RISK MANAGEMENT AND TEAM COMMUNICATION TOWARDS PROJECT SUCCESS IN THE CONSTRUCTION INDUSTRY OF PAKISTAN

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Abstract

The research examined the role of project risk management (PRM) and team communication on project success in Pakistan's construction industry and the mediating role of top management support (TMS). 197 responses have been collected from the stakeholders of construction projects and questionnaire survey was employed as the data collection method, while PLS-SEM approach was used for data analysis. The finding revealed that PRM positively and significantly affects project success. Similarly, team communication has a positive and significant effect on project success. Also, the study found that TMS positively and significantly moderates the relationship between PRM and project success. However, the study suggested that construction firms should increase project success by addressing risk management failure and inadequate communication among the project delivery team. In addition, it states that the top management fully backs such efforts to ensure that they are most effective and successful, making management involvement supportive of any project's success.

Keywords: Project Risk Management, Top Management Support, Project Success, Construction Industry

INTRODUCTION

Overview

Project success in construction can be defined as the realization of specific objectives and purposes coupled with attaining the desired goals within the time frame, cost, specification, and resources available for the project. It includes delivering the project on time by the time, money, and quality constraints set (Sadikoglu et al., 2024). Further, it also entails satisfaction of the stakeholders' expectations, safety, reduction of risk, and communication with all the concerned persons. The practical and efficient use of resources, compliance with the legal framework measures, and satisfaction of the customer and the final consumer are significant aspects of success in construction projects (Polat & Demirkesen, 2024).

Project risk management (PRM) is crucial in Pakistan's construction industry to boost project success, while the involvement and coordination of team members also play an essential role. PRM entails the identification of threats, evaluation of such threats, and finally, management of such threats in order to avert them from compromising a particular project (Khahro et al., 2023). This signifies that PRM eliminates the possibility of issues that may lead to delays, high costs, and compromise on the quality of the outcomes. All these systematic processes proposed to control risks have a bearing on enhancing the adequate progress of construction projects and their successful completion. Team communication is also essential, ensuring proper and timely information is passed between the project stakeholders (Haris & Yang, 2023). Communication management guarantees that all team members are on the same page and know what is expected of them and how best to work together. In addition, top management support

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(TMS) entails commitment and sponsorship from the organizational leaders, supplying the recognition, means, and direction to the group. When top management is there to support, it improves the impact of PRM and team communication by applying the necessary resources and giving them priority (Sami et al., 2024).

Problem Statement

The construction industry in Pakistan is confronted with several pragmatic issues. Firstly, due to poor risk analysis and management skills, the industry is associated with high risks of extraneous costs and the project's timeline (Watanabe et al., 2024). On this point, the need to control disruptions implies that effective PRM must be implemented to provide mechanisms for addressing eventualities. Second, direct communication between project teams is always an issue due to misinterpretation of messages, incorrect information, or transfer of wrong values (Kallow et al., 2023). The construction project especially requires a significant communication pattern due to inherent task interdependence and multiple stakeholders, which increase these communication problems. Similarly, weak communication formats may lead to inadequate correspondents required at the right time when crucial information may be needed or when projects requiring cooperation may be in progress (Siddiqui et al., 2023).

In many ways, top management might fail to adequately support, delegate, and actively manage and steer, so project governance and escalation ultimately suffer (Khalil et al., 2023). Such support can also determine morale and commitment amongst the people in a project team, thus influencing how the project would be affected. Further, it is noteworthy that the construction industry in Pakistan works in a relatively unstable economic and legal environment, which introduces another level of challenge to project management. Some external factors likely to affect the project are changes in the prices of materials, changes in legislation, and political instability (Azmat & Siddiqui, 2023). Such challenges make this study crucial in identifying ways of applying effective PRM, adequate inter- and intra-team communications, and TMS to project success. In this regard, the research will focus on solving practical problems, which can contribute to the elaboration of guidelines for enhancing the efficiency of construction projects and the work of construction professionals.

Research Gap

Although PRM has been widely investigated in connection with project success and failure, few of those works target the construction industry of Pakistan. Based on the understanding of the socio-economic environment, the regulatory framework, and the cultural context in Pakistan, it is seen that there is a need to adapt the theoretical framework based on the PRM by taking into consideration the artistic standards and practices of the country (Haris & Yang, 2023). Second, as mentioned in the preceding literature, team communication and PRM are sometimes handled as two distinct categories despite the lack of extensive discussion on how the two are related (Watanabe et al., 2024). Limited research has been conducted to identify how communication among project teams can improve PRM and project success. Knowledge of such a connection is necessary to form synergistic management approaches based on the key advantages of both components (Azmat & Siddiqui, 2023).

However, TMS as a moderating variable in the relationship between PRM, team communication, and project success has not been thoroughly investigated (Khalil et al., 2023). Even though TMS is identified as critical in generic project management literature, its relevance to the construction sector and its capacity to enhance the advantages of PRM and team communication in Pakistan still requires more research (Siddiqui et al., 2023). Thus, this gap calls for empirical investigation of factors that can explain

how TMS can effectively support PRM and team communication for favorable project results.

Purpose Statement

Hence, this research examines the role of project risk management and team communication on project success in Pakistan's construction industry and the mediating role of TMS. More specifically, the research seeks to address significant gaps in the existing knowledge by exploring how effective PRM practices can be optimally aligned with enhanced practices in team communication and the role of TMS in moderating these relationships to inform positive project success outcomes. In achieving these objectives, the study aims at filling these gaps with the view to offer recommendations that are implementable and specific to the improvement of project management practices in Pakistan's construction sector, thus appending a positive impact on subsequent performances of projects in the country.

Structure of the Study

Section 1 - Introduction of this paper concludes here. Section 2 - Literature Review will present theoretical underpinnings, develop hypotheses, and analyze existing studies on PRM, team communication, and TMS. Section 3 – Methodology will describe the methodological aspects of the paper. Section 4 - Results will present the research's findings. Section 5 – Discussions will discuss the study's findings based on previous literature. Section 6 - Conclusion and Recommendations will summarize key findings, their significance, practical recommendations, study limitations, and suggestions for future research.

LITERATURE REVIEW

Theoretical Underpinnings

Fred Fiedler developed the Contingency Theory in the 1960s, suggesting that there is no one correct method for working with teams and managing organizations (Fiedler, 2015). However, several situational factors determine the effectiveness of management practices. These include the nature of the environment, the work to be accomplished, and the individuals involved unless the work is mechanistic (Donaldson, 2001). When applied to this study on project management in the construction industry of Pakistan, Contingency Theory means to explain how and to what extent PRM, team communication, and TMS should be adapted to projects in the construction sector based on the requirements of the project environment (Li et al., 2024). Contingency Theory provides guidelines recommending that PRM strategies should always be aligned with the risks and uncertainties unique to each construction project. This also stresses appropriateness, again implying that what works well in one project may not necessarily be the best for another project because of the type and kind of the latter (Crisan et al., 2023).

Development of the Hypotheses

PRM enables project teams to thoroughly define potential risks that may influence the project scope, making it easier for a team to achieve its objectives in terms of time, cost, and quality. Identifying these risks at this stage allows the project managers to develop strategies that minimize such a risk and thus avoid project disruption by the risk or going over the allocated financial budget (Khalil et al., 2023). Secondly, PRM improves the decision-making within the project since it enables stakeholders to better understand risks that may result from decisions. Consequently, this reduces the project's resource allocation dilemmas, re-strategizing when unforeseen circumstances arise or sustaining program implementation (Sami et al., 2024). Furthermore, effective PRM creates a climate of organizational

accountability and readiness among the project teams. The use of policies promotes role definition of risk management tasks and frequent risk management plans, which increases the probability of quick response in case of risk emergence or changes in project conditions (Azmat & Siddiqui, 2023). Thus, the research proposes that:

H1: Effective project risk management (PRM) has a significant effect on project success in the construction industry.

Communication must be especially clear to prevent misunderstandings and guarantee all team members know the project's goals, objectives, and assigned tasks. This aids in avoiding confusion and ensuring that all contributors are steering in the correct direction, which improves project organization and coordination (Lukito et al., 2024). Second, better communication facilitates the flow of information to relevant parties, which entails efficiency in decision-making and speedy handling of problems. The reality of construction projects is that they are intrinsically unstructured settings with unpredictable and possibly abrupt changes and challenges. Thus, straightforward and fast decisions enable timely adjustments to the plans to prevent situations from turning into disasters (Ibdayanti et al., 2024). Also, effective and efficient teamwork generated by excellent communication is highly appreciated in the workplace. When the team members are free to speak their minds and contribute their thoughts, opinions, and suggestions, it fosters creativity and conflict resolution. Besides, it enhances the accuracy of the decisions to be made and the motivation and productivity of the working team members (Almashhadani & Almashhadani, 2023). Thus, the research proposes that:

H2: Team communication has a significant effect on project success in the construction industry.

TMS entails providing the organization's resources, approvals, and focus to facilitate the implementation of PRM practices within the organization. When senior management is committed to PRM, it conveys that risk management is valued at the organizational level, which motivates other project teams to adhere to the guidelines and avoid acts that can lead to risks (Fareed et al., 2023). Secondly, TMS affects the organizational culture and practices about risks. Having a top management that supports RM encourages the integration of RM into organizational decision-making across the different levels. Aligning the business with the culture means that the risk managerial aspect is incorporated in the project planning, execution, and monitoring, thus minimizing any chances of experiencing the worst (Khalil et al., 2023). In addition, TMS can improve communication between managers and stakeholders who take part in risk management. Ideally, when a firm's top management supports using open communication channels and engaging cross-functional teams, the overall risk identification and evaluation and even risky situations management become much easier and more efficient (Gichohi et al., 2023). Thus, the research proposes that:

H3: Top management support (TMS) moderates the relationship between project risk management and project success in the construction industry.

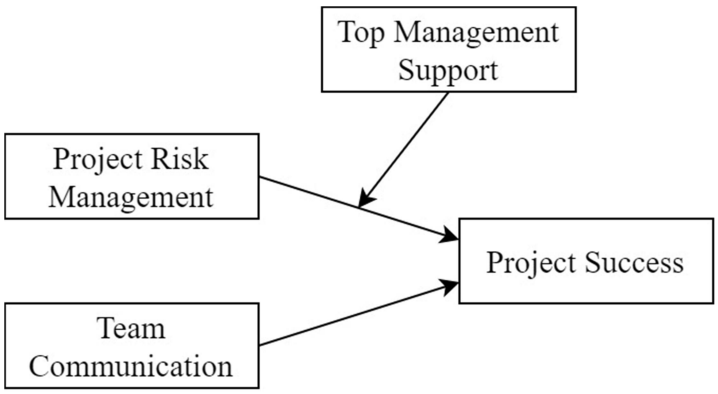

Figure 1: Research Framework

METHODOLOGY

Sample and Population

The study population includes people who are involved in construction projects in Pakistan. These stakeholders are mainly comprised of the project managers, team leaders, and other top management officials who have an authoritative role in the project's planning and execution. They have adequate experience and real-life exposure to the aspects of risk management, the communication process within the team, and the role of TMS. Their understanding is vital when analyzing the relationship between PRM, team communication, and TMS on project success (Lukito et al., 2024). Table 1 provides the respondent's profile of the study.

Table 1

Respondents' Profile (n = 197)

		N	%
Gender	Male	163	82.7
	Female	34	17.3
Age	25-34 years	50	25.4
	35-44 years	68	34.5
	45-54 years	40	20.3
	55 years or older	39	19.8
Education	Bachelor's degree in Project Management	45	22.8
	Master's degree in Project Management	44	22.3
	Master's degree in Business Administration	34	17.3
	Professional Certification (PMP, PRINCE2, etc.)	40	20.3
	Other	34	17.3
Occupation	Project Manager	50	25.4
	Senior Project Manager	30	15.2
	Project Director	14	7.1
	Project Coordinator	25	12.7

	Project Administrator	49	24.9
	Project Planner	29	14.7
Industry Experience	Less than 5 years	50	25.4
	5-10 years	48	24.4
	11-20 years	20	10.2
	More than 20 years	79	40.1
Project Scope/Size	Small (less than PKR 50 million)	64	32.5
	Medium (PKR 50 million - PKR 500 million)	54	27.4
	Large (PKR 500 million - PKR 5 billion)	40	20.3
	Mega (more than PKR 5 billion)	39	19.8

Measures

Project risk management has five measures based on a five-point Likert scale adapted from (Khalil-Oliwa & Jonek-Kowalska, 2024). A sample item is "Risk management in the project portfolio contributes to reducing project delays." Team communication has five measures based on a five-point Likert scale adapted from (Nawar & Abdullah, 2024). The sample item is "Each team member actively seeks new ways to improve how to do things." Top management support has five measures based on a five-point Likert scale adapted from (Kala Kamdjoug, 2024). Sample item: "Senior management has been responsive to requests for additional resources when the need has arisen." Project success has five measures based on a five-point Likert scale adapted from (Kala Kamdjoug, 2024). The sample item is "I am satisfied with the project implementation process."

Data Collection

A survey method collects data from the respondents using preliminary structured questionnaires (Imam & Zaheer, 2021). Therefore, surveys are more suitable for this research as it is easier and more efficient in collecting standardized responses from multiple participants, frequent users of PRM, and team communication comprising project managers and team leaders with adequate knowledge about PRM, team communication, and TMS. This method helps to facilitate the collection of quantitative data that can be used to analyze the interrelated patterns of the constructs (Sampaio et al., 2021). Besides, it is easier, quicker, and often cheaper in terms of costs to administer surveys, mainly to get various perspectives, which helps provide an overview of how these variables interrelate in operations. As a result, the survey method enhances the reliability and validity of the findings compared to the general interviewing method, thus making it efficient in providing solutions for identifying complex dynamics in project management (Imam & Zaheer, 2021).

Data Analysis

PLS-SEM is one of the most used statistical methods for testing the relationships between the sets of exogenous latent constructs and endogenous constructs in a model. It enables analysis of the measurement model, which demonstrates the link between observed and latent variables, and the structural model, which indicates the relationship between the latent variables (Hair et al., 2019). Therefore, in this research on project management in Pakistan's construction industry, PLS-SEM is warranted since it aligns with the study's objective to consider multiple latent constructs: PRM, Team communication, TMS, and project success (Hair et al., 2017).

RESULTS

Measurement Model

In PLS-SEM, measurement (outer) model is the assessment criteria for the relationship between indicators and constructs. This model assesses that the constructs are well-represented by their indicators in the model (Sarstedt et al., 2014). Table 2 provides the result of measurement (outer) model for construct reliability and validity assessment using PLS algorithm.

Table 2

Measurement Model

Constructs	Indicators	Loadings	Prob.	VIF	Alpha	CR	AVE
Project Risk Management	PRM1	0.888	0.000	2.372	0.863	0.917	0.786
	PRM2	0.852	0.000	1.958			
	PRM4	0.919	0.000	2.998			
Project Success	PS1	0.905	0.000	3.564	0.925	0.944	0.770
	PS2	0.886	0.000	3.180			
	PS3	0.865	0.000	2.909			
	PS4	0.836	0.000	2.725			
	PS5	0.893	0.000	3.606			
Team Communication	TC2	0.795	0.000	1.690	0.794	0.876	0.703
	TC3	0.873	0.000	1.632			
	TC4	0.846	0.000	1.723			
Top Management Support	TMS1	0.814	0.000	2.753	0.905	0.929	0.723
	TMS2	0.913	0.000	3.692			
	TMS3	0.812	0.000	2.514			
	TMS4	0.835	0.000	2.594			
	TMS5	0.873	0.000	3.006			

Above table has shown that indicators have loadings higher than the recommended cut-off value of 0.70 with significance level below 5 percent and VIF coefficient below 5 (Hair et al., 2022; Hair et al., 2011) manifesting that indicators have substantially represented their constructs in the outer model with no multicollinearity issue. Moreover, all constructs have substantial internal consistency represented by Cronbach's alpha and composite reliability (CR) with coefficients higher than the recommended cut-off value of 0.70 and 0.80, respectively (Hair et al., 2011, 2013 ; Hair et al., 2019). Lastly, the constructs have also achieved substantial degree of convergence between their indicators represented by AVE having coefficients higher than the recommended cut-off value of 0.50 (Hair et al., 2011, 2013). Therefore, the results of the measurement model manifested that indicators and constructs have met the acceptable criteria for indicator reliability, construct reliability and convergent validity.

Discriminant Validity

Discriminant validity assesses that the constructs are distinctive in the model compared to other constructs with the objective to ensure that the constructs are unique and have no overlapping with other constructs (Hubley, 2014). Table 3 provides the result of HTMT ratio for discriminant validity assessment using

PLS algorithm technique.

Table 3
Discriminant Validity using HTMT Ratio

	PRM	PS	TC	TMS
Project Risk Management				
Project Success	0.804			
Team Communication	0.737	0.730		
Top Management Support	0.598	0.863	0.851	

Henseler et al. (2015) recommended that HTMT ratio is notably better and comprehensive technique for discriminant validity assessment based on multitrait-multimethod matrix (MTMM) compared to traditional methods like Fornell and Larcker (1981) criterion and cross loadings (Ab Hamid et al., 2017). Therefore, the study has used HTMT ratio for discriminant validity assessment and showed that all the constructs have HTMT ratio below the recommended threshold of 0.90 (Henseler et al., 2016; Henseler et al., 2015; Roemer et al., 2021) for achieving substantial degree of divergence between latent constructs for their distinctiveness. Hence, discriminant validity has been established using HTMT ratio.

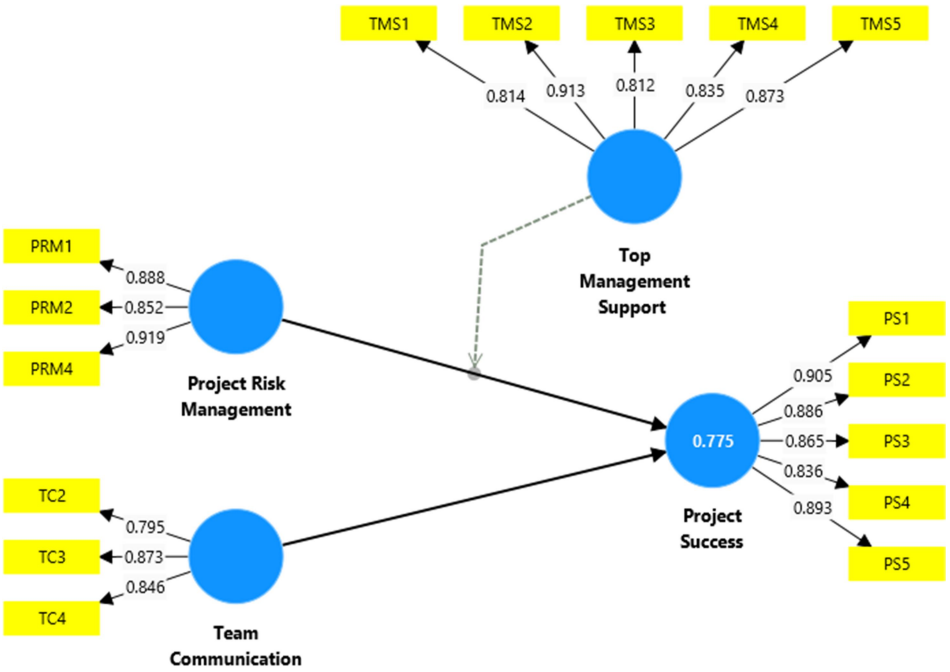

Figure 2: PLS Algorithm using SmartPLS

Structural Model

In PLS-SEM, structural (inner) model assesses the relationship between latent constructs in the model for hypothesis testing of causal relationship (Richter et al., 2015). Table 4 provides the result of structural (inner) model for hypothesis testing and predictability of the endogenous construct in the model using PLS bootstrapping technique at 5000 subsamples and two-tailed estimation at 5 percent significance level.

Table 4
Hypothesis Testing using PLS Path Modeling Analysis

	Estimate	S. D.	t-Stats	Prob.	VIF	f^2
H1: Project Risk Management (PRM)	0.461	0.046	10.082	0.000	1.788	0.527
H2: Team Communication	0.158	0.052	3.017	0.003	2.937	0.038
H3: Top Management Support x PRM	0.089	0.035	2.503	0.012	1.163	0.036

Dependent Variable: Project Success; R-Square = 0.775; Q-Square = 0.760

Above table has shown that hypothesis-1 has been accepted positing that project risk management ($\beta = 0.461$; $p < 0.05$) has a positively significant effect on project success in the construction industry of Pakistan with no multicollinearity issue, i.e., VIF < 5 (Hair et al., 2011) and with large effect size of 0.527 (Cohen, 1988). Moreover, hypothesis-2 has also been accepted postulating that team communication ($\beta = 0.158$; $p < 0.05$) has a positively significant effect on project success in the construction industry of Pakistan with no multicollinearity issue, i.e., VIF < 5 (Hair et al., 2011) and with small to moderate effect size of 0.038 (Cohen, 1988).

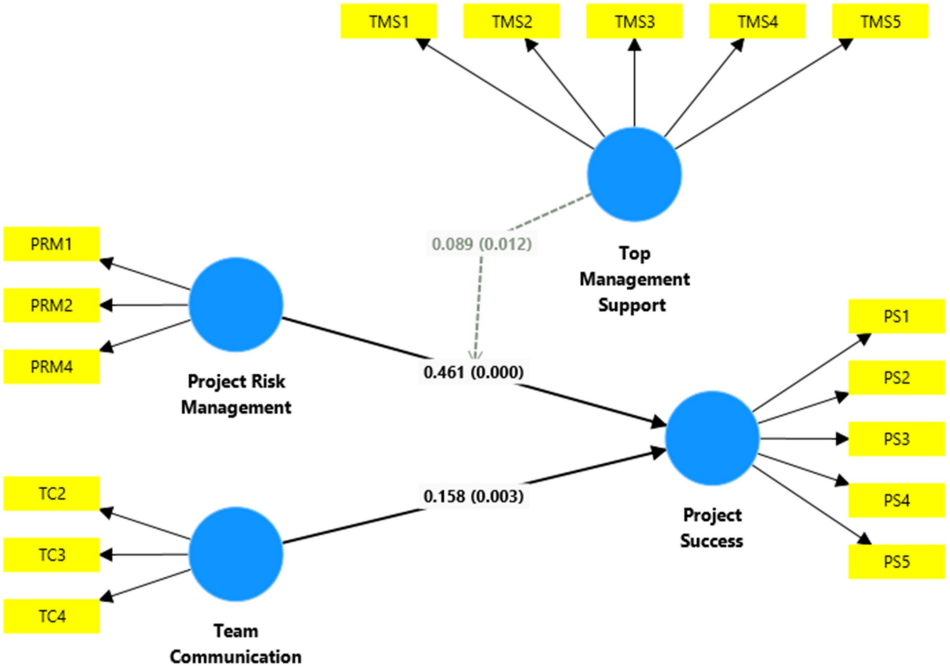

Figure 3: PLS Bootstrapping using SmartPLS

Lastly, hypothesis-3 has also been accepted manifesting that top management support ($\beta = 0.089$; $p < 0.05$) positively moderates the effect of project risk management on project success in the construction industry of Pakistan with no multicollinearity issue, i.e., VIF < 5 (Hair et al., 2011) and with small to moderate effect size of 0.036 (Cohen, 1988). This result showed that increase in the top management support towards the project will eventually improve the role of project risk management towards project success in the construction industry of Pakistan. Figure 4 illustrated the positively increasing curve between project risk management and project success due to the positive moderation of

top management support.

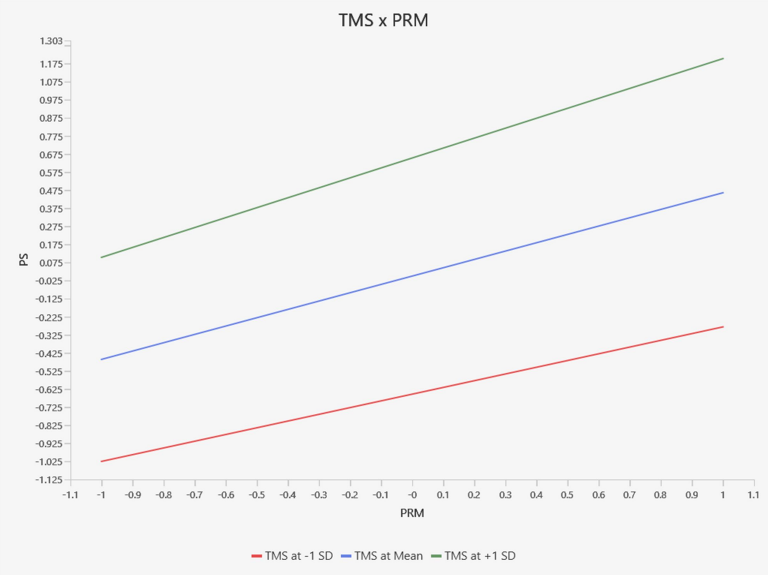

Figure 4: Moderation Graph of Top Management Support between Project Risk Management and Project Success

DISCUSSION

The result showed that PRM positively and significantly affects project success. This result is consistent with Niyafard et al. (2024), who explained that PRM helps to identify at an early stage all possible problems that may hinder the project's progress and, finally, its success; such measures cut the risk of project delay and cost increase, enhancing the project success rate. Additionally, Almashhadani and Almashhadani (2023) supported this result. They stated that the objective of PRM is to help prioritize and manage risks uncovered by offering a clear framework of the critical risks that require intensive risk management measures to achieve the best impact for effort and resources invested. Also, Buniya et al. (2023) supported this outcome. They concluded that stakeholders' engagement generates trust and confidence in the processes and the project's management, which is necessary for obtaining the recurrent support that, contributes to achieving the project's success.

Similarly, the findings showed that team communication positively and significantly affects project success. This outcome is supported by Almashhadani and Almashhadani (2023), who stated that Through satisfactory communication during teamwork, every team member is in tune, improving efficiency and significantly improving the chances of the project's success. In addition, Blak Bernat et al. (2023) supported this result. They demonstrated that checkbook management enables stakeholders to be informed and to buy into the project, which helps create a supportive environment. In contrast, the success of a project is realistically achieved. Moreover, Niyafard et al. (2024) also supported this result. They stated that decisive team communication also means that emergent problems can be reported and cleared early and, hence, do not turn into big hassles that would cause delays and affect the quality or success of the project in question. Also, the study showed that TMS positively and significantly moderates the relationship between project risk management and project success. This result is supported by Zada et al. (2023), who indicated that top management support involves providing the needed

resources and authoritarianism to support the implementation of PRM Strategies to improve their contribution to project success. Likewise, Almashhadani and Almashhadani (2023) supported this result. They stated that this support makes PRM initiatives more strategic and relevant to the organization's objectives. Top management support guides risk management to address areas where project success may be impacted. Lastly, Buniya et al. (2023) supported this outcome. They concluded that PRM gets more credibility and significance in the top management once it has been endorsed. Hence, the proactive approach to risk management goes a long way in enhancing the completion of the project success.

CONCLUSION

This research examines the role of project risk management (PRM) and team communication on project success in Pakistan's construction industry and the mediating role of top management support (TMS). The study used contingency theory as a theoretical framework. The study uses a quantitative methodology involving 197 construction project stakeholders in Pakistan, including project managers, team leaders, and top management officials. Data were collected via structured surveys and analyzed using PLS-SEM to examine relationships among project risk management, team communication, top management support, and project success. The finding showed that PRM positively and significantly affects project success. Similarly, team communication has a positive and significant effect on project success. Also, the study found that TMS positively and significantly moderates the relationship between project risk management and project success.

Overall, the research concluded that PRM and communication are critical success factors for the construction industry in Pakistan. PRM management also serves the purpose of risk management, in which potential risks are recognized and avoided or minimized, and communication management also aims at promoting the productivity of all the team members in the project. Top management support has a moderating effect, moderates the relationship between PRM and communication, and increases the impact of PRM and communication. TMS is a valuable enabler of these factors by offering resources, focus, and encouragement to facilitate their benefits. Therefore, TMS enhances PRM and communication strategies, leading to project success.

Theoretical Implications

The theoretical implications of this study, which are grounded in the contingency theory, emphasize the adaptive nature of project management practices in Pakistan's construction industry. The implications can be used to acknowledge that effective management practices must be flexible and adequately responsive to the industry's unique environmental factors and organizational contexts.

Recommendations

Organizations should prioritize the implementation of robust PRM frameworks that account for local regulatory, economic, and environmental risks. This includes conducting thorough risk assessments at project inception and continuously monitoring and adapting strategies as projects evolve. In PRM, the probability of non-trivial issues is mitigated from the design phase right to the execution phase, thus helping to prevent such problems from causing a delay or going over budget. Secondly, fostering transparent and open team communication channels is crucial for improving coordination, problem-solving and overall project efficiency. Encouraging regular meetings, leveraging digital collaboration tools, and promoting a culture of transparent communication can significantly enhance team dynamics. However, adopting strict communication procedures and employing tools, such as online collaborative

platforms, project management tools, etc., help establish more effective project information sharing, allowing all team members to be aware of potential and emerging problems and how they can be solved. Additionally, maintaining a robust TMS is essential for construction companies. Senior management should actively champion PRM initiatives, provide necessary resources, and ensure alignment of project goals with organizational strategies. Thus, to enhance TMS, the management must stipulate general policies on risk management and its communication to embed the policies within the business operations. It means approving the PRM policies and participating in the organization's strategic management.

Furthermore, it is also recommended that top management ensure that the organization continuously deals with its training and development about risk management and communication training. This will ensure that staff is posted with the current knowledge and skills in managing risks and communications. By using methods such as feedback and performance reviews in PRM, it is possible to develop new strategies for practicing this kind of communication and continuously improve its effectiveness based on the changes in the conditions that require its application in the context of project activities. This means that integrating such practices into the firm's corporate culture can lead to effective delivery of projects and higher organizational performance.

Limitations and Future Research

In this current research study, the following limitations arise, which affect the results obtained. Firstly, given the nature of the research, survey respondents in construction projects consist of a limited number of stakeholders and may not cover a vast population of Pakistan construction project stakeholders. For future research, it is suggested that the sample include more subjects or subjects from different regions and different types of constructions to be more likely to be generalized. Secondly, self-data collected using structured surveys involve biases, including socially desirable respondents, self-responses, and reporting bias. To overcome this, future research must include qualitative measures such as interviews or case studies to gain deeper insights into PRM, team communication, and TMS.Also, the study adopts a cross-sectional design, which entails data collection at one given time and restricts temporal comparisons. However, in the future, the study would also benefit from the longitudinal approach to examine how PRM, team communication, and TMS components relate to the project's success over time and how they unfold. Finally, methodological advantage based on the context-specific findings might not be transferable to other industries or regions. From this study, it is recommended that future research should compare results across industries or across countries to reveal what is both extraordinary and what is universal about project success and management.

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APPENDIX

MEASURES

Project Risk Management

PRM1 Risk management in the project portfolio contributes to reducing project delays.

PRM2 Risk management facilitates project decision-making based on a holistic view of the risks in the project.

PRM3 Risk management contributes to increasing the number of identified risks in the project portfolio.

PRM4 Risk management contributes to mitigating actions on risks identified at the project portfolio level.

PRM5 Project risk management facilitates the organization's strategic goals.

Team Communication

TC1 Each member of this team actively seeks new ways to improve how to do things.

TC2 Members at all levels of this team openly talk about what is and is not working.

TC3 Opinions are valued by others in this team.

TC4 This team encourages each member to share ideas.

TC5 Each member of this team receives frequent and helpful feedback of their work.

Top Management Support

TMS1 Senior management has been responsive to requests for additional resources when the need has arisen.

TMS2 Senior management shared responsibilities with the project team to ensure project success.

TMS3 Senior management supported the project in a crisis.

TMS4 Senior management gave us authority and supported our decisions regarding the project.

TMS5 I agreed with senior management on the degree of authority and responsibility I had over the project.

Project Success

PS1 I am satisfied with the project implementation process.

PS2 The project directly benefited intended users by increasing the efficiency or effectiveness of employees.

PS3 The project was completed within the allocated budget.

PS4 The project was completed on schedule.

PS5 The project that has been developed works.