
Effect of Transformational Leadership on Project Performance in Projects: Mediating Role of Quality Management Practices

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Abstract

Peshawar construction industry in Pakistan is facing acute issues, such as inflation and project overruns, timeline, and project quality in project management. This study addresses the impact of transformational leadership (TL) on the Project performance (PP) in construction projects and the role of quality management practices (QMPs) as the intermediary in this relationship. Transformational leadership has been postulated to serve as a primary motivational, innovative and collective driving force- all factors that are considered necessary in improving the results of a project. Also, the QMPs like Total Quality Management (TQM), Six Sigma, and Lean Construction are also examined as methodical frameworks that can be used to enhance operational effectiveness and reduce wastage in the production processes. The methodology used was a survey-based approach where 232 construction professionals in Peshawar were used to collect the data. The results of regression and mediation analysis showed that transformational leadership has a great positive influence on Project performance, directly and indirectly through QMPs. These results demonstrate the importance of the combination of transformational leadership and positive quality management practices as they produce better outcomes on projects in the form of high quality, completion on time, and cost control. The earned understanding is highly relevant to the construction project managers, policymakers and stakeholders in the construction industry in Peshawar where the need to develop leadership and harmonize quality management practices is high to enable construction project success.

Keywords: Transformational Leadership, Project performance, Quality Management Practices, Construction projects, Total quality management

1. Background of the Study

Construction industry is a key factor contributing to the growth of an economy especially in urban centers that grow at high rates like in Peshawar, Pakistan. The industry plays a significant role in the development of infrastructure, regional employment, and economy in general. However, construction projects are often faced with the challenge of cost and time overruns, poor quality, and ineffective project management processes which negatively impact on the project results and the need to improve Project performance in order to achieve a successful project in the region.

Transformational leadership has also received vast academic interest due to its ability to boost motivation, engagement and performance in project teams. In contrast to transactional leadership, which is based on rewards and penalties, transformational leadership is grounded on inspiring and motivating team members to exceed expectations, become innovative, and develop a common vision of the institution (Agrawal &

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Dhamija, 2024). Transformational leadership can be an essential aspect of the construction project where a diverse workforce and different stakeholder groupings are involved, whose goals and objectives are quite different, so the coordination of the team level is required, the conflict can be reduced, and the overall goals and objectives of the project are to be adhered to.

Quality management techniques, such as Total Quality Management (TQM), Six Sigma, and Lean construction are systematic methods of making sure that the construction processes are streamlined, efficient, and quality-oriented (Alawag et al., 2024). These are the methodologies that focus on the constant improvement, reducing wastage and making the processes standard in such a way that they have a substantial positive impact on the project efficiency and effectiveness. With the implementation of QMPs in the operational processes, the company will be able to contend the problem of poor quality, schedule slippage, and resource wastages, which subsequently directly affect the performance of the operation.

The Peshawar construction industry continues to struggle with Project performance issues; but this should not be viewed as merely delays, cost overruns and quality issues. This is too generic and has been widely used in the construction literature. The project management failure is the poor transformation of management decisions into project execution. In the context of the Pakistani construction industry, project failure and cost overruns have been attributed to poor project management, poor site management, poor start-up planning, poor quality, design changes, bureaucracy and cost-estimation issues (Iqbal, 2024). Also, broader construction delay studies reveal that poor planning, design variations, poor supervision, incompetent project teams, poor quality of materials, and poor cost control consistently have a negative impact on time and cost performance (Nadir & Ahmed, 2020).

So, the major issue in Peshawar construction projects is not just the presence of delays and cost overruns, but the managerial inability to manage schedule variance, cost overruns, rework, quality non-conformance, labour productivity and client satisfaction through effective project leadership and quality management. While transformational leadership is well linked with project success, the current studies do not provide enough insight into how leadership behaviours are linked with Project performance in construction projects. The recent literature on construction leadership indicates that the relationship building, communication, collaboration and people-oriented leadership behaviours are critical for the success of construction projects, but it also calls for more empirical studies in the context of construction (Rehan et al., 2024).

In Pakistan, studies have focused on transformational leadership and project success with moderating factors such as support from top management, but this does not directly link to the role of quality management practices in construction project implementation in the country (Fareed et al., 2023). There is therefore a gap: leadership may not directly affect Project performance unless it is translated into project practices like quality planning, site inspection, documentation, process control, corrective action and continuous improvement. Therefore, quality management practices are important because they provide the operational platform for leadership to have an impact on projects. In the construction industry of Pakistan, total quality management programs, such as operational focus, management commitment and employee involvement have been shown to influence project performance and mediation evidence also suggests that management commitment can mediate the impact of employee involvement and project performance (Afzal et al., 2022). Likewise, Khalfan et al. (2022) have shown in Oman's construction companies that leadership has a significant effect on quality management practices and Project performance, and quality management practices have a significant effect on Project performance. But these results are from a different nation and cannot be blindly applied to Peshawar where construction projects may encounter different constraints in resources, contractor practices, regulations, labour and stakeholder coordination issues.

This study adds to the literature as it does not merely verify the obvious proposition that transformational leadership is positively associated with Project performance. It tests the claim that quality management practices mediate the positive impact of transformational leadership on Project performance in construction projects in Peshawar. It also contributes by contextualising the leadership-quality-performance relationship

in the construction project environment in Peshawar, instead of generic construction performance. Its significance is that it can reveal whether project managers in Peshawar must consider not just inspirational leadership actions, but also the need to develop quality-management capacity in projects through standardised planning, inspection, documentation, corrective action, and continuous improvement. This makes this study more relevant to contractors, consultants and project managers by linking the leadership behaviour with project management problems of rework, schedule overruns, cost overruns, non-compliance with quality, and client dissatisfaction.

1.1 Research Questions

The research will address the following questions:

1. How does transformational leadership influence Project performance in construction projects in Peshawar?
2. What role do quality management practices play in mediating the relationship between transformational leadership and Project performance in construction projects in Peshawar?

1.2 Research Objectives

The primary objectives of this study are:

1. To investigate the direct impact of transformational leadership on Project performance in construction projects in Peshawar.
2. To examine the mediating role of quality management practices between transformational leadership and Project performance in construction projects.

2. Literature Review

2.1 Transformational Leadership

Transformational leadership seems to represent a central variable applicable to the situation of construction projects, in which the heterogeneous nature of the workforce and the combination of various stakeholders usually have diverse goals and objectives. The structured approach in working practices put at the team level is also a must, as well as eliminating conflicts and making sure they are aligned with the project objectives.

The empirical evidence is that transformational leaders would be likely to forge cooperation, trust and individual as well as collective responsibility among the team members (Burmeister et al. Construction domains, in which such leadership is practiced has been linked to enhanced exercise of decision-making, communication and problem-solving which are essential factors for successful results. Moreover, transformational leadership may be described as the type of leader behavior in which followers are encouraged to work for the organization or project's interest before their own and is aimed at producing high levels of performance and commitment to the organization (Effelsberg et al., 2014). The style is characterized by leaders who can motivate team mates to perform with high effectiveness and achieve outcomes of excellence by creating environment where trust, creativity and dedication prevail (Aravindhan 2025). Transformational leaders enhance the operations performance of the construction project by bringing about team members collaboration, effective communication and innovative thinking within the team thus tackling the nature of construction project dynamism (Rehan et al., 2024).

Total Quality Management (TQM), Six Sigma, and Lean construction are quality management approaches that offer the systematic method of ensuring that the construction processes are streamlined, effective, and quality-oriented (Alawag et al., 2024). These approaches put much emphasis on the aspect of constant improvement, reduction of waste and standardisation of processes thus have a strong positive impact on project efficiency and effectiveness. Once QMPs are incorporated into the process of operation, organisations are able to alleviate the problem of low quality, schedule slippage and waste of resources, all

of which have a direct effect on the performance of the operations.

Combination of transformational leadership and quality management practices is a potentially effective strategy in terms of project improvement. Transformational leadership may be able to give the vision and motivation that would be necessary to engage QMPs in the right way. Empirical research has shown that transformational leadership enhances team processes, develops strong team culture, and produces quality outputs (Klaic et al., 2020). Transformational leadership could be used in Peshawar, where the construction projects have regularly experienced shortages of resources, skilled labour shortage, and logistical issues thereby helping the teams to work to the best of their ability and focus on organisational goals.

Zaman et al. (2020) also extend the argument to positively impact the project success with the transformational leadership approach through the enhancement of the levels of commitment, innovation, and alignment with long-term project objectives. As an example, the transformational leaders believe in a collective vision, which is especially useful in construction works, where delays, cost increases, and unexpected distractions are the order of the day.

2.2 Project Performance in Construction Projects

The Project performance in the construction industry is traditionally measured by a set of performance indicators, including cost-efficiency, time management, quality control as well as adherence to safety. The high Project performance ensures that construction projects are completed within the stipulated time, meet the negotiated budgetary constraints, and meet the required quality standards (Takim and Akintoye, 2002). The main drivers towards achieving these objectives are a good project manager and leadership. It has been shown through empirical evidence that projects that are consistent with strong leadership practices face fewer scheduling delays, lower costs, and an increased level of stakeholder satisfaction (Abolghasemi et al., 2024).

The difficulties that hinder operational effectiveness of the construction works in Peshawar are distinctive reasons due to infrastructure, fluctuation in material prices and no coordination among contractors or subcontractors/local governmental authorities. These delays frequently result in missed deadlines, unnecessary waste of resources and construction of substandard projects (Rahman and Alhaji, 2020). In the context of Pakistani public sector, such inefficiencies are further inflated by ideas like political instability, non-uniform observance of regulations and rules and anomalies in local governance (Mahmood & Asad, 2018).

The influence of leadership on the Project performance of construction projects has been investigated at different levels, for instance where transformational leadership is responsible to create culture of cooperation, open communication and responsibility sharing between project teams (Shenhar et al., 2001). You can also find in the literature that there is a cluster of determinants which the project operational effectiveness is related to construction operations, and leadership as being one of those determinants does really affect successful projects.

2.3 Mediating Role of Quality Management Practices

The performance of construction industries has traditionally been measured using a set of different indicators, including the efficiency in costs, compliance with a schedule, quality control, and safety compliance. Achievement of high Project performance ensures that construction projects are realised within agreed time limits, meet contracted budgetary limits and meet quality standards that are required (Takim & Akintoye, 2002). Effective leadership and project management become a key to achieving these goals. There are also empirical evidence points to the observation that the projects that are supported with good leadership practices are characterized by lower delays, reduced costs, and increased satisfaction among stakeholders (Abolghasemi et al., 2024).

The distinct characteristics of operational efficacy in the construction projects in Peshawar are

predetermined by the absence of the corresponding infrastructure, unstable price growth of the materials, and the inability to synchronize the activities of the contractors and subcontractors with the local regulatory authorities. Such hindrances often lead to delays, budget escalation, and poor workmanship (Rahman & Alhaji, 2020). In the Pakistani public sector context, regulation enforcement, governance loopholes and political instability are some other factors which are contributing to these inefficiencies (Mahmood & Asad 2018).

The impact of leadership on the site operations performance has been tested, although in different sectors and it is evident that leadership is a key to ensure project teams work together, communicate and are accountable for their functions (Shenhar et al., 2001). While existing literatures have agreed on the factors influencing project performance, one of these has been noted to regard leadership as a crucial determinant in the implementation process of a project.

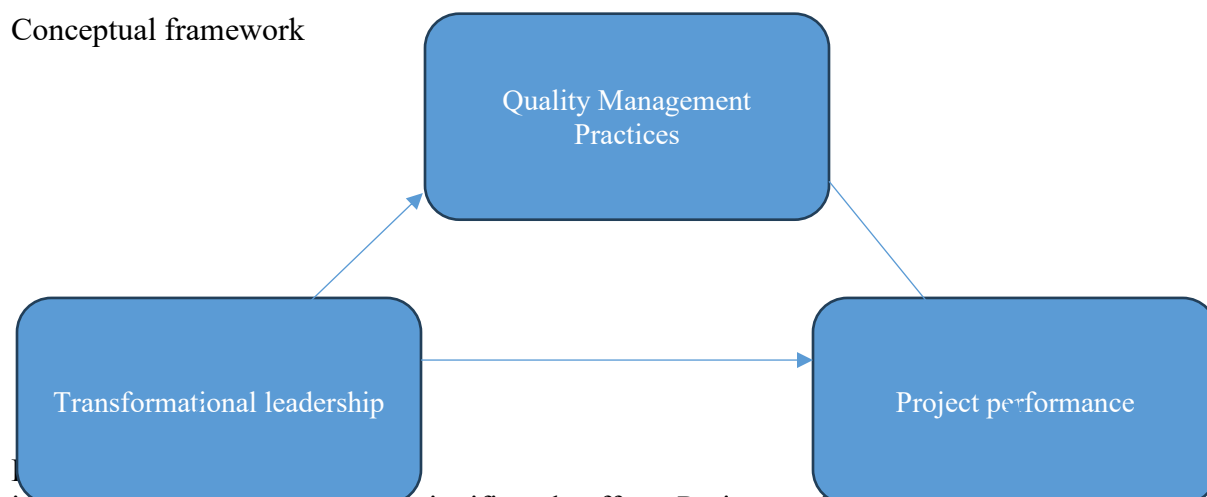
2.4. Transformational Leadership and Quality Management Practices

The fusion of transformational leadership and QM's is a potent combination that can have a profound impact on operation performance under construction projects. Transformational leaders can empower, enable and motivate teams to adopt quality oriented-a project may be envisioned to integrate the scope of the project so that consideration for quality is embedded in every thing (Kayani et al., 2025). These leaders will make it easier to establish a culture of quality that can lead to increased performance on construction projects, and will do so by setting expectations for innovation and continuous improvement.

Dedianto et al. (2025) emphasised that transformational leadership is able to influence the culture of an organization by inspiring employees to thoughts, acts through which quality becomes a question of attitudes and common values and whose vision developed by the leader is realised thanks to programs oriented towards sustainable quality improvement. In the context of capital projects, this interpretation includes not only people who inspire their function or group but also require to ensure that these teams have a structured quality-control process in place, and thereby enable amazing project outcomes.

Moreover, quality-management techniques, including Lean Construction, can be also used as the part of the paradigm of transformational leadership to increase the performance of the operations further by reducing the waste, better managing time, and optimizing the utilization of the resources (Burawat, 2019). The intersection of transformational leadership and QMPs in Peshawar where building projects are often characterized by delays caused by inefficient practices can result in creating a more streamlined and efficient project environment that will help enhance performance.

Conceptual framework



- i. Transformational Leadership significantly affects Project performance
- ii. Quality Management Practices mediates the relationship of Transformational leadership and Project

performance

2.4 Underpinning Theory

Four theories guide this study: Transformational Leadership Theory, Quality Management Theory, Contingency Theory and the Resource-Based View (RBV). These theories are not considered as competing theories, but as interrelated perspectives on the impact of leadership and quality management practices on project and organisational performance. Transformational Leadership Theory explains how leaders influence staff motivation, commitment and preparedness for change; Quality Management Theory explains how formalised systems such as TQM, Lean construction and Six Sigma create process stability and improve quality outcomes; Contingency Theory explains the need for leadership styles to align with uncertain and volatile project environments (Fiedler, 1967; Lawrence and Lorsch, 1967); and RBV explains how quality management practices can become valuable organisational capabilities that enhance performance (Wernerfelt, 1984; Barney, 1991).

3. Methodology

3.1. Population

The target group of the research will include project managers, team leaders, and workers that work in Peshawar construction projects. The selection of this group is based on the fact that they are the ones who are directly involved in the running and organization of the construction projects and therefore can give a valuable input on the effects of transformational leadership and quality management methods on the performance of the operations.

The participants were selected using a stratified random sampling method. The sample size was 300 respondents which was statistically feasible to cause regression analysis as postulated by Hair et al. (2011).

3.2. Data Collection

A standardized questionnaires were be used to collect data that contains Likert-scale items. the questionnaires were previous studies such as Transformational leadership from (Agha, 2016) with 13 items. Similarly, Organizational Performance from (Gu, Hoffman, Cao and Schniederjans, 2014) with 8 items. Quality Management Practices adopted from (Lu et al. (2019) with 15 items. The questionnaires sent through emails to provide a broad and effective distribution, and the subjects were provided with sufficient guidelines on how to complete the survey to provide high accuracy in responses (Creswell, 2014).

3.3. Data Analysis

The statistical analysis of the data obtained through the survey were conducted with the help of regression analysis and mediation analysis to test the correlations between the variables of the study. The investigation of transformational leadership direct impacts on performance in operations was involved regression analysis. The approach enables the researcher to establish whether transformational leadership is a relevant predictor of Project performance like productivity, cost-effectiveness and the time required to complete the project (Hair et al., 2011).

Alongside the regression analysis, the mediation analysis was performed in order to determine the role of the quality management practices as a mediator between the transformational leadership and the performance of operations. Mediation analysis is useful in acquiring the way that an independent variable (transformational leadership) affects a dependent variable (Project performance) by way of a third variable (quality management practices). This gave an idea of the presence or absence of the quality management practices in strengthening or weakening the relationship between leadership styles and project outcomes (Hayes, 2013).

The mediation test was conducted on the PROCESS macro of SPSS (Hayes, 2013). This is a general device

of social science research that can be used to understand complicated associations between variables. It enables the researcher to test various mediation models and direct, indirect and total effects in an efficient and easy way. Using regression and mediation analysis, the research was in a position to give a complete picture on the relationship between leadership, quality management, and Project performance in construction projects in both direct and indirect way.

4. Results and Discussion

4.1.1 Respondents Age

The distribution of 232 respondents' ages is displayed in the table. With 75 participants (32.3%), the 26-30 age group is the most numerous, The 36–40 age group comes next, with 67 participants (28.9%), and finally, the 31-35 age group with 65 people (28.0%). The smallest group is 20–25 years, comprising 25 respondents (10.8%). The cumulative percentage indicates that 43.1% of respondents are aged 30 years or below, while 100% of the sample is covered within the 20–40 years age range, showing that most participants are young to middle-aged adults.

4.1.2 Participants Gender

The survey of 232 respondents reveals the distribution of responders by gender as is indicated in the table. The total sample size is 194 (83.6) male respondents and 38 (16.4) female respondents. The percentage of valid is equal to the total percentage. The cumulative percentage indicates that 83.6 percent of the sample is made up of males with the rest of 100 percent being females. This is a clear indication that the sample is dominated by males. The low ratio of the female respondents is also an indication of the lack of female representation in the study. The results generally indicate a high gender of the respondents.

4.1.3 Respondents' Level of Education

The academic affiliations of the 232 responders who took part in the study are shown in the table. As the largest educational category in the sample, 116 respondents (50.0%), or half of the individuals, had a BS certificate. This is trailed by 71 respondents (30.6%) who possess a Master's degree. Additionally, 45 respondents (19.4%) have higher qualifications such as MS, MPhil, or equivalent degrees. The valid percentages are identical to the overall percentages, indicating that there are no missing responses in this category. The cumulative percentage shows that 80.6% of the responders have at least a BA or MA certificate. Overall, the information indicates that the substantially of participants are well-educated, with all respondents having undergraduate or postgraduate qualifications. In light of this, the model consists of academically qualified Persons capable of providing informed responses to the study.

4.1.4 Respondents' Job Designation

The table presents the designation levels of the 232 individuals participating in the study. Most of the people who responded, 116 (50.0%), are serving as Lower-Level Managers, indicating that half of the sample belongs to the operational management tier. This is followed by 71 respondents (30.6%) who hold Middle Level Management positions. Additionally, 45 respondents (19.4%) are working at the Upper-Level Management. The valid percentages are equal to the overall percentages, confirming that there are no missing values in this category. The cumulative percentage shows that 80.6% of respondents fall within lower and middle management levels. Overall, the data suggests that the data set is largely put together of managerial staff, with stronger representation from lower and middle management compared to top-level executives

4.1.5 Respondents' Level of Work Experience

The table shows the job duration of the 232 research participants. The largest group consists of 101 individuals (43.5%) who have one year or more of job experience, indicating that nearly half of the participants have at least basic work exposure. This is followed by 60 respondents (25.9%) who have more

than five years of experience. Additionally, 51 respondents (22.0%) have less than 10 years of experience, while only 20 respondents (8.6%) have more than 10 years of job tenure. The valid percentages are equal to the overall percentages, confirming that there are no missing responses. The cumulative percentage indicates that 65.5% of respondents have at least one year of experience. In conclude, the information suggests that most participants possess moderate work experience, while a smaller proportion represents highly experienced employees.

4.2 Descriptive Statistics

The table displays the descriptive data for the three main study variables—Project performance, quality management practices, and transformational leadership—built on the overall sample (N) of 232 responders. The recorded values for Transformational Leadership vary from a min of 2.40 to a maxi of 4.87. 3.8825 is the average score, and 0.38625 is the standard deviation. Respondents usually believe that their businesses have a high degree of TL, as indicated by the mean value near 4. Responses appear to be strongly clustered around the mean, demonstrating consistency in respondents' judgments, according to the comparatively low std. Dev (0.38625). A mean of 3.8825 and a standard deviation of 0.38625 are also displayed for Quality Management Practices, which range from a minimum value of 2.40 to a highest value of 4.87. The fact that the mean and standard deviation are the same tell that there is little variation in the respondents' views of quality management practices. The lowest and maximum values for Project performance are 2.50 and 5.00, respectively. The mean score is 4.2473, which is higher than the other two variables, indicating a stronger overall perception of Project performance. The standard deviation of 0.40633 shows slightly more variation compared to the other variables, but the dispersion remains relatively low, suggesting general agreement among respondents. Overall, the descriptive statistics indicate that all three variables—Transformational Leadership (Mean = 3.8825, SD = 0.38625), Quality Management Practices (Mean = 3.8825, SD = 0.38625), and Project performance (Mean = 4.2473, SD = 0.40633)—are rated positively by respondents, with Project performance receiving the highest mean score.

4.3 Reliability Analysis

All three research variables were examined using Cronbach's Alpha to determine their dependability, and the results are shown in the table. One of the most popular metrics Cronbach's Alpha to evaluate internal consistency (α). A threshold value of $\alpha \geq 0.70$ is typically regarded as acceptable, $\alpha \geq 0.80$ as good, and $\alpha \geq 0.90$ as great. The 13-item Transformational Leadership scale has an (α) 0.829. This result shows good to exceptional intrinsic coherence since it is above 0.80 and above the suggested threshold of 0.70. Consequently, the TL scale is quite trustworthy. The Estimated alpha for the 15-item Quality Management Practices survey is 0.772. This score demonstrates very good reliability because it is More than the required minimum level of 0.70. Adequate intrinsic coherence is shown by the items used to gauge quality management methods. The value of Cronbach's Alpha for the eight components that make up Project performance is 0.713. Additionally, this number is above the 0.70 cutoff, suggesting strong dependability. According to the reliability chart, it is still within an acceptable range even if it is somewhat less than that of the other two variables.

Reliability Statistics

S.NO	Name	Items	(α) values	Remarks
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1. Transformational Leadership	13	0.829	Excellent
2. Quality Management Practices	15	0.772	V. Good
3. Project performance	08	0.713	Good

4.4 Pearson correlation Analysis

The correlation analysis shows the strength and direction of relationships between Transformational Leadership (TL), Quality Management Practices (QMP), and Project performance (PP). Transformational Leadership (TL) has a moderate positive and significant relationship with Project performance (PP) ($r = 0.325$, $p < 0.01$). This indicates that higher levels of transformational leadership are associated with improved Project performance. Quality Management Practices (QMP) demonstrate a moderate to strong positive and significant relationship with Project performance (PP) ($r = 0.437$, $p < 0.01$). This suggests that effective quality management practices play an important role in enhancing Project performance. Moreover, Transformational Leadership (TL) and Quality Management Practices (QMP) are strongly and positively correlated ($r = 0.706$, $p < 0.01$), implying that organizations with strong transformational leadership are more likely to adopt and implement effective quality management practices. Overall, both independent variables (TL and QMP) have positive and statistically significant relationships with the dependent variable (PP). However, QMP has a stronger influence on Project performance compared to TL, based on the higher correlation coefficient.

Correlations

		TL	QMP	OP
TL	Pearson Correlation	1	.706**	.325**
	Sig. (2-tailed)		.000	.001
	N	232	232	232
QMP	Pearson Correlation	.706**	1	.437**
	Sig. (2-tailed)	.000		.000
	N	232	232	232
OP	Pearson Correlation	.325**	.437**	1
	Sig. (2-tailed)	.001	.000	
	N	232	232	232

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

4.6 Regression analysis

In the model summary table, the outcomes of an analysis of regression with Transformational Leadership (TL) as the predictor are displayed. With an R-value of 0.736, we can see that there is a favorable connection among TL and dependent factor. Transformational leadership explains 54.1% of the variance in the dependent factor, on the basis of the R-squared value of 0.541. Strong explanatory power is demonstrated by the Adjusted R Square value of 0.539, which indicates that the structure continues to explain 53.9% of the variation even after controlling for sample size. With a S.E. of 0.38950, we can see that the average estimation error is not too high. Results indicate that the dependent variable is significantly and meaningfully affected by Transformational Leadership.

Model Summary

Model	R	R Sq	Adj R Sq	Std. Error of the Estimate
4	.736 ^a	.541	.539	.38950

4.6.1 ANOVA Table

So that we can ascertain the overall value of the regression model, the ANOVA table is employed. This model uses Transformational Leadership (TL) to predict Project performance (PP). With 1 degree of freedom, the squared regression is 41.202, while with 230 freedom variables, the remaining squared amount is 34.894. With 231 the sum of all squares, degrees of freedom are 76.096. As the p-value is .000 ($p < 0.05$), the computed F-value of 271.581 is extremely significant. As a result, we may conclude that Transformational Leadership is a strong predictor of Project performance and that the regression model holds water. That is to say, compared to a model devoid of variables, the one with them confirms that TL strongly affects OP.

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
4	Regression	41.202	1	41.202	271.581	.000 ^b
	Residual	34.894	230	.152		
	Total	76.096	231			

4.5.2 Coefficients Table

The regression analysis results provide meaningful insights into the impact of Transformational Leadership (TL) and Quality Management Practices (QMP) on Project performance (PP). The findings conclusively reveal that both independent variables exert a positive and statistically significant effect on OP, thereby supporting the hypothesized relationships in the conceptual framework. Specifically, Transformational Leadership (TL) demonstrates a positive and significant influence on Project performance ($\beta = 0.266$, $t = 1.998$, $p = 0.047$). This finding indicates that improvements in leadership practices such as inspiring and motivating employees, providing intellectual stimulation, and offering individualized consideration—contribute meaningfully to better operational outcomes. Although the effect size is relatively moderate, the statistical significance confirms that TL cannot be overlooked as an important determinant of OP. In practical terms, when leaders adopt transformational behaviors, they foster a culture of commitment, innovation, and collective effort, which ultimately translates into enhanced organizational performance. In contrast, Quality Management Practices (QMP) demonstrate a substantially stronger and highly significant effect on OP ($\beta = 0.554$, $t = 6.655$, $p < 0.001$). This suggests that QMP plays a more dominant and influential role in enhancing Project performance compared to TL. The larger beta coefficient indicates that for every one standard deviation increase in QMP, Project performance increases by 0.554 standard deviations, holding TL constant. This finding underscores the critical importance of systematic quality management approaches including continuous process improvement, employee involvement, customer focus, and data-driven decision making in driving operational excellence. Organizations that rigorously implement QMP are likely to experience more substantial gains in efficiency, product quality, customer satisfaction, and overall operational effectiveness than those relying primarily on leadership improvements alone. Furthermore, the collinearity statistics provide assurance regarding the reliability of the regression model. The tolerance values (0.501) are well within the acceptable limit (typically above 0.10 or 0.20), indicating that approximately 50% of the variance in each predictor is unique and not shared with the other independent variable. Similarly, the Variance Inflation Factor (VIF) values (1.995) fall comfortably below the commonly accepted critical thresholds of 5 or 10, confirming that there is no multicollinearity issue in the model. This means that TL and QMP, while moderately correlated, measure distinct constructs and do not excessively overlap, allowing their individual effects to be estimated with reasonable precision.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients		Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance VIF
1	(Constant)	2.976	.177		16.830	.000	
	TL	.255	.077	.266	1.998	.047	.501 1.995
	QMP	.363	.054	.554	6.655	.000	.501 1.995

a. Dependent Variable: OP

4.6.3 Mediation Analysis

A total of 232 participants participated in the PROCESS Model 4 mediation analysis, which looked at the connection between (X) Transformational Leadership (Y) Project performance and (M) Quality Management Practices. In fact, a substantial favorable association between the factors, as evidenced by the direct impact of transformational leadership on Project performance, which is 0.7115 with a standard error of 0.0525. The statistical worth of the direct impact is verified by the t-value of 13.5549 and the p-value of 0.0000 ($p < 0.05$). Significance is further supported by the direct effect's 95% confidence interval, which falls between 0.6081 and 0.8150 and excludes zero. Through Quality Management Practices, Transformational Leadership has an indirect impact of 0.0591 on Project performance. The indirect effect's bootstrap standard error is 0.0225, indicating a satisfactory level of estimating stability. The significance of mediation is confirmed by the bootstrap confidence range for the indirect impact, which is between 0.0222 to 0.1107 and excludes zero. These findings suggest that the association between transformational leadership and Project performance is somewhat mediated by quality management practices. The direct effect (0.7115) is numerically significantly stronger than the indirect effect (0.0591), indicating that the direct pathway accounts for the majority of the effects. Thus, through Quality Management Practices, Transformational Leadership greatly enhances Project performance, both directly and indirectly. Using 5000 bootstrap samples, the model shows a substantial positive mediation effect overall at a 95% confidence level.

Direct effect of X on Y					
Effect	se	t	p	LLCI	ULCI
.7115	.0525	13.5549	.0000	.6081	.8150
Indirect effect(s) of X on Y:					
	Effect	Boot SE	Boot LLCI	Boot ULCI	
QMP	.0591	.0225	.0222	.1107	

4.7 Discussion

The current research investigated how Transformational Leadership (TL) influences the Organizational Performance (PP) mediated by Quality Management Practices (QMP). The reliability analysis proves that all constructs are internally consistent and can be further analyzed. Transformational Leadership showed remarkable reliability ($\alpha = 0.829$) and subsequently Quality Management Practices ($\alpha = 0.772$) and Organizational Performance ($\alpha = 0.713$) which are more than the recommended acceptable value of 0.70 as suggested by Hair et al. (2014). This makes sure that the measurement scales are constant and can be used to test relationships between variables.

The results of the correlation indicate that there are strong positive associations between all the variables. Transformational Leadership has a positive correlation to Organizational Performance ($r = 0.325$), and Quality Management Practices correlate better with Organizational Performance ($r = 0.437$). Besides, TL

has a strong relationship with QMP ($r = 0.706$), meaning that transformational leaders are important in facilitating quality management practices in organizations. These results can be connected to Transformational Leadership Theory (Alkhawaldeh et al. 2025), which stresses that leaders affect the organizational systems and behavior of employees, and Total Quality Management theory (Henagan et al., 2009), which underlines continuous improvement as a way to the improved performance. The results of regression and ANOVA also confirm that Transformational Leadership is a strong predictor of Organizational Performance, with the regression yielding a strong explanatory power or $R^2 = 0.541$, meaning that it explains 54.1 % of its variation.

The strong F-statistic ($F = 271.581$, $p < 0.001$) supports the soundness of the model. Nevertheless, the analysis of the coefficients indicates that although TL influences the OP positively and significantly ($\beta = 0.266$), QMP is even more dominant ($\beta = 0.554$) and should be considered a more effective driver of the performance results. The mediation analysis gives more in-depth information about the mechanism of influence. The findings suggest that Transformational Leadership has a significant influence on Organizational Performance, both in a direct and an indirect way via Quality Management Practices. The indirect effect (0.0591) is statistically significant, thus proving the partial mediation, but the direct effect (0.7115) is stronger, indicating that the leadership affects the performance not only by direct influence of behavior but also by promoting quality systems. This observation is in line with the Resource-Based View (Barney, 1991), which asserts the relevance of intangible resources like those found in leadership and quality systems in creating competitive advantage. The positive relationship between TL and QMP is significant and positive, which suggests that transformational leaders build and develop quality-focused systems in the organization, making leadership behaviour an inherent organizational strength.

RBV argues that these quality practices that are driven by leadership would be path-dependent, socially complex, and hard to imitate by the competitors hence act as a source of sustained performance advantage. The results of the mediation also affirm RBV in the sense that, the indirect impact of TL on OP via QMP is high, supporting the fact that QMP is a strategic resource which conveys and intensifies the effects of leadership on performance. Additionally, the fact that QMP has a stronger effect on OP ($\beta = 0.554$) than the direct effect of TL ($\beta = 0.266$) indicates that the institutionalization of quality management practices as organizational routines is more potent and significant in a lasting performance driver than leadership. This observation is in line with the argument by Barney (1991) that organizational processes and routines when institutionalized into firm-specific systems may create sustained competitive advantage. In this way, RBV can be used as a powerful theoretical perspective to explain the performance outcomes of organizations that merge transformational leadership with strong quality management practices. All in all, the results indicate that Transformational Leadership is a vital influence on Organizational Performance and its efficacy is enhanced once it cultivates good Quality Management Practices in the organization.

5. Conclusion and Recommendations

5.1 Conclusion

The research study has examined how transformational leadership can influence Project performance of construction projects in Peshawar, Pakistan, and the study has investigated how quality management practices (QMPs) can mediate between the two. The results of the empirical analysis prove that transformational leadership contributes to the operation performance of construction projects indirectly and directly to a great extent. Transformational leadership positively impacts the operational results by driving the employees to be motivated, developing trust, and allowing innovation, which are key to reaching a greater level of performance in construction projects. It was also established by the research that the QMPs, including Total Quality Management (TQM), Six Sigma, and Lean construction are mediators of great importance to the relationship between transformational leadership and Project performance. In particular, the findings imply that the combination of transformational leadership and effective QMPs results in the

increase in the Project performance in terms of the improved processes, decreased wastage, and increased efficiency in resource use.

The results obtained in the study emphasize the positive relationship between transformational leadership and quality management practices and Project performance. Transformational leadership and quality management practices were found to be good predictors of the operation performance of construction projects. Through embracing the transformational practices of leadership, the construction project managers will be able to develop a culture or environment where quality is constantly enhanced, communication is made efficient and team members will be encouraged to give their best at all times. Such a combination of leadership and management practice solves the major problems of the construction industry in Peshawar like ineffective quality, delays, and wastage of resources. This study therefore adds to both literature and practice in the study area of construction project management by highlighting the reverse of the value of leadership and quality practices in improving the operation performance.

5.2 Recommendations

The recommendations of this study should not be limited to general statements like "conduct leadership training" or "practice quality improvement". These statements are too vague and unmanageable. Thus this study recommends a practical, time-bound and budget-linked improvement plan for the construction firms in Peshawar.

5.2.1 Budget-Linked Transformational Leadership Development

Companies should provide a dedicated budget for leadership development of project managers, site engineers, supervisors and quality control personnel. Rather than seeing leadership development as an ad hoc affair, approximately 2% to 3% of the annual project management budget should be allocated for leadership development. This should fund training workshops, coaching, team communication training, conflict-management training and leadership assessments.

The training should be conducted over a six-month period. Months one and two should be devoted to a leadership skills audit, where firms assess leadership skills such as communication, motivation, decision-making and co-ordination skills. Between months three and five, project managers and site supervisors should engage in formal training programs on transformational leadership skills (inspirational motivation, individual consideration, intellectual stimulation and idealised influence). By month six, firms should assess the improvement in leadership in terms of employee feedback, site productivity, absenteeism and project delay.

This ensures leadership development is tangible. The effectiveness of this recommendation should be evaluated by indicators like a drop in site disputes, increase in labour productivity, quicker problem-solving and better coordination within project teams.

5.2.2 BIM for Quality and Coordination

Peshawar construction companies should use Building Information Modelling (BIM) as a useful technique to enhance quality control and efficiency. BIM must be used first on medium and large projects which have design issues, wastage, rework and coordination-related problems.

The implementation time should be 12 months. In the first three months, companies should provide training to a few project team members in basic BIM tools like Autodesk Revit, Navisworks or other affordable tools. Between months four and eight, BIM should be applied to detect design conflicts, coordinate design, estimate quantities and integrate scheduling. From month nine to 12, firms should assess the effectiveness of BIM by comparing the cost of rework, wastage, design conflicts and delays before and after adopting BIM. This recommendation addresses the issue of poor Project performance because construction delays and cost overruns are often due to poor coordination, inaccurate drawings and late detection of design conflicts. BIM

offers a way to identify such problems before they are implemented on-site.

5.2.3 Use of Agile Project Management for Short Cycle Site Planning

Construction companies should implement Agile project management techniques, particularly short-term planning, daily coordination meetings and sprints for task tracking, to enhance site planning. Typical construction planning is deficient because project teams detect issues too late. Agile principles can address this issue by introducing shorter feedback cycles.

All construction projects should adopt a sprint planning process. Each week, the project manager, site engineer, procurement officer, quality supervisor and subcontractors should plan the work to be completed for the week ahead. This should be followed by daily 10-15 minute stand-up meetings to discuss the tasks, blockers and corrective actions.

The process should be adopted within three months and its effectiveness tracked using weekly progress reports. Ideally, at least 85% of the planned weekly work should be completed on time at the end of the first three months. This will make project monitoring more pro-active and is expected to eliminate delays due to ineffective communication and decision-making process.

5.2.4 Adoption of Lean Construction and Last Planner System

We should not only inspect the quality of the final product. Lean Construction and the Last Planner System should be embraced by construction firms to minimise waste, waiting, redundant material movement, rework and ineffective planning of quality workflows. These methods are better than suggesting "better quality practices".

A six-month trial of the Last Planner System should be undertaken. During the first month, project teams should pinpoint recurrent sources of delay, such as material delivery, labour availability, design changes and subcontractor coordination. From month two to month four, the project team should develop weekly work plans and report work completed as a percentage of planned work. During months five to six, firms should evaluate performance and planning strategies.

A performance indicator should be Percent Plan Complete (PPC). The target should be to improve PPC to 80% in six months. This would indicate if project teams are planning and doing the work they plan to do. The Last Planner System would also help project managers pinpoint the actual reasons for delays rather than wrongly blaming workers or subcontractors.

5.2.5 ISO 9001-Based Quality Management System

Construction companies should document their quality system in an ISO 9001-based Quality Management System. This should contain quality procedures, inspection checklists, non-conformance reports, corrective actions, supplier evaluations and internal quality audits.

The system should be phased out over nine months. In the first three months, companies should create standard operating procedures related to procurement, material inspection, site work, safety inspections and client approvals. Between months four and six, these procedures should be implemented by quality supervisors on projects. In the seventh to ninth months, internal audits should be performed to detect and implement corrective measures.

The quality system should be assessed through metrics such as non-conformance reports, rework, customer complaints, inspection failures and cost of poor quality. This will shift quality management from a "look over my shoulder" to a documented system.

5.2.7 Policy Support

Peshawar's government and construction regulatory authorities could provide incentives for leadership and quality improvement. However, these should be performance-based. For instance, companies using BIM,

implementing ISO 9001 quality management systems, or using digital monitoring platforms should be given priority in public-sector bidding.

The government should offer a two-year capacity-building scheme to local firms. This should include subsidised BIM training and support for project management certification, quality management workshops and digital monitoring awareness sessions. The government should support firms to develop the skills required for better performance rather than just imposing penalties.

Government construction contracts should also require contractors to provide a project quality plan, risk register, digital schedule and monthly performance dashboard. This will encourage firms to plan and manage quality and performance rather than use ad hoc site management.

5.3 Implications

These recommendations have serious consequences both to the construction industry and the economy in general. In the case of the construction industry, this implies that a greater number of successful projects, higher levels of stakeholder satisfaction and a boosted reputation of companies will be achieved through the introduction of transformational leadership and quality management practices. The direct intervention by the government in encouraging such activities will help in the growth of the economy by eliminating inefficiencies, reducing the cost and through superior competitiveness of the industry. This can make Peshawar a model to other parts of Pakistan and even further by practicing efficient and sustainable construction efforts through leadership development and quality management.

5.4 Limitations

This research has several limitations. The study targeted a particular area-Peshawar- which implies that the results cannot be completely extrapolated to those areas where the socio-economic status is not the same. Also, the cross-sectional nature of the study does not allow long-term forecasts regarding the effects of transformational leadership and quality management practices on the performance of operations. These limitations could be resolved by increasing the geographic scope of the research and using longitudinal research techniques in future studies.

5.5 Future Directions

Further studies might be interested in examining the particular effect of individual quality management practices (e.g., Six Sigma, Lean construction) on construction project performance with regard to operations. There would also be value in examining how external conditions including economic conditions, political instability, and legal conditions contributed towards formation of relationship between transformational leadership and project performance. Moreover, the comparative analysis of various regions or countries might provide some information about the impact of contextual factors on the effectiveness of the transformational leadership and quality management practices on the construction projects.

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