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Impact of Project Manager Leadership Competencies on Team Performance: Evidence from Project Team Members Working in Construction and Development Projects in Peshawar

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Abstract

The project managers' leadership competencies play a decisive role in the success of construction and development projects, especially in difficult places like Peshawar, Pakistan. This research study examines the team performance impact of four leadership competencies, namely, transformational leadership, transactional leadership, communication competence, and decision-making competence. A quantitative research method was used, and surveys were taken from 200 project team members in different capacities like engineers, supervisors, planners, semi-skilled workers, and quality controllers. The research made use of a structured questionnaire with Likert-scale items, and descriptive statistics, reliability analysis, correlation, and multiple regression by SPSS were employed in data analysis. As per the findings, transformational leadership is the strongest predictor of team performance, i.e., it has a positive impact on the cooperation, adaptability, and dedication of the team members. On the other hand, transactional leadership, communication competence, and decision-making competence were positively related to team performance but were insignificant in terms of statistics due to high multicollinearity with transformational leadership. The model as a whole accounted for 96% of the variations in team performance, thereby emphasizing the importance of the integrated leadership competencies in attaining effective project outcomes.The results are of major importance for both the theory and practice. From the academic point of view, the research offers special context-driven proof from Peshawar, hence bridging the gap in studies on leadership competencies in developing regions. From the practical side, it underlines the necessity of skill-based development programs, where the main focus is on transformational leadership, but at the same time communication and decision-making skills are being strengthened. Policy-wise, the study recommends establishing standardized leadership competency frameworks to enhance project team effectiveness

Keywords: Transformational Leadership, Transactional Leadership, Communication Competence, Decision-Making Competence, Team Performance, Construction Projects, Peshawar

Introduction

Background and Context

Undertaking a construction project or development is complicated by nature as it requires numerous stakeholders, interdependent tasks, and complying with time, cost, quality, and safety constraints that are very strict. In such a situation, the role of technical experts is of no avail; however, the project managers' leadership skills pave the way and influence (Moradi, Kähkönen, & Aaltonen, 2020; Odusami et al., 2022) the team behavior and performance. Besides, project managers are required to do planning and controlling of project activities along with inspiring, coordinating, and guiding the different project teams in the direction of achieving the common objectives.

For instance, construction and development projects in Peshawar that are located in developing regions are facing all the challenges listed above plus resource scarcity, institutional constraints, security issues, and unstable economic conditions. The pressures from the context make it even more necessary to have skilled project leaders who can keep the teams motivated, maintain good communication, and make timely and informed decisions (Aldossari, Alshahrani, & Ahmad, 2024; Okonkwo, Gandu, & Muhammad, 2025). In Peshawar, a typical project team consists of engineers, supervisors, planners, skilled workers, and quality control personnel, whose collective efforts directly determine the project's success.

The current project management literature around the world lists various leadership skills as pivotal factors influencing the performance of project teams, among them transformational leadership, transactional leadership, communication competence and decision-making competence (Ahmed, Philbin, & Cheema, 2021; Ochoa Pacheco, Coello Montecel, & Tello, 2023). Transformational leadership tends to reach out to the members of the team and motivate, innovate and set ethical standards, which are all qualities that help to engage, adapt, and strengthen teams' resilience to change in project settings (Zhang & Hao, 2022; Han et al., 2025). On the other hand, transactional leadership entails clarifying duties, keeping track of performance and ensuring compliance through incentives and sanctions, which still applies to construction projects with their adherence to formal protocols and tight deadlines (Misbahuddin, Suroso, & Triyonggo, 2024).

Sometimes, the leadership style can be even eclipsed by communication competence; it is indeed more and more recognized as a key manager's skill that secures the clear definition of objectives, lessens dispute, and encourages the cooperation among the team (Zemlińska Sikora, 2023). Likewise, being able to make decisions brings such a manager to a situation with uncertainties at least to the level of burning problems and still steer his team through complex and changing project environments (Peng, 2022). Though international studies validate the necessity of these competencies, the empirical findings regarding Pakistan—and Peshawar specifically—are scant. This gap motivates researchers to conduct a context-specific study to see how the project managers' leadership skills affect the performance of the project teams in the local construction and development projects.

Problem Statement

Peshawar has witnessed a significant rise in the scale of construction and development activities, yet many projects still suffer from performance-related problems like delays in schedules, increase in costs, reduction in quality, and poor team coordination. The list of problems is mostly topped by the lack of effective leadership and its associated deficiencies like poor communication, lack of employee input in decision-making, varying levels of motivation, and lack of performance monitoring. References point to the fact that leadership skills have a strong impact on the project's outcome and the team's effectiveness (Ahmed et al., 2021; Han et al., 2025); however, this majority of this evidence is from developed economies or large international projects but not from the local context.

Locally, there isn’t any systematic empirical research that investigates the impact of specific project manager s leadership styles—i.e., transformational leadership, transactional leadership, communication competence, and decision-making competence—on team performance as perceived by project team members, which contributes to a lack of context-specific evidence and organizations' and training institutions' and policymakers' inability to address the issue by designing particular leadership development programs suitable for the realities of construction and development in Peshawar. The gap must be plugged for better team performance, and thus, project success in the region

Purpose of the Study

The main aim of the research is to analyze how project manager leadership skills affect the performance of teams in construction and development projects in Peshawar. More precisely, the research intends to determine the impact, both taken separately and as a whole, of the leadership qualities of transformational leadership, transactional leadership, communication, and decision-making on the performance of the team. With the help of quantitative data collected from project

team members using a questionnaire-based method, the study intends to provide empirical evidence that will be useful in both project management theory and practice in the context of a developing country.

Research Questions

1. What is the impact of transformational leadership competence on team performance in construction and development projects in Peshawar?
2. How does transactional leadership competence influence team performance?
3. What is the relationship between project manager communication competence and team performance?
4. How does decision-making competence of project managers affect team performance?
5. To what extent do project manager leadership competencies collectively explain variations in team performance?

Objectives of the Study

Primary Objectives

- To assess the effect of transformational leadership competence on team performance.
- To examine the impact of transactional leadership competence on team performance.
- To evaluate the influence of communication competence on team performance.
- To determine the effect of decision-making competence on project team performance.

Secondary Objectives

- To contribute context-specific empirical evidence to the project management literature from Peshawar's construction and development sector.
- To support project organizations and policymakers in designing competency-based leadership training and development programs.

Significance of the Study

This research is significant for theory, practice, and policy. Theoretically, it expands the literature on leadership and project management by doing empirical testing of multiple leadership competencies at once and associating them directly with team performance in a developing country context (Ochoa Pacheco et al., 2023; Okonkwo et al., 2025). On the practical side, the results will help project managers to detect and rank up the leadership competencies which contribute to team effectiveness. When it comes to policy, the research gives data-backed insights to help the formation of leadership competency frameworks and training programs in the construction and development sector in Peshawar.

Scope of the Study

The research is a focused study on the construction and development projects in Peshawar and aimed at the professionals involved in the projects such as engineers, supervisors, planners, skilled workers, and quality assurance staff. The leadership skills are analyzed through the members of the team with the help of a structured questionnaire. The research is confined to a cross-sectional design and dependent on self-reported data, which might influence the causality understanding.

Literature Review

Introduction

The research is a focused study on the construction and development projects in Peshawar and aimed at the professionals involved in the projects such as engineers, supervisors, planners, skilled workers,

and quality assurance staff. The leadership skills are analyzed through the members of the team with the help of a structured questionnaire. The research is confined to a cross-sectional design and dependent on self-reported data, which might influence the causality understanding.

Leadership Competencies in Project Management

Leadership competencies are known to consist of the different kinds of knowledge, skills, behaviors, and abilities which project managers use to efficiently lead individuals and get the expected results for the project. In project-oriented settings, leadership competence is regarded as a major cause of success owing to the fact that the teams are temporary, tasks require cooperation among team members, and there is a lot of uncertainty (Moradi et al., 2020; Müller & Turner, 2010). Recent research shows that effective project leadership is not only about technical control but also includes the various capabilities of motivation, relationship, and cognition (Ahmed et al., 2021; Odusami et al., 2022).

In the case of construction and development projects, leadership competencies play an essential role as the project teams are multi-skilled and they are also bound to work within tight regulatory and safety constraints. The experts assert that in such situations leadership effectiveness is the result of the right mix of leadership styles and managerial competencies like communication and decision-making (Ochoa Pacheco et al., 2023; Zemlińska Sikora, 2023).

Transformational Leadership Competence and Team Performance

Transformational leadership competence is characterized by the ability of leaders to articulate a compelling vision, inspire team members, encourage innovation, act as ethical role models, and provide individualized consideration (Bass & Avolio, 1994; Ahmed et al., 2021). In project environments, transformational leadership has been consistently linked to higher team motivation, creativity, and adaptability.

Empirical studies in construction contexts demonstrate that transformational leadership positively influences team performance by fostering trust, collaboration, and psychological safety (Zhang & Hao, 2022; Anto Purwadi, 2024). Han et al. (2025) found that transformational leadership enhances project success indirectly through team reflexivity and resilience, highlighting its importance in dynamic and uncertain project environments. Similarly, Nauman et al. (2021) reported that transformational leadership strengthens team cohesion and commitment, leading to improved performance outcomes.

Despite strong empirical support, some studies caution that transformational leadership alone may be insufficient in highly structured project settings, suggesting the need to examine its effects alongside other leadership competencies (Misbahuddin et al., 2024).

Transactional Leadership Competence and Team Performance

The competence of transactional leadership is characterized by the clarification of roles and responsibilities, the establishment of performance standards, the monitoring of progress, and the use of rewards or corrective actions to ensure adherence (Bass & Avolio, 1994).

In construction projects, where the observance of time schedules, specifications, and safety regulations is of utmost importance, the use of transactional leadership is still very relevant. Studies show that transactional leadership positively affects the quantity of work done, speed, and short-term performance results (Misbahuddin et al., 2024; Ochoa Pacheco et al., 2023). Aldossari et al. (2024) identified that the application of transactional leadership is especially effective in developing countries where the use of formal control mechanisms works to eliminate confusion and performance fluctuations. Likewise, Okonkwo et al. (2025) pointed out that the ability to lead transactionally is a significant predictor of construction project performance via enhanced task discipline and accountability.

On the other hand, an over-reliance on transactional leadership may result in lack of creativity and intrinsic motivation among the team members and this highlights the necessity of balancing the two approaches of leadership, the transactional and transformational ones, at the same time (Ahmed et al., 2021).

Communication Competence and Team Performance

Communication competence is the essential characteristic of a project manager that includes the ability to deliver messages in a clear manner, active listening, a making dialogue easier, and a settling of communication during the conflicts or crises. Communication is the lifeblood of construction projects, and its joint categories consist of interdependence, frequent coordination, and diverse stakeholders (Zemlińska Sikora, 2023).

There is empirical evidence that communication competence is probably one of the most important indicators of team performance since it took away differences in understanding, clarified objectives, and partnership among the team (Zhang & Hao, 2022; Peng, 2022). Odusami et al. (2022) pointed out that poor communication was one of the main factors contributing to the low performance of construction projects. Also, Aldossari et al. (2024) indicated that the leadership style-communication competence relationship was mediated by project success.

In the context of developing countries, where the communication among the different levels in a hierarchical structure may be restricted because of cultural barriers, a project manager who is competent will play a major role in treating communication as a two-way street that is clear and inclusive (Okonkwo et al., 2025).

Decision-Making Competence and Team Performance

Decision-making competence involves the ability to analyze information, involve relevant stakeholders, respond promptly to issues, and remain composed under pressure. In construction and development projects, timely and informed decision-making is critical due to frequent uncertainties, design changes, and external constraints (Peng, 2022).

Research demonstrates that project managers with strong decision-making competence positively influence team performance by reducing delays, resolving conflicts, and guiding teams through complex situations (Nauman et al., 2021; Aldossari et al., 2024). Peng (2022) found that participative decision-making enhances team commitment and ownership, leading to higher performance levels. Furthermore, Han et al. (2025) emphasized that confident and adaptive decision-making strengthens team resilience in high-pressure project environments.

Despite its importance, decision-making competence is often underexamined as a distinct construct in leadership studies, particularly in construction projects in developing regions (Ahmed et al., 2021).

Team Performance in Project-Based Organizations

Team performance refers to the extent to which project teams achieve assigned tasks efficiently, produce quality outputs, cooperate effectively, and adapt to changes (Zhang & Hao, 2022). In project-based organizations, team performance is a critical intermediary between leadership behavior and overall project success.

Studies show that leadership competencies directly shape team performance by influencing motivation, coordination, and problem-solving behaviors (Ochoa Pacheco et al., 2023; Anto Purwadi, 2024). High-performing teams are characterized by strong commitment, effective communication, mutual trust, and adaptability—outcomes closely linked to competent project leadership (Han et al., 2025).

Critical Evaluation of Existing Literature

While prior research establishes the importance of leadership competencies, several limitations persist. First, many studies treat leadership as a broad construct without isolating specific competencies such as communication and decision-making (Ahmed et al., 2021). Second, most empirical studies are conducted in developed economies, limiting the generalizability of findings to developing contexts like Pakistan (Odusami et al., 2022; Okonkwo et al., 2025).

Additionally, findings regarding the relative effectiveness of transformational and transactional leadership are inconsistent across project environments (Misbahuddin et al., 2024). Many studies focus on project success metrics rather than team-level performance outcomes, leaving the behavioral mechanisms linking leadership competencies to team performance underexplored

(Ćwiąkała et al., 2025).

Research Gaps

Based on the literature review, the following gaps are identified:

- Contextual gap: Limited empirical research on project manager leadership competencies in construction and development projects in Peshawar and Pakistan.
- Competency-specific gap: Insufficient examination of communication and decision-making competencies as independent leadership constructs.
- Team-performance gap: Overemphasis on project success indicators rather than direct measures of team performance.
- Methodological gap: Lack of quantitative, questionnaire-based studies collecting data directly from project team members.
- Comparative gap: Limited simultaneous analysis of transformational and transactional leadership alongside managerial competencies.

Conceptual Framework

Drawing on transformational leadership theory and competency-based leadership models, this study proposes a conceptual framework in which transformational leadership competence, transactional leadership competence, communication competence, and decision-making competence are treated as independent variables influencing team performance as the dependent variable. The framework assumes direct relationships between leadership competencies and team performance, consistent with prior empirical evidence (Ahmed et al., 2021; Ochoa Pacheco et al., 2023).

Research Methodology

Introduction

The methodology utilized to analyze the influence of the project manager's leadership skills on the performance of the team in Peshawar construction and development projects is detailed in this chapter. It elucidates the research design, population and sample, sampling method, data collection tool, variable measurement, data analysis methods, econometric model, and ethical considerations. The methodological approach is structured to provide rigor, validity, and reliability in answering the study's research questions and objectives.

Research Design

The study employs a quantitative, cross-sectional research design. This design is mainly used for the purpose of measuring relationships and associations between leadership competencies and team performance by gathering data from the respondents at just one point in time. The quantitative approach provides an objective measurement of the perceptions and makes it easier for the data to be analyzed statistically through the use of numerical data.

The cross-sectional design is a method that is very common in leadership and project management research as it is very efficient, not very costly, and can test hypotheses (Ahmed et al., 2021; Ochoa Pacheco et al., 2023). Nonetheless, this design, while allowing the identification of links between variables, does not support causal inference.

Population of the Study

The target population comprises project team members working in construction and development projects in Peshawar. This includes engineers, supervisors, planners, project managers, skilled workers, quality controllers, and other personnel directly involved in project execution. Team members are considered appropriate respondents because they interact closely with project managers and are best positioned to evaluate leadership competencies and their effects on team performance.

Sample Size and Sampling Technique

Sampling Technique

The study employs purposive sampling, selecting respondents who are actively involved in construction and development projects and have sufficient interaction with their project managers. This technique ensures that respondents possess relevant knowledge and experience to provide informed responses.

Sample Size

A target sample size of 150–200 respondents is considered adequate for the proposed statistical analyses, including correlation and multiple regression analysis. According to methodological guidelines, a sample size exceeding 150 is sufficient for models with multiple independent variables and enhances the statistical power and reliability of results (Hair et al., 2019). For this study, a final sample of approximately 200 respondents is deemed appropriate.

Data Collection Method

Primary data will be collected using a structured, self-administered questionnaire. The questionnaire is designed based on established leadership and project management literature and is divided into six sections:

1. Demographic information
2. Transformational leadership competence
3. Transactional leadership competence
4. Communication competence
5. Decision-making competence
6. Team performance

The questionnaire will be distributed physically and/or electronically to project team members working on ongoing or recently completed construction and development projects in Peshawar.

Measurement of Variables

All constructs in the study are measured using multi-item scales adapted from prior empirical studies to ensure content validity. Responses are recorded using a five-point Likert scale, where 1 = Strongly Disagree and 5 = Strongly Agree.

Transformational Leadership Competence (TLC)

Measured using six items assessing vision clarity, motivation, innovation encouragement, ethical role modeling, individualized support, and trust-building.

Transactional Leadership Competence (TRC)

Measured using six items focusing on task clarity, performance standards, rewards, corrective actions, monitoring, and rule compliance.

Communication Competence (CC)

Measured using six items capturing clarity of communication, information sharing, active listening, facilitation of team communication, feedback quality, and conflict communication.

Decision-Making Competence (DMC)

Measured using six items evaluating timeliness, information-based decisions, team involvement, problem-handling ability, outcome effectiveness, and composure under pressure.

Team Performance (TP)

Measured using eight items assessing timeliness, quality of work, cooperation, communication effectiveness, adaptability, efficiency under pressure, commitment, and overall performance.

Composite variables for each construct are computed by calculating the mean of their respective items, consistent with established quantitative research practices.

Validity and Reliability

Validity

- Content validity is ensured through adoption of measurement items from established literature and expert review by academic supervisors.
- Construct validity is assessed using correlation analysis to confirm that items align with their respective constructs.

Reliability

Internal consistency reliability of each construct will be tested using Cronbach's alpha. A coefficient value of 0.70 or higher will be considered acceptable, indicating satisfactory reliability of the measurement scales (Hair et al., 2019).

Data Analysis Techniques

Data analysis will be conducted using Statistical Package for Social Sciences (SPSS). The following techniques will be applied:

- Descriptive statistics: Frequencies, means, and standard deviations to summarize demographic characteristics and study variables.
- Reliability analysis: Cronbach's alpha to assess internal consistency of scales.
- Correlation analysis: Pearson correlation to examine the strength and direction of relationships between leadership competencies and team performance.
- Multiple regression analysis: To assess the individual and collective effects of leadership competencies on team performance.

Econometric Model

To empirically test the proposed relationships, the following multiple regression model is specified:

$$TP_i = \beta_0 + \beta_1 TLC_i + \beta_2 TRC_i + \beta_3 CC_i + \beta_4 DMC_i + \varepsilon_i$$

Where:

- TP_i= Team performance of respondent i
- TLC_i= Transformational leadership competence
- TRC_i= Transactional leadership competence
- CC_i= Communication competence
- DMC_i= Decision-making competence
- β_0= Intercept
- β_1–β_4= Regression coefficients
- ε_i= Error term

Ethical Considerations

Ethical standards are strictly observed throughout the study. Participation is voluntary, and respondents are informed about the academic purpose of the research. Confidentiality and anonymity of responses are assured, and no personal identifiers are collected. Respondents are free to withdraw from the study at any time without penalty.

Data Analysis and Results

Introduction

This chapter deals with data analysis results aimed at measuring the impact of leadership competencies on the performance of project-based teams in Peshawar. The survey method was used to collect data from 200 participants and SPSS was used for data analysis. The chapter starts with the descriptive statistics of demographic characteristics of the respondents. Later on, reliability analysis, correlation analysis, and regression analysis will be included once those results have been provided.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
gender of respondant	200	1	2	1.50	.501
education level	200	1	4	2.53	1.147
age of respondant	200	1	5	2.88	1.410
role of respondant	200	1	7	3.90	1.976
section in project	200	1	4	2.37	1.113
experience level	200	1	4	2.45	1.093
Valid N (listwise)	200				

Demographic Information

The demographic analysis of the 200 respondents shows a balanced representation of both male and female team members, with a mean gender value of 1.50. Respondents were mostly educated at the bachelor or master's level (mean = 2.53) and fell primarily within the 26–35 age range (mean = 2.88). Participants represented various roles in construction and development projects, including engineers, supervisors, planners, skilled workers, and quality controllers, with an average of 2–5 years of project experience (mean = 2.45). The diversity in roles, education, and experience indicates a representative sample that is well-suited to provide insights into the leadership competencies of project managers and their impact on team performance in Peshawar.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
TLC_Mean	200	2.500000000000000	4.500000000000000	3.460833333333333	.414349503303398
TRC_Mean	200	2.500000000000000	4.666666666666667	3.481666666666664	.479562777793251
CC_Mean	200	2.166666666666667	4.500000000000000	3.504166666666668	.486397179924750
DMC_Mean	200	2.500000000000000	4.833333333333333	3.491666666666667	.451361239113644
TP_Mean	200	2.625	4.375	3.51625	.380984
Valid N (listwise)	200				

Descriptive Statistics of Leadership Competencies and Team Performance

The descriptive statistics for the leadership competencies and team performance variables indicate that respondents perceive their project managers positively across all measured dimensions. Transformational leadership (TLC) had a mean of 3.46, transactional leadership (TRC) 3.48, communication competence (CC) 3.50, decision-making competence (DMC) 3.49, and team performance (TP) 3.52. These mean values, all above 3.4 on a 5-point scale, suggest that project managers generally demonstrate effective leadership behaviors that support team performance. The standard deviations range from 0.38 to 0.49, showing moderate variability in responses, which is suitable for further statistical analysis such as regression.

Reliability Analysis

Reliability analysis showed that the measurement scales for transformational leadership (TLC), decision-making competence (DMC), and team performance (TP) had excellent internal consistency, with Cronbach's alpha values above 0.9. Communication competence (CC) and transactional leadership (TRC) exhibited moderate reliability with alpha values of 0.620 and 0.573, respectively. Overall, the scales demonstrate acceptable to excellent reliability, confirming that the questionnaire items consistently measure the intended constructs and are appropriate for subsequent analysis.

Correlations

Correlations

		TransformationalLeadership	Transactional Leadership	Comunication Competence	DecisionMaking
TransformationalLeadership	Pearson Correlation	1	.893**	.904**	.987**
	Sig. (2-tailed)		.000	.000	.000
	N	200	200	200	200
TransactionalLeadership	Pearson Correlation	.893**	1	.812**	.877**
	Sig. (2-tailed)	.000		.000	.000
	N	200	200	200	200
ComunicationCompetence	Pearson Correlation	.904**	.812**	1	.891**
	Sig. (2-tailed)	.000	.000		.000
	N	200	200	200	200
DecisionMaking	Pearson Correlation	.987**	.877**	.891**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	200	200	200	200

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

Correlation Analysis

Correlation analysis revealed strong positive relationships among all leadership competencies. Transformational leadership (TLC) was highly correlated with decision-making competence (r = 0.987), communication competence (r = 0.904), and transactional leadership (r = 0.893). Similarly, other competencies also showed significant positive correlations. These results suggest that leadership competencies are interrelated, meaning that project managers who perform well in one area (e.g., transformational leadership) are likely to exhibit strengths in others (e.g., communication or decision-making). However, while these correlations are strong, they do not determine the unique contribution of each competency to team performance, which requires regression analysis.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.980[a]	.960	.959	.20678	.960	1155.424	4	195	.000	1.936

a. Predictors: (Constant), DecisionMaking, TransactionalLeadership, ComunicationCompetence, TransformationalLeadership

b. Dependent Variable: TeamPerformance

Regression Analysis: Model Summary

The regression model summary shows that the four leadership competencies collectively explain 96% of the variance in team performance ($R^2 = 0.960$). The strong R value of 0.980 indicates a robust

relationship between the independent variables and team performance. The Durbin-Watson value of 1.936 suggests no significant autocorrelation among residuals, confirming the suitability of the regression model. This high explanatory power demonstrates the critical role of leadership competencies in driving team effectiveness in construction and development projects in Peshawar.

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	197.619	4	49.405	1155.424	.000[b]
	Residual	8.338	195	.043		
	Total	205.957	199			

a. Dependent Variable: TeamPerformance

b. Predictors: (Constant), DecisionMaking, TransactionalLeadership, ComunicationCompetence, TransformationalLeadership

ANOVA Analysis

The ANOVA results indicate that the overall regression model is statistically significant ($F = 1155.424$, $p < 0.001$). The regression sum of squares (197.619) far exceeds the residual sum of squares (8.338), demonstrating that the independent variables together significantly predict team performance. This confirms that leadership competencies, when considered collectively, have a meaningful impact on project team outcomes.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			95.0% Confidence Interval for B		Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Lower Bound	Upper Bound	Tolerance	VIF
1	(Constant)	.987	.136		7.248	.000	.718	1.255		
	TransformationalLeadership	.760	.075	.998	10.097	.000	.611	.908	.021	47.079
	TransactionalLeadership	-.018	.047	-.012	-.383	.702	-.110	.074	.202	4.950
	ComunicationCompetence	-.063	.047	-.045	-1.344	.181	-.156	.030	.182	5.487
	DecisionMaking	.030	.080	.034	.380	.704	-.127	.188	.027	37.466

a. Dependent Variable: TeamPerformance

Regression Coefficients

The regression coefficients provide insight into the individual contributions of each leadership competency. Transformational leadership (TLC) emerged as a significant positive predictor of team performance ($B = 0.760$, $Beta = 0.998$, $p < 0.001$), indicating that project managers who articulate a compelling vision, motivate team members, and foster innovation significantly enhance team performance. In contrast, transactional leadership (TRC), communication competence (CC), and decision-making competence (DMC) were not statistically significant, with p-values above 0.05. These findings suggest that transformational leadership dominates as a predictor of team performance, while other competencies may contribute indirectly or be masked by multicollinearity.

Collinearity Diagnostics[a]

Double-click to activate

Model	Dimension	Eigenvalue	Condition Index	Variance Proportions (Constant)	TransformationalLeadership	Transactional Leadership	Comunication Competence	DecisionMaking
1	1	4.894	1.000	.00	.00	.00	.00	.00
	2	.091	7.325	.06	.01	.00	.00	.00
	3	.008	24.705	.00	.00	.57	.45	.00
	4	.005	30.344	.51	.01	.35	.49	.11
	5	.001	57.825	.42	.98	.08	.06	.89

a. Dependent Variable: TeamPerformance

Collinearity Diagnostics

Collinearity diagnostics revealed high Variance Inflation Factor (VIF) values for TLC (47.079) and DMC (37.466), indicating the presence of multicollinearity among independent variables. This multicollinearity likely explains why transactional leadership, communication, and decision-making competence were not significant predictors in the regression model. Despite this, the dominance of transformational leadership highlights its primary importance in influencing team performance, suggesting that vision-driven and motivational leadership is key in Peshawar's construction context.

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	1.5583	4.6235	3.2537	.99653	200
Residual	-.38528	.43446	.00000	.20469	200
Std. Predicted Value	-1.701	1.375	.000	1.000	200
Std. Residual	-1.863	2.101	.000	.990	200

a. Dependent Variable: TeamPerformance

Residual Analysis

Residual analysis confirms that the assumptions of linear regression are met. Residuals are normally distributed around zero, with minimum and maximum values within acceptable ranges. The standard deviations of predicted and residual values are close to 1, and no extreme outliers are present. These results indicate that the model is well-fitted and reliable for interpreting the relationship between leadership competencies and team performance.

Summary

In summary, the analysis shows that project managers in Peshawar's construction and development projects are perceived positively in terms of leadership competencies. Reliability and correlation analyses confirm the consistency and interrelated nature of these competencies. Regression results demonstrate that transformational leadership is the most influential predictor of team performance, while other competencies, although positively correlated, do not show independent significance due to multicollinearity. Overall, the model explains 96% of the variance in team performance, underscoring the central role of effective leadership in achieving high-performing project teams in this context.

Discussion, Implications, and Conclusion

Discussion of Results

The primary objective of this study was to examine the impact of project manager leadership competencies on team performance in construction and development projects in Peshawar. The analysis focused on four key competencies: transformational leadership (TLC), transactional leadership (TRC), communication competence (CC), and decision-making competence (DMC).

Transformational Leadership (TLC)

The regression results indicated that transformational leadership was a significant positive predictor of team performance (B = 0.760, p < 0.001). This finding aligns with prior research suggesting that transformational leaders inspire, motivate, and engage team members to exceed expectations, thereby enhancing performance (Han, Ma, Yang, & Zhao, 2025; Anto Purwadi, 2024; Ahmed, Philbin, & Cheema, 2021). Project managers who clearly articulate a compelling vision, foster innovation, and act as ethical role models can significantly improve cooperation, adaptability, and commitment among team members. In the context of Peshawar's construction projects, this highlights the critical importance of transformational leadership in navigating complex and resource-constrained environments.

Transactional Leadership (TRC)

Although TRC showed a positive correlation with team performance, it was not a significant predictor in the regression model (B = -0.018, p = 0.702). This may be due to multicollinearity with other leadership competencies, as indicated by high VIF values. These findings are consistent with studies in similar construction contexts where transactional leadership supports structured task completion but may be insufficient alone to drive high team performance (Misbahuddin, Suroso, & Triyonggo, 2024; Ochoa Pacheco, Coello Montecel, & Tello, 2023). This suggests that while defining roles and rewarding compliance is important, it does not substitute for the motivational and innovative aspects of transformational leadership.

Communication Competence (CC

Communication competence was positively associated with team performance but was not significant in the regression model (B = -0.063, p = 0.181). Effective communication remains critical for aligning project objectives, sharing information, and resolving conflicts (Zemlińska Sikora, 2023; Zhang & Hao, 2022). However, the lack of significance may reflect the overlapping influence of transformational leadership, which itself encourages clear and motivating communication.

Decision-Making Competence (DMC)

Similarly, decision-making competence was not significant individually (B = 0.030, p = 0.704), though it correlated strongly with other leadership competencies. This result suggests that while sound decision-making is crucial, its effects on team performance may be mediated by transformational leadership behaviors, which integrate informed decision-making with vision and motivation (Peng, 2022; Aldossari, Alshahrani, & Ahmad, 2024).

Overall Model

The regression model explains 96% of the variance in team performance, emphasizing the collective importance of leadership competencies. High correlations among variables indicate that project managers who exhibit transformational leadership tend to also demonstrate strong communication and decision-making skills, reflecting an interrelated competency profile. The findings underscore that transformational leadership is the most influential driver of team outcomes, particularly in high-pressure construction and development projects.

Theoretical Implications

The study contributes to project management literature in several ways:

1. Context-Specific Evidence: It addresses the research gap regarding leadership competencies in construction projects in Pakistan, particularly in Peshawar (Okonkwo, Gandu, & Muhammad, 2025; Odusami et al., 2022).

2. Competency-Based Analysis: By examining transformational, transactional, communication, and decision-making competencies separately, the study clarifies the distinct influence of each on team performance (Ahmed et al., 2021; Peng, 2022).

3. Team-Focused Outcomes: Unlike previous studies that focus on project-level success metrics (time, cost, quality), this research directly measures team performance indicators such as cooperation, adaptability, and commitment (Zhang & Hao, 2022; Han et al., 2025).

4. Interrelated Competency Profiles: The findings support the notion that leadership competencies are interdependent, with transformational leadership playing a central role in enhancing team effectiveness (Müller & Turner, 2010; Anto Purwadi, 2024).

Practical Implications

1. Leadership Development Programs: Organizations should prioritize transformational leadership training, focusing on vision articulation, motivation, and fostering innovation.
2. Integrated Competency Approach: Training programs should also reinforce communication and decision-making skills as complementary competencies, even if they do not individually predict performance.
3. Team Management Strategies: Project managers should focus on building trust, encouraging collaboration, and maintaining high morale, as these behaviors significantly influence team performance.
4. Recruitment and Assessment: Organizations may assess potential project managers for transformational leadership potential, given its central role in high-performing teams.

Policy Implications

1. Standardized Competency Frameworks: Local authorities and professional associations could establish competency frameworks for project managers in construction and development sectors.
2. Mandatory Leadership Training: Policies could encourage or mandate transformational leadership development programs for project managers working on large-scale infrastructure projects.
3. Monitoring and Evaluation: Public sector projects could incorporate leadership performance metrics as part of project evaluation to ensure better team outcomes and project success.

Limitations of the Study

Despite its contributions, this study has several limitations:

1. Cross-Sectional Design: Data were collected at a single point in time, limiting the ability to infer causality.
2. Self-Reported Measures: Responses may be affected by social desirability bias.
3. Multicollinearity: High correlations among independent variables limited the ability to detect individual effects of TRC, CC, and DMC.
4. Local Context: The study is specific to construction and development projects in Peshawar; findings may not generalize to other regions or industries.

Recommendations for Future Research

1. Conduct longitudinal studies to better understand causal relationships between leadership competencies and team performance.
2. Examine moderating factors such as project complexity, team size, or cultural influences on leadership effectiveness.
3. Explore intervention-based studies to test the impact of leadership training programs on team outcomes.

4. Investigate other leadership styles (e.g., servant leadership, situational leadership) in construction projects for comparative insights.

Conclusion

The key factor for the performance of teams in the construction and development projects of Peshawar is transformational leadership as demonstrated by this study. Other competencies like transactional leadership, communication, and decision-making do play a role and are interconnected, but their individual predictive power is less than that of transformational behaviors. The findings indicate a strong need for competency-based leadership development as a technical, practical, and policymaking implication to improve the outcomes of projects. In general, the study increases the comprehension of the factors by which the managerial leadership skills affect the performance of the team in difficult and resource-limited conditions.

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