Journal of Humanities, Social and Management Sciences (JHSMS)
eISSN: 2788-4791 (online)
https://ideapublishers.org/index.php/jhsms
Vol. 5, No. 2 (July-December), 2024, pp. 1-20
https://doi.org/10.47264/idea.jhsms/5.2.1
Original Research Article

Impact of project planning and project risk management on project success: moderating role of project managers' competencies in the construction sector in Afghanistan

Riazulhaq Fazly[1] | Nafla Raees[1] | M. Qaiser Shafi[2] | Shakir Iqbal*[3] | M. Javid Nawaz[4]

1. Department of Management Science, Riphah International University, Islamabad, Pakistan.
2. FAST School of Management, National University of Computer & Emerging Sciences, Islamabad, Pakistan.
3. Department of Management Sciences, Abasyn University, Peshawar Campus, Peshawar, Pakistan.
4. Department of Project & Operation Management, The Islamia University of Bahawalpur, Punjab, Pakistan.

*Corresponding Author Emails: shakiriqbal499@gmail.com

Article History

Received:
01-Jul-2024

Revised:
19-Jul-2024

Re-revised:
19-Aug-2024

Accepted:
22-Aug-2024

Published:
22-Sep-2024

Abstract: This research examines the impact of project planning (ProP) and project risk management (RisM) on project success (ProS) while maintaining project managers' competencies (PMC) as moderators using resource-based view theory concepts. This research addresses the gap in how ProP and RisM lead to ProS in the presence of a PMC as a moderator in construction-based private organisations. Utilising a convenience sampling technique, data were collected from 249 participants working in construction-based organizations across major cities in Afghanistan. Data were analysed using Smart-PLS and SPSS software. Supporting theories for this study are the theory of knowledge reuse and the social exchange theory concepts. Analysis revealed that ProP significantly and positively impacted ProS. RisM was also found to have a positive effect on project success. The results showed that project managers' competencies moderated the relationship between ProP and ProS. The findings indicated that PMC moderates the connection between project risk management and ProS. Implementing project planning methodologies, a construction project manager's competency improves team outcomes through risk management and boosts project success. The study's limitations, future suggestions, and managerial implications are also discussed.

Keywords: Project planning, Project risk management, Project managers' competencies, Project success, Construction industry, Project management, Project planning.

How to Cite: Fazly, R., Raes, N., Shafi, M. Q., Iqbal, S., & Nawaz, M. J. (2024). Impact of project planning and project risk management on project success: moderating role of project managers' competencies in the construction sector in Afghanistan. *Journal of Humanities, Social and Management Sciences (JHSMS), 5*(2), 1-20. https://doi.org/10.47264/idea.jhsms/5.2.1

1. Introduction

The construction sector is vital to global infrastructure development and contributes significantly to economic growth and societal advancement (Fareed et al., 2024). The success of a construction project (ProS) must also be examined (Salem et al., 2022). A recent study highlighted the critical relevance of project planning (ProP), risk management, and project manager competency (PMC) in obtaining effective outcomes in the construction sector (Ashraf et al., 2023; Irfan et al., 2022). Because these elements are interconnected and ever-changing, it is critical to study their intricate relationships to improve project success and promote overall industry excellence. Project planning plays an important role in construction projects because it describes how project objectives are fulfilled and the schedules and resources that need to be used (Banihashemi et al., 2017). ProP maps out the project, emphasizing elements that may hamper or slow down the project, and determinants that may help improve the project, making the process efficient (Demirkesen and Ozorhon, 2017). The most critical aspect of ProS is proper planning. ProP requires the development of a complete project layout ahead of time, like generating a project map. ProP substantially contributes to the successful completion of construction projects (Akinradewo et al., 2022).

Project success is important to project management (Prabhakar, 2009). The success of project management is related to the soft dimensions of the project, where the concern of the project team is involved, and the management of the project contributes to the project success. for project management success, we need the successful and responsible performance of project team members (Ika, 2009). The ProS would be measured by the project's unique features, willingness to comply with the specific budget, planned timetable, and customer satisfaction and happiness (Di et al., 2023).

Project planning is regarded as the most significant part of the field of management. In project management, the best planning for a project is considered the key and important contributor to the project's success (Singh & Ahmed, 2014). The most critical factor in a project's success is careful planning. Project planning is arranging the entire project layout ahead of time, similar to creating a project map. ProP substantially contributes to the successful completion of construction projects (Akinradewo et al., 2022). Effective project planning requires a thorough technique for defining project objectives, scope, and resource allocation and establishing realistic timelines (Kafile, 2021; Sudha et al., 2020). The success of any project can be measured by its completion period within the set budget and within the expected budget, so planning for these metrics is important for the project's success. recent studies indicate that many projects have failed due to inadequate and poor project planning (Tesfaye et al., 2017). Therefore, to enhance the execution of the project result, a systemic change in project planning is needed in various organizations. In addition, the main areas need to be recognized to address issues with project planning activities and to take corrective action.

In addition to project planning, risk management is important in the project since it entails detecting, evaluating, and mitigating risks that may influence the project or cause expenses to go beyond (Elkrghli & Almansour, 2024). RisM is a fundamental component of construction ProS, focusing on risk response as a key aspect in accomplishing project goals (Ghaeb & Mahjoob, 2023). This procedure should be dynamic, continuous, and real-time, particularly in complex and significant civil engineering projects to handle the constantly changing risk exposure environment (Tshering, 2023). The key and the most critical role played by the project managers, due to the role of project managers the projects successful; the early

management of the project as a profession, project planning, and implementation are considered the main pillars (Parvadavardini et al., 2015). Several factors play a leading role in ProS, including technical knowledge of the project manager, competence, experience, adequate communication skills of the project team, etc. (Davis, 2014).

Research performed for this theory reveals new criteria for successful initiatives and expands on the fundamental criteria. Prior research has mainly concentrated on each of the characteristics as mentioned earlier individually, with little regard for the intricate interaction between the variables (Hotchkiss & Seekamp, 2024). This is the research gap that this study attempts to fill by studying the moderating roles of project manager competencies, project planning, RisM, and ProS, particularly in the construction industry (Al-Balawneh & Tarabieh, 2024). Furthermore, there is limited study on project managers' competencies as moderators between planning and ProS, which offers a novel perspective on this problem (Onyango, 2023). Milijić et al. (2020) intend to increase understanding of project outcomes and provide practical recommendations for construction organizations. The outcomes of this study will enrich the state of knowledge by covering the specified research gaps while contributing to establishing the best practices in the sector (Yilmaz et al., 2024).

Fareed et al. (2024) emphasized that the relationship between ProP, RisM and ProS completion in the construction industry in underdeveloped nations is still in its early stages. To address these gaps in the existing literature, this research goals to examine the effect of ProP, RisM on ProS, with the role of Project Managers' Competencies serving as moderator and answers the following questions: Many studies have been conducted in many industries to investigate the mediating function of ProP and RisM. However, the Project Managers' Competencies research is unique and has a moderating effect. Thus, the research questions for this study are: (a) What is the role of project planning in achieving ProS? (b) Does RisM impact project success? (c) Does Project Managers' Competencies moderate the connection between ProP and ProS? and (d) Does PMC moderate the relationship between RisM and PS?

This study focuses on private engineering firms based in Afghanistan. Considering this research, the private sector can potentially improve its implementation. Project managers would benefit from a better understanding of the methodologies for project planning practices, project risk management, and project managers' competency practices to improve the overall execution of private sector firms. Furthermore, this research will serve as an indicator of distinct segments and will assist managers, engineers, and project managers in explaining the myths surrounding these variables and better understanding the effect of project planning and RisM on ProS through project managers' competencies.

2. Literature review

2.1. Project planning and project success

Construction projects require effective scheduling and planning (Harshavardhan et al. 2023). Effective execution of construction projects relies heavily on proper planning (Akinradewo et al., 2022). A well-structured project plan outlines the project's goals, objectives, and results (Mykytyuk et al., 2024). Project success is a sequence of activities that include planning, implementation, and supervision to satisfy goals that have been stated and implemented (Setiawan et al., 2023). Project success is crucial for organizations, building stakeholder trust and loyalty (Bugarčić & Slavković, 2022). A successful project enhances an organization's

capabilities and creates a sense of accomplishment among project teams (Gomes & Romão, 2023). The relationship between ProP and ProS is complex (Irfan et al., 2021; Zanezi et al., 2023), and effective planning contributes significantly to project success by ensuring that project objectives are well-defined and aligned with stakeholder expectations.

Several researchers have described the concept of project planning in various ways. According to Bjarnason (2015), planning for the project involves deciding on what should be done and how to be done, and what is the order to accomplish the specific goals and planning aims to achieve the future course of action; further, he also says that project planning identifies what needs to be done by whom, how, why, and where to achieve the desired output. According to Laird (2016), project planning is a thought process that identifies the necessary priorities, goals, and strategies to complete a project within a timeline according to the budget or process that takes its rightful position in executing the project owner's strategies. The project concept is used for a scheme or proper plan with a minimum description (Javed et al., 2012), which is an effective collection of coordinated activities with well-defined start and end points to achieve certain planned outcomes and clearly defined goals.

Zwikael et al. (2014) found that ProP is critical and directly impacts ProS. The results show that there is a moderate link between ProP and ProS. The practical implications of these findings suggest that project managers in high-risk projects should focus more on project planning to achieve project efficiency. This analysis provides a valuable source of information that successful ProP positively affects the ProS. Based on the argument presented above, we assume the following hypothesis:

H1: Project Planning has a significant and positive impact on ProS.

2.2. Project risk management and project success

Risk can be defined as an unclear event with a negative or positive influence (Ahimbisibwe et al., 2015). The method of systematically defining, evaluating, and minimizing risks is called project risk management, which increases the probability of project completion and the project failing if the project manager does not handle or reduce the risk (Yim et al., 2015). The Resource-Based View (RBV) hypothesis developed by Barney (1991) and Wernerfelt (1984) states that optimizing resource allocation improves project performance by aligning project planning with effective risk management measures. This means that a well-structured project plan should consider potential risks and challenges, allocate resources efficiently to mitigate these risks, and ultimately contribute to ProS. Effective RisM requires project teams to proactively identify and develop ways to handle possible hazards (Panahi et al., 2023), which lowers the likelihood of costly disruptions. Budget overruns and delays are key factors that can undermine ProS.

According to Teller et al. (2014), project RisM enables a corporation to reduce the negative impact and improve the positive impact of potential project accidents while also identifying possibilities. Project risk management is an important project risk component, and the project manager's role is to detect and identify distinct risk factors and to incorporate their engagement with project success, as well as risk identification, prevention, and monitoring in the RisM process (Gitau, 2015). The RisM approach provides the company with guidance to reduce the complexity in an enterprise management organization, to reduce the risk of flaws in continuous marketing in manufacturing and business in the market, so the risk management methodology

can minimize business profits and reduce costs and also produce business value (Verbano & Venturini, 2013).

According to (Teller et al., 2014), improved awareness and understanding of the risks are linked to the project's economic, time, quality, and economic objectives. It can be understood that risk management and knowledge sharing are shared among project managers by introducing similar procedures and resources in the management of project risks. In general, many risk identification procedures need thorough expertise and a review of previous initiatives, according to Yim et al. (2015), and are focused on retrospective research by experts. Furthermore, Teller et al. (2014) and several studies have shown that risk and ProS are positively correlated. The significance of the project's risk management was identified in the study by Pimchangthong and Boonjing (2017) because it prepares project reviews to look at risks and opportunities to increase the ProS. The outcome of this study indicates that risk detection and IT project success have the greatest positive effect.

The impact of management risk on ProS was assessed by (Rabechini Junior and Monteiro de Carvalho, 2013). This study also found that the presence of a risk manager had a favourable and significant impact on project success, demonstrating the requirement for soft skills in risk management. In this report, (Al-Shibly et al., 2013) studied "The impact of risk management on construction projects success from the employee's perspective," and the survey has two sections. In the first part, the approach adopted by the company for risk management was asked about, and in the second part, the survey sought to explain the reasons why the project accomplished the success criteria. This hypothesis extends to studies that support the importance of controlling uncertainties in achieving project objectives. Furthermore, research focuses on which suitable risk management strategies reduce possible interferences and improve other critical efficiency measures, such as quality and satisfaction rates (Okika et al., 2024). This theoretical framework recognizes the significance of RisM in enhancing coordination between the implementation of building projects and organizational goals (Amoah & Pretorius, 2019). Based on the argument presented, we make the following assumption:

H2: RisM has a significant and positive impact on Project Success.

2.3. The moderating role of project managers' competencies between project planning and project success

The importance of ProP for ProS can be assessed from this assertion that variation or deviation from the original project plan can be one of the main causes of project failure; if we do not deviate from the original project plan, the project can lead to success (Umulisa, Mbabazize, & Shukla, 2015). The project manager can easily make decisions on the four basic elements of planning because, in project planning, the first component is the goal, which defines the potential situation to be accomplished in the future; the second element is actions which are the concrete tasks expected to achieve the project aims; the third element is resources, which are the limitations on the course of action; and the fourth element is implementation, which is ways and means to implement the intended actions (Javed et al., 2012).

The researcher regards project planning as a basic key to a project's success, and it must be recorded systematically to indicate all project information about how the project will be executed, managed, controlled, and closed (Bjarnason, 2015). The project manager (PM) plays

a central and substantial role in the effective planning of the project, according to Kerzner (2013), because the PM plans project planning and the project planning is systematic and versatile for dealing with specific tasks, discipline by audits and controls, and the ability to consider multifunctional inputs. The execution of a proper project plan will affect the project's success, along with the cost and schedule (Zwikael et al., 2011).

Knowing team members' emotions allows a construction project manager to influence and manipulate them to meet their needs (Fisher, 2011). Wu et al. (2017) examined the "communication" part of PMC. According to their research findings, task conflict impacts project success, and strong communication will help to overcome it. The study's findings revealed a significant positive association between communication competency and ProS. Obradovic, et al. (2013) analyzed the relationship between the PMC and the ProS. The correlation analysis demonstrates a positive association between PMC and their professional success. Managerial qualities are strongly related to project success. Zhang et al. (2018) concluded that cooperation satisfaction is crucial to project outcomes. Furthermore, the study's conclusions address the significance of human skills, the PM leadership style, and various other abilities and skills that influence project management and project outcomes. Thus, the study hypothesizes:

H3: Project Managers' Competencies moderates the relationship between ProP and ProS so that this relationship will be stronger when Project Managers' Competencies are high.

2.4. The moderating role of project managers' competencies between project risk management and project success

Many scholars have studied the direct relationship between the PMC and ProS. On the Six Sigma project, Marzagao & Carvalho (2016) examined success factors. The findings of the data obtained from company project managers show that there is a positive relationship between the PMC and ProS. Coleman (2014) conducted a correlation study to examine the relationship between PMC, education, and professional experience regarding career success. Brière et al. (2015) investigated project managers' competencies and discovered that they are high throughout the critical period of project transition. Project managers' skills and effective management boost project efficiency and raise the project's chances of success. Interpersonal competencies and skills, such as the leadership style of a project manager, collaboration, teamwork, and cooperation, play a vital part in achieving organizational success (Cserhati & Szabo., 2014).

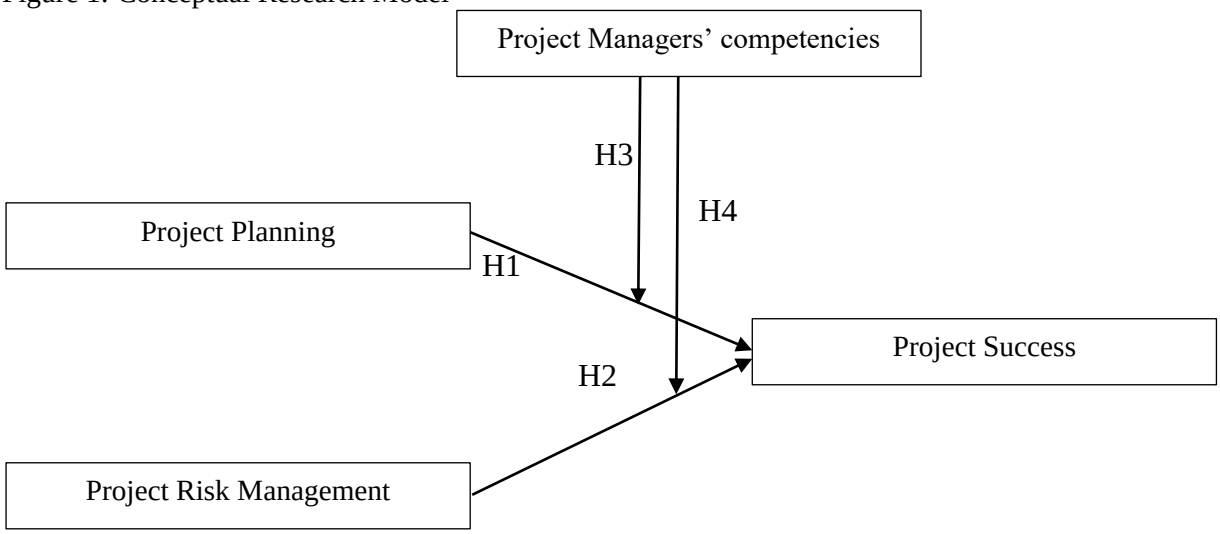
In any organization, the competencies of managers or individual employees play a vital role in achieving the overall organizational objective. Individual competency is a very effective tool in current project management activities and human resources management. The multidimensional talents, competencies, and attitudes of project managers allow him to build more project managers for the current team's strong teamwork. Effective managers' good communication skills help them clearly communicate instructions to other team members and stakeholders.

The presence of risk, i.e. the development of change, has a positive impact. Opran et al. (2012), therefore, challenge the fact that successful organizational frameworks that coordinate their work can invest in projects with greater trust in market environments that are unclear precisely why they have the capacity to assess and reduce risks by arguing that a higher risk can lead to

a greater profit.' The risks can be external or internal in any organization or project. The responsibility for successful completion is to systematically identify, evaluate and respond to a project's potential risk, taking into account the risk management identified by Opran (2012) and finding risk management to monitor the progress of unpredictable events. Taking these thoughts into account, Iacob (2013) describes risk management as a systematic and formal strategy that concentrates on the appropriate steps and expected measures to recognize and monitor risks and maintain them at an acceptable level. Risk management can enable the project manager, as a continuous planning phase, to improve and overcome positive events. It is particularly efficient, as close to the project's launch, as the earlier causes. All research study findings show that managers' interpersonal and leadership skills are an intrinsic part of their personality, and there is a strong link between PMC and ProS. The abilities of the project managers play an essential influence in Pros. Due to a lack of these talents and qualities, the project may fail.

H4: Project Managers' Competence moderates the relationship between RisM and ProS so that it will be stronger when Project Managers' Competencies are high.

Figure 1: Conceptual Research Model



3. Research methodology

3.1. Research design and sampling

Choosing feasible and suitable research strategies is fundamental. The research design can be done, as per Janesick (1994), by first identifying the research questions and fundamental perspectives of relevant writing. Identifying the writing will allow the researcher to explain the angles of study, materials, and methods for improving the study questions. This study framework was selected based on philosophical perspectives, research goals and objectives, available time, the researchers' current learning, and valuable resources (Yin, 2009). This study examined quantitative cross-sectional data. As in this study, quantitative research involves collecting numerical data to test a hypothesis. Data for this study was collected using a survey questionnaire, with participants responding to scales ranging from 1 strongly disagree to 5 (strongly agree). The respondents' numerical replies were analysed using SPSS. A questionnaire was used to collect data, and the entire process took place in one step. A sequence of phrased questions in the survey form efficiently collected the data for this investigation.

This study can be categorized as explanatory research, often known as causal research (cause and effect are being examined) (Malhotra and Grover 1998). This was an observational study; consequently, members from private construction firms in Afghanistan reached their business to fill the questionnaires in their characteristic workplace. The population in the current examination contains private sector construction firms in Afghanistan. Based on Convenience Sampling, 300 questionnaires were distributed among private-sector construction firms in Afghanistan, and 260 responses were obtained. According to the most recent studies, when it comes to survey-based research, a sample size of between 200 and 400 is normally sufficient to provide statistically sound results (Liu, 2013). A power analysis supports the assertion by revealing that the present study's sample of around 300 respondents has an adequate power of 0.80 to detect medium effect sizes at the alpha level of 0.05 to establish the credibility and dependability of the study (Ahmad & Halim, 2017). Eleven responses were insufficient due to incomplete questionnaires, double marking, repetition, and skipping of some items. In total, 249 valid responses were considered in this study. Using the theoretical lens of knowledge reuse, the researchers investigated how PMC moderates the relationship between ProP, RisM, and project success.

3.2. Scales and measures

All study variables are scored using a 5-point Likert scale ranging from Strongly Disagreed=1 to Strongly Agree=5.

3.2.1. Project planning

Project Planning is measured using a 6-item scale developed by Demir (2008). One sample item is "Each task/activity/work package is assigned to a specific project team member or members."

3.2.2. Project risk management

The project's risk management is assessed using a scale of six items developed by Ling et al. (2008). One sample item is "The extent to which the top management team views bold acts as useful and common practice."

3.2.3. Project managers' competencies

Project Managers' Competencies are measured using a 5-item version by Clarke (2010). One sample item is: "The leader organizes resources and coordinates them efficiently and effectively. He or she establishes clear objectives and converts long-term goals into action plans."

3.2.4. Project success

The success of the project is measured using a scale of 6 items developed by Harvett (2013). One simple item is, "Were the project objectives met?"

3.3. Control variables

A one-way ANOVA is used to control for fluctuations in the dependent variable(s).

4. Results

4.1. Descriptive analysis and correlations

A one-way ANOVA was performed to account for differences in project success based on the demographic variables included in the study. The study discovered a significant difference in project success across education levels ($F = 3.255$, $p < 0.05$). Correlation analysis shows the relationship between variables. It reveals whether there is a strong or weak link between the variables. Table 1 displays the correlation coefficients for the variables.

Table 1: Correlation Analysis

	PP	PRM	PMC	PS
Project Planning	1			
Project Risk Management	.640**	1		
Project Managers' Competencies	.656**	.648**	1	
Project Success	.634**	.656**	.730**	1

N=203, *p<.05, **p<.01, ***p<.001

The table shows the association between each variable and the others. All of these factors are substantially associated with one another, indicating a favourable relationship between ProP, RisM, Project Manager Competencies, and Project Success.

4.2. Regression

This strategy assesses the effect of one variable on another. Multiple regression analysis was utilized to examine the variables' main effects and moderating effects. Table 2 shows the regression analysis results. Table 2 shows that project planning significantly improves project performance (β =.324, P =.001), supporting hypothesis 1. Project Risk Management significantly improves project success (β =.317, P =.000), supporting hypothesis 2.

Table 2: Simple regression analysis

Predictors	Project Success		
	B	R^2	ΔR^2
Step 1			
Education		.010	
Step 2			
Project Planning	.324***		
Project Risk Management	.317***		
Project Managers' Competencies	.436***	.611	.599

N=203, *p<.05, **p<.01, ***p<.001

4.3. Moderated regression analysis

Moderated regression analysis is utilized to explore the variable that affects the relationship between a dependent variable and an independent variable. Table 3 shows that project planning and project manager competencies have a substantial positive influence on ProS (β =.042, P =.002). This suggests that high project manager competencies lead to a greater association between ProP and ProS, supporting hypothesis 3.

Table 3: Moderated regression analysis (1)

Predictors	Project Success		
	B	R^2	ΔR^2
Step 1			
Control variable		.010	
Step 2			
Project Planning	.324***		
Project Managers' Competencies	.539***	.579	.569
Step 3			
PP x Project Managers' Competencies	.042**	.596	.017

N=249, *p<.05, **p<.01, ***p<.001, control variable is education, PP = Project Planning,

Table 4: Moderated regression analysis (2)

Predictors	Project Success		
	B	R^2	ΔR^2
Step 1			
Control variable		.010	
Step 2			
Project Risk Management	.317***		
Project Managers' Competencies	.519***	.594	.584
Step 3			
PRM x Project Managers' Competencies	.037*	.603	.009

N=249, *p<.05, **p<.01, ***p<.001, control variable is education, PRM = Project Risk Management

5. Discussion

The main goal of the present study is to address a vacuum in the literature. To accomplish this, a questionnaire was given to construction firm-based organizations. The current study uses project managers' competencies as its unit of analysis. To investigate the impact of project planning (ProP) and project risk management (RisM) on project success (ProS), with the moderated role of the project managers' competencies (PMC). The findings indicate a positive relationship between project planning and project success. Various research supports that association. According to studies by Laird and David (2016), Alchammari et al. (2021), and Urbański et al. (2021), there is a favorable correlation between ProP and project success. Also, this research aims to investigate how project planning might improve project success. This research indicates that the more we plan, the more likely the project will be successful. Project planning allows us to save money and time while improving the project's quality, confirming our initial hypothesis.

The current study's correlation results indicate that there is a favourable relationship between project risk management and ProS. This study's regression analysis demonstrates a positive association between RisM and project success. Various research supports this association. For example, the study of Pimchangthong & Boonjing (2017) describes that project risk management is necessary for project success. This research finding supports the previous researcher's finding that RisM is one of the ways that indicate the risk within the team and increases the project's success (Ranasinghe & Jayawardana, 2011). The link between project risk management and ProS is both motivating and significant. This demonstrates that if RisM is accepted across the organization, the current study's correlation results indicate that there is

a favourable relationship between project risk management and ProS. This study's regression analysis demonstrates a positive association between RisM and project success.

The third hypothesis in the current study stated that project managers' competencies influence the relationship between project planning and project success. The link between project planning and project success strengthens if managers' competencies are high. The study's findings reveal that the combination of project planning and project manager competencies influences project success and yields exceptional results. Although the project managers' incompetence caused the failure of some mega-projects, many initiatives have been determined to be effective despite excessive time, expenditures, and requirements and deliver benefits to their stakeholders (Schultz et al., 1987; Dvir et al., 2003). The study's findings indicate that ProP benefits project success, with project managers' competencies playing a moderating role. Using these skills and abilities, a competent manager with a good strategy can successfully and sufficiently achieve the goal of project success and can make wise decisions on any issue that happens in the project's life. The results also support the concept that project managers' competencies modulate the association between project planning and project success. The results provide support to the PMC to moderate the RisM and ProS relationship. The study of Rezvani et al. (2016) describes how the PMC can solve new incoming issues (risk) and challenges and problems in a complex project.

6. Conclusion

This research focuses on imperious new constructs. The ProS results from Project planning, RisM, and a project manager competency. This study was one of the first to use project manager competency facilitation techniques to create a theoretical framework that links ProP and risk management to project success. To improve ProS, this study focused on the most significant aspects of ProP, risk management, and project manager competency ability as moderating factors. The findings revealed that ProP and RisM impact construction ProS, whereas PMC moderates the relationship. It has also been demonstrated that construction companies must effectively manage organizational risk so that their teams can make decisions that support successful project management and efficiency. To better execute a project, policymakers and leaders should design a strategic strategy that ensures the seamless application of project planning processes and manages risks.

6.1. Implications

The contributions of this manuscript have enormous theoretical implications that cannot be emphasized. Our understanding of the dynamics of ProP within the context of PM has substantially increased because of the confirmation of previously hypothesized links between project planning, risk management, project manager competency, and ProS. This information is particularly significant for Pakistan's building construction industry. First, this study fills a significant vacuum in the existing literature by demonstrating a direct correlation between successful project planning, RisM, and project management ability.

Implementing ProP methodologies with the construction project manager’s competency improves team outcomes through risk management and boosts project success. This illustrates that firms should emphasize project planning activities and risk management by emphasizing professional development that improves team health, safety, and behaviour. The construction industry may better manage project planning processes and risk management by doing so.

6.2. Limitations and future research direction

This study used convenience sampling to select 249 participants from construction firm-based organizations, with the population sample deployed in Afghanistan. Because the study focused solely on construction firm-based organizations in Afghanistan, the findings cannot be applied to many other fields and working sectors. In addition, it is possible to examine other Asian countries to identify similarities and differences. These outcomes may also be verified in different sectors. Data were collected using an online questionnaire. In future research, detailed personalized interviews are recommended. Although the sample size was tiny, it had a major impact on the study's characteristics and outcomes. Future researchers should use a sufficient sample size and test the model to increase its generalizability. Future studies should focus on multinational organizations around the country. During this study, it has been viewed that other variable like project performance, team performance, and decision-making can also be used as moderators in this research model. Further, this research used project manager competency as a moderator variable; future studies should include mediator variables, including organizational environment, stakeholder engagement, safety culture, risk control, and risk environment, as mediating variables between ProP and ProS. To avoid biases, in future studies, data collection by time-lag techniques should also be considered, which was not possible in our study due to time constraints.

Declaration of conflict of interest

The author(s) declared no potential conflicts of interest(s) with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship and/or publication of this article.

ORCiD ID

Riazulhaq Fazly https://orcid.org/0009-0006-1169-6025

Nafla Raees https://orcid.org/0009-0003-9322-597X

Muhammad Qaiser Shafi https://orcid.org/0000-0003-0697-313X

Shakir Iqbal https://orcid.org/0009-0007-1837-5344

Muhammad Javid Nawaz https://orcid.org/0009-0005-9796-1629

Publisher's Note

References

Ahimbisibwe, A., Tusiime, W., & Tumuhairwe, R. (2015). The Moderating Influence of Inherent Project Risk on the Relationship between Project Planning and Perceived Project Success. *International Journal of Supply Chain Management, 4*(3), 69-77. https://nru.uncst.go.ug/items/b32775d8-cebb-48a0-a058-2f054ec54122

Ahmad, H., & Halim, H. (2017). Determining sample size for research activities. *Determining Sample Size for Research Activities*, 20–34. http://sbr.journals.unisel.edu.my/ojs/index.php/sbr/article/download/12/20

Akinradewo, O., Aigbavboa, C., Ikuabe, M., Adekunle, P., Thwala, W. D., & Olatunji, S. (2022). Project planning: a determinant of project delivery to time and cost. *AHFE International*. https://doi.org/10.54941/ahfe1001623

Al-Balawneh, K. A., & Tarabieh, S. (2024). The impact of risk management and knowledge management on construction project success: The mediating role of project management performance. *Mu'taẗ Li-l-buḥūṯ Wa-al-dirāsāt. Silsilaẗ Al-'ulūm Al-insāniyyaẗ Wa-al-iğtimā'iyyaẗ*, *39*(1). https://doi.org/10.35682/mjhss.v39i1.923

Alchammari, K. R. A., Ali, B., & Alshammare, J. (2021). The relationship between project planning, risk management and knowledge integration on project success. *Academy of Strategic Management Journal*, *20*(4), 1–11. https://www.abacademies.org/journals/academy-of-strategic-management-journal-home.html

Al-Shibly, H., Louzi, B., & Hiassat, M. (2013). The impact of risk management on construction projects success from the employees' perspective. *Interdisciplinary Journal of Contemporary Research in Business*, *5*(4). https://www.scirp.org/reference/referencespapers?referenceid=2179221

Amoah, C., & Pretorius, L. (2019). Evaluation of the impact of risk management on project performance in small construction firms in South Africa. *Journal of Engineering, Design and Technology*, *18*(3), 611–634. https://doi.org/10.1108/jedt-06-2018-0098

Ashraf, H., Ejaz, M. K., Memon, S. A., Shen, Y., Maqsoom, A., & Sunindijo, R. Y. (2023). Examining a two-step working model of safety knowledge in translating safety climate into safety behavior. *Engineering Construction and Architectural Management*. https://doi.org/10.1108/ecam-09-2022-0906

Banihashemi, S., Hosseini, M. R., Golizadeh, H., & Sankaran, S. (2017). Critical success factors (CSFs) for integration of sustainability into construction project management practices in developing countries. *International Journal of Project Management*, *35*(6), 1103–1119. https://doi.org/10.1016/j.ijproman.2017.01.014

Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management, 17*(1), 99-120. https://doi.org/10.1177/014920639101700108

Bjarnason, E. (2015). Bjarnason, E. (2015). *Critical Success Factors for Planning, Scheduling and Control in Design and Construction.* Master's thesis submitted to Reykjavik University. https://hdl.handle.net/1946/22323

Briere, S., Proulx, D., Flores, O. N., & Laporte, M. (2015). Competencies of project managers in international NGOs: perceptions of practitioners. *International Journal of Project Management*, *33*(1), 116–125. https://doi.org/10.1016/j.ijproman.2014.04.010

Bugarcic, M., & Slavkovic, M. (2022). Assessing project value: end-user perspective. *In Proceedings of the 10th IPMA Research Conference "Value Co-Creation in the Project Society", Belgrade, Serbia*. https://doi.org/10.56889/okiw8035

Clarke, N. (2010). Emotional intelligence and its relationship to transformational leadership and key project manager competences. *Project Management Journal, 41*(2), 5–20. https://doi.org/10.1002/pmj.20162

Coleman, R. A. (2014). *The relationship between project managers' competence, professional experience, and education on career success: a correlation study*. Doctoral dissertation submitted to Walden University. https://core.ac.uk/download/pdf/217229137.pdf

Cserhati, G., & Szabo, L. (2014). The relationship between success criteria and success factors in organisational event projects. *International Journal of Project Management*, *32*(4), 613–624. https://doi.org/10.1016/j.ijproman.2013.08.008

Davis, K. (2014). Different stakeholder groups and their perceptions of project success. *International Journal of Project Management*, *32*(2), 189–201. https://doi.org/10.1016/j.ijproman.2013.02.006

Demir, K. A. (2008). Software Naval project management Measurement of effectiveness. *Doctoral dissertation, Monterey, California. Graduate School*. https://core.ac.uk/download/pdf/36739565.pdf

Demirkesen, S., & Ozorhon, B. (2017). Impact of integration management on construction project management performance. *International Journal of Project Management*, *35*(8), 1639–1654. https://doi.org/10.1016/j.ijproman.2017.09.008

Din, S. U., Ullah, I., Farooq, U., Anwar, S., & Ullah, S. (2023). Impact of project management competence and complexities on the performance of mega engineering projects in Pakistan. *Natural and Applied Sciences International Journal (NASIJ)*, *4*(1), 149–163. https://doi.org/10.47264/idea.nasij/4.1.10

Dvir, D., Raz, T., & Shenhar, A. J. (2003). An empirical analysis of the relationship between project planning and project success. *International Journal of Project Management*, *21*(2), 89–95. https://doi.org/10.1016/s0263-7863(02)00012-1

Elkrghli, S., & Almansour, B. Y. (2024). An empirical investigation of risk management factors in private construction projects in Benghazi City. *Montenegrin Journal of Economics*, *20*(2). https://doi.org/10.14254/1800-5845/2024.20-2.16

Fareed, G., Nawaz, M. J., Iqbal, S., Ummara, U., & Hamza, A. (2024). Examining the impact of operational strategy and employee motivation on project performance in the construction projects. *Migration Letters*, *21*(S8), 86–101. https://doi.org/10.59670/ml.v21is8.9232

Fisher, E. (2011). What practitioners consider to be the skills and behaviours of an effective people project manager. *International Journal of Project Management*, *29*(8), 994–1002. https://doi.org/10.1016/j.ijproman.2010.09.002

Ghaeb, H. O. & Mahjoob, A. M. R. (2023). Risk response in construction project: a review Study. *Journal of Engineering*, *29*(8), 121–137. https://doi.org/10.31026/j.eng.2023.08.09

Gitau, L. M. (2015). *The effects of risk management at project planning phase on performance of construction projects in Rwanda.* Master's thesis submitted to Jomo Kenyatta University of Agriculture and Technology.

Gomes, J., & Romão, M. (2023). Aligning project and benefits management with balanced scorecard approach to achieve project success. *Journal of Business Ecosystems*, *4*(1), 1–11. https://doi.org/10.4018/jbe.320481

Harshavardhan, T., Reddy, V. S., Vardhani, P., Shrihari, S., Alawadi, A. H. R., & Sharma, S. D. (2023). Resource allocation, scheduling and planning of a multi storeyed residential building. *E3S Web of Conferences*, *391*, 01217. https://doi.org/10.1051/e3sconf/202339101217

Harvett, C. M. (2013). A study of uncertainty and risk management practice related to perceived project complexity. *Doctoral Thesis submitted to Bond University.* https://research.bond.edu.au/en/studentTheses/a-study-of-uncertainty-and-risk-management-practice-related-to-pe

Hotchkiss, C., & Seekamp, E. (2024). A systematic literature review on climate change adaptation planning for archaeological site management and the prevalence of stakeholder engagement. *American Antiquity*, *89*(2), 302–318. https://doi.org/10.1017/aaq.2023.97

Iacob, V.S. (2013). Risk management and evaluation and qualitative method within the projects, International economic Conference, 11th edition - Vision and Foresight in Economic Policies in Times of Crisis, *Stefan cel Mare University of Suceava.*

Ika, L. A. (2009). Project success as a topic in project management journals. *Project Management Journal*, *40*(4), 6–19. https://doi.org/10.1002/pmj.20137

Iqbal, S., Nawaz, M. J., Ali, A., Osman, E., & Hamza, A. (2024). Investigating the impact of project planning on construction project success through the mediating role of risk management and safety climate. *International Journal of Organizational Leadership, 13*(First Special Issue), 119-139. https://doi.org/10.33844/ijol.2024.60426

Irfan, M., Alaloul, W. S., Ghufran, M., Yasin, G., Thaheem, M. J., Qureshi, A. H., & Bilal, M. (2022). Analysing the impact of organizational culture on social sustainability: a perspective of the construction industry. *Environment, Development and Sustainability*, *26*(1), 1103–1133. https://doi.org/10.1007/s10668-022-02751-3

Irfan, M., Khan, S. Z., Hassan, N., Hassan, M., Habib, M., Khan, S., & Khan, H. H. (2021). Role of project planning and project manager competencies on public sector project success. *Sustainability*, *13*(3), 1421. https://doi.org/10.3390/su13031421

Janesick, V. J. (1994). *The dance of qualitative research design: Metaphor, methodology, and meaning.* In N. K. Denzin & Y. S. Lincoln (Eds.), Handbook of qualitative research. Sage Publications, Inc, 209–219

Javed, M. S., Mahmood, A. K. B., & Sulaiman, S. B. (2012). Project variables in performance of the Project Planning, Implementation, and Controlling Processes. *International Journal of Engineering and Innovative Technology (IJEIT)*, *1*(3), 254-267.

Kafile, M. (2021). Project planning and scheduling in the face of the Fourth Industrial Revolution (4IR). *Journal of Business Administration Research*, *4*(3). https://doi.org/10.30564/jbar.v4i3.3398

Kerzner, H. R. (2013). *Project management: a systems approach to planning, scheduling, and controlling*. John Wiley & Sons.

Laird, D. J. (2016*). The Impact of Planning and Other Organizational Factors on the Success of Small Information Technology Projects.* Doctoral Dissertation submitted University of Pittsburgh.

Ling, Y., Simsek, Z., Lubatkin, M., & Veiga, J. F. (2008). The impact of transformational CEOs on the performance of small- to medium-sized firms: does organizational context matter? Journal of Applied Psychology, 93*(4), 923–934*. https://doi.org/10.1037/0021-9010.93.4.923

Liu, X. S. (2013). *Statistical power analysis for the social and behavioural sciences*. Routledge eBooks. https://doi.org/10.4324/9780203127698

Malhotra, M. K., & Grover, V. (1998). An assessment of survey research in POM: from constructs to theory. *Journal of Operations Management*, *16*(4), 407–425. https://doi.org/10.1016/s0272-6963(98)00021-7

Marzagao, D. S. L., & Carvalho, M. M. (2016). Critical success factors for Six Sigma projects. *International Journal of Project Management*, *34*(8), 1505–1518. https://doi.org/10.1016/j.ijproman.2016.08.005

Milijic, N., Stojanovic, A., Mihajlovic, I., Jovanovic, I., & Popovic, M. (2020). Safety Climate in project-based organizations: Multi-criteria analysis. *Management*. https://doi.org/10.7595/management.fon.2020.0026

Mykytyuk, P., Brych, V., Manzhula, V., Borysiak, O., Sachenko, A., Banasik, A., Kempa, W.

M., Mykytyuk, Y., Czupryna-Nowak, A., & Lebid, I. (2024). Efficient management of material resources in Low-Carbon construction. *Energies*, *17*(3), 575. https://doi.org/10.3390/en17030575

Obradovic, V., Jovanovic, P., Petrovic, D., Mihic, M., & Mitrovic, Z. (2013). Project managers' emotional intelligence – a ticket to success. *Procedia: Social & Behavioural Sciences*, *74*, 274–284. https://doi.org/10.1016/j.sbspro.2013.03.034

Okika, M. C., Vermeulen, A., & Pretorius, J. C. (2024). A systematic approach to identify and manage interface risks between project stakeholders in construction projects. *CivilEng*, *5*(1), 89–118. https://doi.org/10.3390/civileng5010005

Onyango, J. (2023). Project planning and success of road construction projects in Siaya County, Kenya. *International Journal of Management Studies and Social Science Research*, *05*(05), 200–212. https://doi.org/10.56293/ijmsssr.2022.4717

Opran, C., Stan, S., & Spanu, P. (2012). Managementul riscului în proiectele europene. *Bucureşti.*

Panahi, A., Habibirad, A., & Safari, S. (2023). Developing a Mathematical Programming Model to Determine the Optimal Portfolio of Capital Projects in Oil and Gas Companies to Achieve the Strategic goals. *pbr.put.ac.ir*. https://doi.org/10.22050/pbr.2023.340014.1262

Parvadavardini, S., Vivek, N., & Devadasan, S. (2015). Impact of quality management practices on quality performance and financial performance: evidence from Indian manufacturing companies. *Total Quality Management and Business Excellence/Total Quality Management & Business Excellence*, *27*(5–6), 507–530. https://doi.org/10.1080/14783363.2015.1015411

Pimchangthong, D., & Boonjing, V. (2017). Effects of risk management practice on the success of IT project. *Procedia Engineering*, *182*, 579–586. https://doi.org/10.1016/j.proeng.2017.03.158

Prabhakar, G. P. (2009). Projects and their management: A literature review. *International Journal of Business and Management*, *3*(8), 3.

Rabechini, R., Junior, & De Carvalho, M. M. (2013). Understanding the Impact of project risk management on project Performance: An Empirical study. *Journal of Technology Management and Innovation*, *8*, 11–12. https://doi.org/10.4067/s0718-27242013000300006

Ranasinghe, G., & Jayawardana, A. (2011). Impact of knowledge sharing on project success in the Sri Lankan software industry. *Sri Lankan Jurnal of Management*, *16*(1).

Rezvani, A., Chang, A., Wiewiora, A., Ashkanasy, N. M., Jordan, P. J., & Zolin, R. (2016). Manager emotional intelligence and project success: The mediating role of job satisfaction and trust. *International Journal of Project Management*, *34*(7), 1112–1122. https://doi.org/10.1016/j.ijproman.2016.05.012

Salem, M., Asim, M., & Banerjee, R. (2022). Identification of Success Factors in Construction Projects-A systematic literature review. *International Journal for Research in Applied Science and Engineering Technology*, *10*(5), 1437-1439.https://doi.org/10.22214/ijraset.2022.42526

Schultz, R. L., Slevin, D. P., & Pinto, J. K. (1987). Strategy and tactics in a process model of project implementation. *Interfaces*, *17*(3), 34–46. https://doi.org/10.1287/inte.17.3.34

Setiawan, A. (2023). Knowledge management strategy to improve quality and cost at PT total Bangun Persada TBK. *Jurnal Scientia*, *12*(02), 1874–1891. https://doi.org/10.58471/scientia.v12i02.1477

Sudha, P. B., Venkatraj, D., Sreenivas, M., & Vidhya, K. (2020). Project planning and scheduling. http://dx.doi.org/10.2139/ssrn.3720552

Teller, J., Kock, A., & Gemunden, H. G. (2014). Risk Management in Project Portfolios is More than Managing Project Risks: A Contingency Perspective on Risk Management. *Project Management Journal*, *45*(4), 67–80. https://doi.org/10.1002/pmj.21431

Tesfaye, E., Lemma, T., Berhan, E., & Beshah, B. (2017). Key project planning processes affecting project success. *International Journal for Quality Research, 11*(1), 159-172. https://doi.org/10.18421/ijqr11.01-10

Tshering, D. (2023). Risk management as a dynamic and continuous process in the life cycle of a typical major civil engineering project. *Bhutan Journal of Research and Development*, *2*. https://doi.org/10.17102/bjrd.rub.se2.043

Umulisa, A., Mbabazize, M., & Shukla, J. (2015). Effects of project resource planning practices on project performance of Agaseke project in Kigali Rwanda. *International Journal of Business and Management Review*, *3*(5), 29-51.

Urbanski, A., Konopinska, N., Lubawy, J., Walkowiak-Nowicka, K., Marciniak, P., & Rolff, J. (2021). A possible role of tachykinin-related peptide on an immune system activity of mealworm beetle, Tenebrio Molitor L. *Developmental and Comparative Immunology/Developmental & Comparative Immunology*, *120*, 104065. https://doi.org/10.1016/j.dci.2021.104065

Verbano, C., & Venturini, K. (2013). Managing Risks in SMEs: A Literature review and research agenda. *Journal of Technology Management & Innovation*, *8*(3), 33–34. https://doi.org/10.4067/s0718-27242013000400017

Wernerfelt, B. (1984). A resource-based view of the firm. *Strategic Management Journal*, *5*(2), 171–180. https://doi.org/10.1002/smj.4250050207

Yilmaz, D. I., & Artan, D. (2024). An occupational Safety risk management system for coastal construction projects. *IEEE Transactions on Engineering Management*, 1–14. https://doi.org/10.1109/tem.2024.3369550

Yim, R., Castaneda, J., Doolen, T., Tumer, I., & Malak, R. (2015). A study of the impact of project classification on project risk indicators. *International Journal of Project Management*, *33*(4), 863–876. https://doi.org/10.1016/j.ijproman.2014.10.005

Yin, R. K. (2009). *Case study research: design and methods* (Vol. 5). Sage.

Zanezi, A. C., & De Carvalho, M. M. (2023). How project management principles affect Lean Six Sigma program and projects. *Brazilian Journal of Operations & Production Management*, *20*(1), 1564. https://doi.org/10.14488/bjopm.1564.2023

Zhang, L., Cao, T., & Wang, Y. (2018). The mediation role of leadership styles in integrated project collaboration: An emotional intelligence perspective. *International Journal of Project Management*, *36*(2), 317–330. https://doi.org/10.1016/j.ijproman.2017.08.014

Zwikael, O., & Ahn, M. (2010). The Effectiveness of Risk Management: An analysis of project risk planning across industries and countries. *Risk Analysis*, *31*(1), 25–37. https://doi.org/10.1111/j.1539-6924.2010.01470.x

Zwikael, O., Pathak, R. D., Singh, G., & Ahmed, S. (2014). The moderating effect of risk on the relationship between planning and success. *International Journal of Project Management*, *32*(3), 435–441. https://doi.org/10.1016/j.ijproman.2013.07.002