2 Impact of Project Management on Organizational Performance

Empirical studies indicate that effective practices of project management are strongly linked to enhanced organizational performance. It helps the organizations use resources effectively, meet project deadlines, and produce the desired outcome(Hair Jr, LDS Gabriel, Silva, & Braga, 2019). In this context, improved project management can increase productivity, quality of deliverables, and stakeholder satisfaction, hence contributing to the success of the organization.

# 2.2.3 Risk Mitigation in Project Management

Essentially, risk mitigation may be understood to be a component of successful project management. The process involves the identification of potential project risks, evaluating their impact, and devising plans to mitigate them. Proper management of risks significantly reduces the rate of project failure by pre-emptively dealing with uncertainties (Schnackenberg & Tomlinson, 2016). This brings about highly predictable project results, greater extent of control over resources, and Project performance improvement.

# 2.3 Proposed Conceptual Framework

The conceptual framework for the study under consideration shows the hypothesized links between the project management practices and the different organizational performances. The variables of key dimensions include those regarding improved communication, detailed planning of projects, mitigation in risk factors by design, and use of tools on project management. It expects that such dimensions are positively related to and impact organizational performance in ways that bring efficiency to performance, limiting exposure to risk, and that the results of the project and customer needs meet expectations. This forms a kind of guiding conceptual framework through which the study of research hypotheses is conducted and by which data should be collected and analysed.

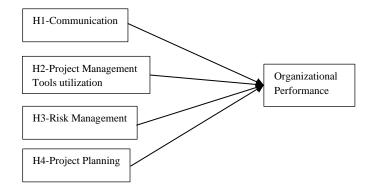


Fig. 1. Conceptual Framework

#### 2.4 Hypothesis Development

Based on the insights gained from the literature review, the following hypotheses are developed to explore the impact of project management practices on organizational performance:

H1 Communication: Effective communication practices are positively associated with improved organizational performance.

H2 Project management tools utilization: Increased utilization of project management tools leads to better organizational performance outcomes.

H3 Risk mitigation: Proactive risk mitigation strategies have a positive impact on organizational performance.

H4 Project planning flexibility: Organizations that adopt flexible project planning approaches achieve higher levels of performance compared to those with rigid structures.

#### 3. RESEARCH METHODOLOGY

#### 3.1 Research Design

This research is of a quantitative nature. Relying on the nature of the quantitative approach, it will enable the objective measurement of the effect of project management practices on organizational performance using statistical analysis in the data collected.

# 3.2 Study Population and Sampling Procedures

The sample is of employees across all organizations in Malaysia undertaking projects. Stratified random sampling was used in this regard to ensure random distribution. According to the distribution of questionnaires, 80 questionnaires were issued to employees, but 64 valid ones were returned.

# 3.3 Ethical Considerations

The present research work was undertaken with full awareness of ethical considerations. Every respondent was made aware of the purpose of the research and assured that participation would be completely anonymous and confidential. Lead-ins by written consent were managed for eliciting the consent of all participants involved in the study before actual data collection by the researcher.

#### 3.4 Data Collection Method

The data was gathered through structured questionnaires, administered through email. The questionnaire contains demographic data, project management practices, organizational performance, all with a Likert scale from 1 for strongly disagree to 5 for strongly agree.

#### 3.5 Operationalization and Measurement

The variables in this study were operationalized as follows:

Effective Communication: Measured by items assessing clarity, frequency, and effectiveness of communication within the project team.

Project Planning: Measured by items evaluating the comprehensiveness and detail of project plans.

Risk Mitigation: Measured by items assessing the identification, assessment, and management of project risks.

Project Management Tools: Measured by items evaluating the usage and effectiveness of various project management tools.

Organizational Performance: Measured by items assessing project outcomes, including timeliness, budget adherence, and stakeholder satisfaction.

#### 3.6 Data Analysis Techniques

#### 3.6.1 Descriptive Analysis Techniques

Descriptive statistics involving mean, median, standard deviations, and frequency distributions have been used in summarizing the demographic data and other main variables.

#### 3.6.2 Multiple Regression Analysis

In the present study, multiple regression analyses were used to test the influence of project management practices as independent variables on organizational performance as the dependent variable. This analysis helped identify the degree of influences of every one of them on organizational performance.

#### 4. RESULTS AND DISCUSSIONS

#### 4.1 Response Rate

The survey achieved a response rate of 80%, with 64 out of 80 distributed questionnaires completed and returned. This response rate is considered adequate for the statistical analysis conducted.

## 4.2 Demographic Profile

#### 4.2.1 Position/Role

Figure 2 summarize the roles of the 64 questionnaire respondents. They are categorized into three groups: leadership and management, technical and professional, and support and administrative. Of the respondents, 53.1% are in technical and professional roles, 26.6% are in leadership and management, and 20.3% are in support and administrative. The pie chart confirms this distribution, emphasizing the predominance of technical and professional roles among the respondents.

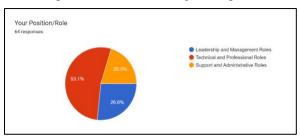
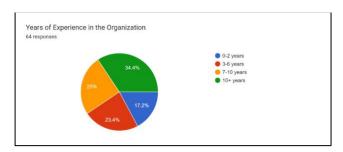


Fig. 2. Statistics of Respondent's Position/Role

# 4.2.2 Years of Experience in the Organization

Figure 3 present the years of experience respondents have with the organization. The pie chart shows the percentage of respondents with prior experience, while the table displays the frequency of such experience. Notably, 23.4% of respondents have three to six years of experience, and 17.2% have less than two years. Overall, the data suggest that a significant portion of respondents have some level of prior interaction with the organization.



**Fig. 3.** Statistics Respondent's Years of Experience in the Organization

# 4.2.3 Highest Level of Education

The dataset highlights the impact of respondents' educational backgrounds on their perceptions of organizational performance. Figure 4 shows the distribution of respondents by their highest level of education: 25% have a college or university diploma, 42% hold an undergraduate degree, 26% possess a master's, doctoral, or PhD degree, and 6% have a professional certification. This distribution in a pie chart, emphasizing the diversity in educational backgrounds. This analysis, combined with job roles, provides a comprehensive view of the factors influencing respondents' perspectives on organizational success.

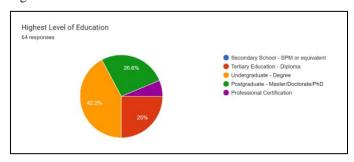


Fig. 4. Statistics Respondent's Highest Level of Education

# 4.3 Reliability Testing

The validity of the study questionnaire is evaluated using the SPSS version 23 reliability test, specifically examining Cronbach's alpha values to determine internal consistency. Cronbach's alpha values close to 1 indicate greater reliability by Peterson & Kim, 2013. Table 1 presents the Cronbach's alpha values for each variable, highlighting the reliability of the survey instrument.

The results of the reliability analysis indicate strong internal consistency across various aspects of project management. Effective Communication Practices exhibit very strong internal consistency, as evidenced by a Cronbach's alpha of 0.974. Project Planning shows high reliability and quality with a Cronbach's alpha of 0.889. Risk Mitigation demonstrates a high level of internal consistency, reflected in a Cronbach's alpha of 0.935. Project Management Tools indicate very high performance and reliability with a Cronbach's alpha of 0.958. Lastly, Organizational Performance shows a strong level of performance and internal consistency, as indicated by a Cronbach's alpha of 0.913. These values collectively suggest robust reliability in these areas of project management.

Table 1. Reliability Analysis Testing

Variables	N	Num of Items	Cronbach Alpha
Effective Communication	64	4	0.974
Practices			
Project Planning	64	4	0.889
Risk Mitigation	64	4	0.935
Project Management Tools	64	4	0.958
Organizational Performance	64	4	0.913

# 4.4 Descriptive Analysis

This descriptive analysis evaluates several key aspects of project management within the organization, including effective communication practices, project planning, risk mitigation, project management tools, and overall organizational performance.

# 4.4.1 Effective Communication Practices

The data indicates that the organization maintains frequent and effective communication among team members, with a mean score of 1.56 (SD=0.784) for communication frequency, suggesting regular engagement. Clarity of communication channels and instructions is rated at 1.89 (SD=0.594), reflecting positive perceptions of clear guidance. The effectiveness of communication tools is highly rated at 1.16 (SD=0.366), showing strong agreement on their utility. Overall, communication within the team is seen as clear and effective, with a mean score of 3.84 (SD=0.761). These findings suggest robust communication practices that support efficient collaboration and project management, although there is room for improvement by standardizing communication techniques to ensure uniformity.

#### 4.4.2 Project Planning

The organization demonstrates generally robust project planning practices. Adherence to initial plans and schedules has a mean score of 2.02 (SD=0.577), indicating moderate consistency. The comprehensiveness and effectiveness of planning processes are rated at 3.48 (SD=1.008), showing a positive but variable perception. Satisfaction with the detail and clarity of project plans is high, with a mean of 1.11 (SD=0.315). Alignment of project plans with organizational goals is rated favourably, at 3.75 (SD=0.797). These results highlight strong planning practices, with opportunities for improving adherence to initial plans and addressing discrepancies in planning procedures.

# 4.4.3 Risk Mitigation

Risk mitigation practices are proactive, with regular risk assessment activities scoring a mean of 1.98 (SD=0.654). Techniques for identifying project risks have a moderate efficacy rating of 3.06 (SD=0.687). Confidence in the organization's ability to manage unforeseen risks is moderate, with a mean of 3.17 (SD=0.725). The integration of risk management into project processes is rated highly at 3.81 (SD=0.794). Overall, the organization demonstrates a proactive approach to risk management, with areas for improvement in risk identification and response confidence.

#### 4.4.4 Project Management Tools

Project management tools are perceived as effective, with regular usage scoring a mean of 2.03 (SD=1.038) and the perceived usefulness rated highly at 1.13 (SD=0.333). Satisfaction with the availability and accessibility of these tools is high, with a mean of 3.78 (SD=0.826). The positive impact

of these tools on project success is rated at 3.73 (SD=0.740). These findings suggest that project management tools are valued and contribute significantly to project success, although there is variability in usage and satisfaction.

#### 4.4.5 Organizational Performance

Project performance in terms of key performance indicators (KPIs) such as on-time delivery and budget adherence have a mean score of 2.13 (SD=0.604). Stakeholder satisfaction with project outcomes is rated at 3.64 (SD=0.897), and the perception of organizational metrics such as revenue growth and market share in relation to projects is rated at 3.73 (SD=0.782). Overall organizational performance is also rated at 2.13 (SD=0.604). These results indicate positive stakeholder satisfaction and alignment with organizational goals, though there is moderate performance in meeting KPIs.

#### 4.5 Correlation Analysis

A correlation analysis was conducted to explore the relationships between the independent variables (Effective Communication Practices, Project Planning, Risk Mitigation, and Project Management Tools) and the dependent variable (Organizational Performance). The Pearson correlation statistics are summarized in Table 2.

**Table 2.** Finding of Pearson Correlation

Table 2. I maing of I carson Correlation						
Correlations						
		DV	IV 1	IV 2	IV 3	IV 4
Organizational	Pearson	1	.215	.203	.474**	.614**
performance	Correlation					
(DV)	Sig.(2-		.087	.107	.000	.000
	tailed)					
	N	64	64	64	64	64
Effective	Pearson	.215	1	.069	082	.265*
Communication	Correlation					
Practices	Sig.(2-	.087		.585	.519	.034
(IV 1)	tailed)					
	N	64	64	64	64	64
Project	Pearson	.203	.069	1	.112	.098
Planning	Correlation					
(IV 2)	Sig.(2-	.107	.585		.377	.440
	tailed)					
	N	64	64	64	64	64
Risk Mitigation	Pearson	.474**	082	.112	1	.449**
(IV 3)	Correlation					
	Sig.(2-	.000	.519	.377		.000
	tailed)					
	N	64	64	64	64	64
Project	Pearson	.614**	.265*	.098	.449**	1
Management	Correlation					
Tools	Sig.(2-	.000	.034	.440	.000	
(IV 4)	tailed)					
	N	64	64	64	64	64
**. Correlation is						
<ul> <li>Correlation is s</li> </ul>	ignificant at th	e 0.05 lev	el (2-tail	led).		

# 4.6 Multiple Regression Analysis

Regression analysis is a statistical technique used to examine causal links between variables. It is often used to test hypotheses and ascertain the ways in which certain variables affect results.

The outcomes of a regression analysis are presented in Table 3. The dependent variable was predicted using four independent variables: Effective Communication Practices, Project Planning, Risk Mitigation, and Project Management Tools. This instance demonstrates that the combined effect of these predictors' accounts for 45.3% of the variation in the dependent variable, as indicated by the value of 0.453. This is a

considerable sum, indicating that the sum of these factors has a substantial effect on the outcome.

**Table 3.** Model Summary

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	
1	.673ª	.453	.416	.83410	

a. Predictors: (Constant), Effective Communication Practices, Project Planning, Risk Mitigation, and Project Management Tools

#### 4.7 Summary of Findings

Using multiple regression, the effects of each dependent variable on the independent variable are analysed. The independent variable, Effective Communication Practices, Project Planning, Risk Mitigation, and Project Management Tools is assessed in relation to the extent to which a dependent variable (Organization Performance). Correlation, on the other hand, illustrates the connection between two variables. Table 4 presents the results obtained.

Table 4. Summary of Findings

Hypothesis	Multiple Regression	Correlation result
H1: Effective communication practices are positively associated with improved organizational performance.	Rejected	Rejected
H2: Increased utilization of project management tools leads to better organizational performance outcomes.	Accepted	Accepted
H3: Proactive risk mitigation strategies have a positive impact on organizational performance.	Accepted	Accepted
H4: Organizations that adopt flexible project planning approaches achieve higher levels of performance compared to those with rigid structures.	Rejected	Rejected

#### 4.8 Discussions

The discussion interprets the findings in the context of existing literature and theories, addressing the research questions posed. Effective communication practices, including proficiency in communication tools, regularity, and clarity, are perceived positively by team members, aligning with Mbhele and De Beer (2021). However, the correlation with organizational performance is not statistically significant, suggesting other factors might be influential.

Project management tools are highly regarded by team members, with significant positive correlations to organizational performance. This supports the findings of Dasović et al. (2020) and underscores the tools' critical role in project success within the Malaysian context.

Proactive risk mitigation strategies show a moderate positive correlation with organizational performance, with high

confidence and engagement among team members. This corroborates Tarei et al. (2021), highlighting the importance of integrating risk management into project workflows to enhance organizational success.

Project planning practices receive mixed feedback. While clarity and detail in plans are highly rated, adherence to initial plans varies, resulting in no significant correlation with organizational performance. This suggests a need for further research into the impact of flexible planning approaches.

Overall, the study emphasizes the importance of effective communication, project management tools, and proactive risk mitigation in organizational performance. It recommends allocating resources towards robust project management and risk mitigation strategies, with further research needed to explore these dynamics across different settings.

#### 5. CONCLUSION AND RECOMMENDATIONS

This study underscores the critical role of risk mitigation strategies and project management tools in enhancing organizational performance, alongside effective communication practices and detailed project planning. It highlights the need for organizations to prioritize proactive risk management and the efficient use of project management tools to improve outcomes. These findings provide valuable insights for managing operational complexities and optimizing performance.

Future work should involve larger, more diverse samples to improve generalizability and employ longitudinal designs to establish causal relationships. Additional factors such as leadership styles, organizational culture, and external environments should be explored to gain a comprehensive understanding of organizational performance drivers. This will provide practical, evidence-based strategies for organizations aiming to enhance their effectiveness and success.

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