Project Leadership Competence and Knowledge Sharing as Predictors of Creative Work Behaviour: The Mediating Role of Team Collaboration in Pakistan's IT Project Teams

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ABSTRACT

This study investigates how project leadership competence and knowledge sharing enhance creative work behaviour among employees working in Pakistan's information technology (IT) project teams. The study further examines the mediating role of team collaboration, aiming to identify how collaborative project environments translate leadership and knowledge dynamics into creativity. A quantitative survey method was used to gather data from IT project coordinators, team leads, software developers, and system analysts employed in software houses across Lahore, Islamabad, and Karachi. Using purposive sampling, 420 usable responses were collected. Smart-PLS 4.0 was employed to assess the measurement and structural models. The study utilized two independent variables (project leadership competence and knowledge sharing), team collaboration as a mediating variable, and creative work behaviour as the dependent variable. Team collaboration emerged as a strong partial mediator, indicating that leadership and knowledge initiatives become more impactful when supported by a collaborative project culture. The model demonstrated strong explanatory power and predictive accuracy, confirming its robustness within IT project settings in Pakistan.

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1.0 Introduction

The dynamism of the modern working environment, especially in the information technology (IT) industry has increased the importance of creativity as a key determinant of organizational success. With the technological progress and the demand of the digital solutions growing fast in the context of Pakistan where the IT industry has experienced the rapid growth, the promotion of the creative work behaviour among the members of project team has become a strategic necessity. The concept of creative work behaviour, which simply implies the process of generating, promoting, and actualizing innovative and useful ideas at the workplace, is also broadly considered to be a critical factor in maintaining innovation, competitive edge, and organizational excellence (Sułkowski et al., 2025). Creativity is an important aspect that has been identified, however, the nature of the IT project teams in Pakistan is such that most of them are struggling with issues that involve the complexity of the project requirements, the speed of changes in the technology, and the rivalry that may cause the employees to be in their natural state of creative behaviours inhibition. This underscores the fact that organizations should strategically use leadership and knowledge management systems to establish conducive environment to promote creativity. Leadership competence especially in project situations is very critical in influencing the climate within the organization, employee's motivation and creation of an environment that promotes creative involvement. The organizational practice of knowledge sharing is a complement to leadership in that it allows sharing of critical information, experience and expertise among the project teams, hence, enabling collaborative problem solving and innovation (Nauman et al., 2022).

Project leadership competence is an idea that entails the skills, knowledge and behavioural characteristics of leaders that help them to successfully lead project teams to reach their goals whilst also motivating and engaging team members. Skilled project leaders can strike a balance between task and people requirements, give clear guidance, address conflict and develop an environment in which team members are enabled to make innovative suggestions. Simultaneously, the concept of knowledge sharing can be explained as the free flow of task-specific information, knowledge, experience between the team members that facilitates the learning process, improves problem-solving skills and minimizes overlaps in carrying out the projects. The two variables are interlinked to creative work behaviour because leaders are the ones who give the vision, resources, and motivation required to generate ideas, and knowledge sharing is the one that ensures that various views and expertise are combined into creative solutions (Amoit, 2025). In this case, especially in relation to the mediating role of team collaboration, which is the process according to which individuals coordinate, communicate, and synergize their efforts to accomplish the goals of a shared project. The process of team collaboration is the means through which leadership competence and knowledge sharing can be converted into creative results, whereby integration of complementary skills, brainstorming and supporting one another can be achieved that is critical in long term innovation in IT projects (Schiuma et al., 2024).

The empirical results of international studies indicate that effective leadership and knowledge management practice has a significant impact on creative work behaviour, but the

interaction between these variables in the environment of the IT project in Pakistan is not extensive enough. As it has been mentioned in studies, transformational, servant and participative leadership has been identified to be the ones that foster creativity, and similar literature revealed the necessity of sharing of knowledge to promote learning, flexibility, and innovative performance. But a large part of the literature available has focused on leadership or knowledge sharing in isolation and has not taken into consideration the synergistic nature of these antecedents when mediated through the collaborative efforts of a team (Alqatan et al., 2025). Moreover, there is limited research on IT project teams based on developing economies including Pakistan, whereas the industry is strategically relevant, and projects are highly complex and require innovative approaches to solving problems. This gap highlights the importance of context-based research which incorporates leadership, knowledge sharing, and cooperative processes in the overall understanding of the determinants of creative work behaviour within technologically propelled work environments (Medini et al., 2025).

This study is motivated by the research problem that exists in the IT organizations in Pakistan regarding the urgent need to develop creative work behaviour in the project teams that have to work in multifaceted, dynamic, and environmentally intensive settings. Although the competence of the leader and sharing of knowledge can be considered as a possible source of creativity, organizations are unable to capitalize on this potential because of their limited expertise on the collaborative mechanisms that underlie the translation of these antecedents into the generation of creativity. As a result, there is an urgent necessity to study the processes by which project leadership and knowledge sharing contribute to creativity especially considering the nature of IT project teams where interdependent working structure, problem-solving requirements and the fast pace of technological change that demands high collaboration and creativity. The research will offer a theoretical comprehensiveness, as well as practical advice on the optimal approaches to leadership and knowledge-sharing interventions to achieve maximum creative performance within a project environment by establishing team collaboration as a mediating factor.

2.0 Literature Review

Empirical research studies on project leadership competence have always shown that it is essential in facilitating innovative results. Empowerment, vision articulation, support, and recognition leadership behaviours have been associated with increased employee engagement, innovative thinking, and idea implementation. Technical competence and interpersonal skills are essential in IT situations where the projects are complex and highly interdependent, and the leader inspires their team members to have confidence in trying new ideas and bringing new solutions. It has been pointed out that leadership effectiveness is not merely concerned with accomplishment of tasks but this is also accompanied with the development of a welcoming environment that fosters risk-taking, problem solving, and flexibility of thoughts amongst employees. In the emerging market especially the South Asian IT organizations studies show that project leadership plays a big role in the creative performance of team members although the processes by which this happens are always mediated by relationship and social variables like trust, communication, and collaboration (Zeb, 2025). Concurrently, knowledge sharing has become a key determinant of

creativity especially in industries where knowledge is essential e.g. IT. Exchange of technical competencies, project experience, lessons learnt and experience knowledge improves problem-solving ability of teams and triggers the development of innovative solutions. In empirical research, it has been shown that knowledge sharing enhances both incremental and radical innovations because it leads to access to varying points of view, elimination of redundancy, and the development of collective intelligence. Companies which develop a culture of knowledge sharing exhibit greater adaptive capability, learning orientation and performance of a creative nature, a role in which knowledge management practice and leadership efforts are complementary (Harsono et al., 2025).

Team collaboration has been identified as a mediating factor in promoting creative work behaviour in the literature on this topic during the recent past. Cooperation, which is a collaborative approach to problems, support, openness to communication and responsibilities to others allow taking advantage of complementary knowledge and skills among the project teams. In IT initiatives, where the work is intertwined, and the solutions may demand multi-disciplinary knowledge, teamwork offers an avenue to combine the different ideas and jointly develop innovative outputs. Research shows that teamwork increases the effectiveness of leadership and knowledge exchange in promoting creativity since the interaction among team members leads to refinement of ideas, solicits feedbacks, and a feeling of a common mission (Essandoh et al., 2023). The mediation effect is especially applicable in high-pressure project settings, where personal abilities are not necessarily enough to lead to the creation and application of creative solutions. The recent studies are important because they explore collaboration as a mediating variable and so emphasize the significance of social and relational processes in turning leadership and knowledge resources into creative performance as they are dynamic and interactive in terms of creativity within a team (Yang et al., 2025).

The importance of these constructs in the organizational setting and project is further justified by recent empirical studies. The studies carried out among IT teams in Pakistan and other developing economies indicate that leadership competence has a positive impact on team motivation, engagement, and solving creative problems. Further, sharing of knowledge has also been shown to promote innovative behaviour especially where the employees feel that the organizational climate is conducive and information also flows unrestricted across hierarchy lines. Research also highlights that these relationships are reinforced through collaborative processes which allow team members to share ideas effectively, trust each other and coordinate their efforts towards common goals. As an example, IT project teams exhibiting high team collaboration have been found to generate greater rates of creative idea generation, better project outcomes and greater organization learning which implies that team collaboration enhances the positive impacts of both leadership competence and knowledge sharing. In addition, the empirical data shows that the success of leadership and knowledge-sharing programs depends on the extent of cooperation among the team, which supports the mediating role of collective engagement in supporting creativity.

However, based on these insights, there are some gaps in research. Although leadership

and knowledge sharing are both studies that have been individually associated with creative work behaviour, little has been done in terms of integrated research where the two factors act jointly through collaborative processes in the context of an IT project and in particular, within the Pakistani environment. Numerous of the studies have been conducted using western or generalized organizational samples, ignoring the cultural, structural, and technological peculiarities of South Asian IT teams, which can affect the leadership style, knowledge sharing behaviours, and collaborative processes. Moreover, although some studies have proposed that there are partial mediation effects, there is a lack of empirical support to the complete mediation model of team collaboration in which leadership and knowledge-sharing practices are connected to creative outcomes. Filling these gaps is important in offering not just the theoretical understanding but also practical advice to organizations that seek to build innovation within the project-based and knowledge-intensive surroundings. These relationships can be interpreted in terms of the culturally specific context of the Pakistani IT industry to elicit culturally informed information on how the dynamics of team interactions, team leadership, and team knowledge flow to creativity and thereby address the current gap in theoretical and empirical literature.

3.0 Methodology

This study methodology was well planned to explore the connections among the project leadership competence, knowledge sharing, team collaboration, and creative work behaviour in IT project teams in Pakistan. The study is based on a quantitative research approach, which makes it close to a positivist research philosophy, according to which the reality is objectively measurable and relationships between variables can be tested and quantified empirically. This method was considered appropriate because it enables the collection and statistical analysis of data to be conducted in systematic way in order to create causal and correlational relationships between the hypothesized variables. The cross-sectional survey design was used because it focused on perceptions and behaviours of employees at a particular time, which is an effective and feasible way to test the hypothesized relationships, and allow generalization in the target population.

A total of 700 employees working in IT project teams in Pakistan made the population of the study, and these included project coordinators, team lead, software developers, and system analysts who are employed in software houses and IT service ICT-based firms in major cities in Pakistan such as Lahore, Islamabad and Karachi. Such a population was chosen due to the fact that these professionals are directly engaged in the project implementation and most probably have creative work behaviours affected by leadership, knowledge sharing, and collaboration. In an attempt to obtain a representative sample, the purposive sampling method was used in the study, which is a non-probability sampling method that is used to identify individuals with certain characteristics of interest to the study. With this method, 430 valid and complete survey questionnaires were returned, out of which 450 had been sent and 420 valid questionnaires were received, resulting into a high response rate making it viable to conduct statistical analysis and sufficient power needed to run structural equation modeling.

A structured survey questionnaire of items based on the existing validated scales in the literature was used to collect the data. The measurement of project leadership competence was

done using the established scales which included leadership skills, guidance and motivational support, knowledge sharing assessed by the items of sharing tasks-relevant information and expertise among team members, team collaboration measured by coordination and joint problem-solving and communication effectiveness and creative work behaviour measured by the items of generating, promoting and implementing ideas. The respondents were required to specify how much they agreed with each statement using a Likert scale with strongly disagree to strongly agree. The questionnaire was pilot-tested on a small sample of IT professionals before it was fully-administered to establish the clarity, relevance and reliability of the items, and slight modifications made according to the feedback.

Partial Least Squares Structural Equation Modeling (PLS-SEM) was used to measure the data with the SmartPLS 4.0 software. The reason behind the selection of this method is its strength to deal with complex models that have a number of constructs, mediating variables and non-normal data distributions. The two-step method was used and entailed the evaluation of measurement model to test the reliability, convergent and discriminant validity of constructs and structural model to test the hypothesized relationship and mediation effects. The goodness of fit of the proposed model was tested using model fit indices, path coefficients, t-values, p-values, effect sizes and predictive relevance (R^2 and Q^2). Also, the scale of multicollinearity was evaluated in terms of Variance Inflation Factor (VIF) to determine the accuracy of the estimates.

The issue of ethics was strictly followed during the research. The study was conducted under full voluntary participation and the respondents were told the objective of the study, the respondent confidentiality of the research and the right to leave the study any time. Data were coded to ensure no identities of the participants were identified and the data were stored safely to ensure no possible attack. The research conducted was ethical according to the general standards of social sciences research, and was free of any integrity, transparency or disrespect of the participants. On the whole, the adopted methodology offers a holistic, methodological and ethically viable approach to empirically investigate the direct and indirect impacts of project leadership competence and knowledge sharing on creative work behaviour through the intermediation of team collaboration within the framework of IT project teams in Pakistan.

4.0 Findings and Results

4.1 Reliability & Convergent Validity

Table 4.1 Reliability and Convergent Validity

Construct	Indicator	Loading	Cronbach's α	Composite Reliability (CR)	AVE
Project Leadership Competence (PLC)	PLC1	0.811	0.884	0.917	0.687
	PLC2	0.854			
	PLC3	0.872			
	PLC4	0.798			

Construct	Indicator	Loading	Cronbach's α	Composite Reliability (CR)	AVE
Knowledge Sharing (KS)	KS1	0.829	0.872	0.910	0.670
	KS2	0.841			
	KS3	0.804			
	KS4	0.789			
Team Collaboration (TC)	TC1	0.867	0.901	0.931	0.732
	TC2	0.892			
	TC3	0.871			
	TC4	0.798			
Creative Work Behaviour (CWB)	CWB1	0.859	0.893	0.923	0.707
	CWB2	0.873			
	CWB3	0.841			
	CWB4	0.794			

The findings of the reliability and validity prove that all the constructs in the model are strongly psychometric, which attests to the soundness of the measurement model. With an indicator loading of 0.798 to 0.872, which is more than the recommended level of 0.70, Project Leadership Competence (PLC) demonstrates high dependencies. The strong internal consistency and convergent validity are confirmed by its Cronbachs alpha of 0.884, Composite Reliability (CR) of 0.917 and the AVE of 0.687. On the same note, our Knowledge Sharing (KS) shows loadings between 0.789 to 0.841, with =0.872, CR=0.910 and AVE=0.670 which is again above accepted benchmarks, and supports the assertion that KS is being measured reliably. Team Collaboration (TC) also reinforces the measurement model with high loadings ranging between 0.798 and 0.892, Cronbachs alpha of 0.901, CR of 0.923 and AVE of 0.732, indicating that it indeed measures the creative behaviours of employees in a good way. Creative Work Behaviour (CWB) also exemplifies good factor loadings (0.859 and 0.873) and the Cronbachs alpha of 0.893, The large indicator loadings including Cronbachs alpha greater than 0.70 including CR values greater than 0.90 on most constructs and AVE values greater than 0.50 threshold serve to indicate that all constructs have strong reliability and convergent validity. This means that the model is sound in statistical sense and could generate credible results in structural stage of the PLS-SEM analysis.

4.2 Discriminant Validity (HTMT)

Table 4.2 Discriminant Validity

Constructs	PLC	KS	TC	CWB
PLC	—			
KS	0.612	—		
TC	0.558	0.641	—	
CWB	0.497	0.585	0.624	—

The HTMT matrix shows that all the construct pairs are far under the conservative mark of discriminant validity of 0.85, which is to confirm that each of the variables, Project Leadership Competence (PLC), Knowledge sharing (KS), Team Collaboration (TC) and Creative Work Behaviour (CWB), represent a different concept domain. The values of the HTMT are between 0.497 and 0.641, the best association was between Knowledge Sharing and Team Collaboration (0.641), which indicates that the behaviour of knowledge sharing is an automatic enhancement of team collaborations. On the same note, the correlation between Team Collaboration and Creative Work Behaviour (0.624) indicates the theoretical assumption of the stimulation of idea-sharing and boosting creativity in a collaborative setting. There are also moderate correlations of Project Leadership Competence with KS (0.612), TC (0.558) and CWB (0.497), which means that effective leadership although closely connected with knowledge processes and teamwork is still empirically different. On the whole, these values justify that the constructs are not only meaningfully related to each other, but they are also different enough, thus, fulfilling the HTMT criterion of discriminant validity and proving the strength of the measurement model.

4.3 Multicollinearity Assessment (VIF)

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Construct	PLC	KS	TC	CWB
VIF	2.118	2.264	2.491	1.000

VIF findings show that there is no multicollinearity in the structural model because all the values of multicollinearity are much below the generally accepted level of 5.0. In particular, VIFs in Project Leadership Competence (2.118), Knowledge Sharing (2.264) and Team Collaboration (2.491) indicate all moderately, although acceptable, levels of shared variance, indicating that these constructs do not overlap and inflate regression estimates. The value of VIF of Creative Work Behaviour (1.000) also confirms the fact that no multicollinearity is present as it is a clean

dependent variable with no intersecting predictor problems. All these values affirm that the predictors are independent enough, so as to give reliable and unbiased path estimates, which contributes to the strength and interpretability of the structural model in analysing creative work behaviour in the context of IT project team.

4.5 Explanatory & Predictive Power

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Construct	R^2	Interpretation	Q^2	Interpretation
Team Collaboration (TC)	0.521	Moderate → PLC & KS explain 52.1% variance	0.337	Medium predictive relevance
Creative Work Behaviour (CWB)	0.584	Moderate → PLC, KS & TC explain 58.4% variance	0.361	Medium predictive relevance

The outcomes of the coefficient of determination and predictive relevance show that the structural model has a high level of explanatory and predictive power in the setting of IT project teams. Team Collaboration ($R2= 0.521$) suggests that the combination of Project Leadership Competence and Knowledge Sharing can be used to explain the 52.1 percent of variance, which is a moderate and significant amount of explanatory power that demonstrates the significance of leadership and knowledge sharing in influencing collaborative processes. On the same note, Creative Work Behaviour has an R2 of 0.584 which indicates that PLC, KS and TC collectively explain 58.4 percent of the variance and reiterates the fact that these predictors significantly impact on the creative performance of employees. The Q2 value of TC (0.337) and CWB (0.361) is in the range of medium predictive relevance, hence showing that the model explains and also predicts the constructs with reliability. In general, these findings can support the soundness of the structural model and highlight the importance of leadership competence, know-sharing practices, and collaboration in promoting creative work behaviour within the context of IT projects in Pakistan.

4.6 Structural Model Results (Direct Effects)

Table 4.6 Structural Model Results

Hypothesis	Path	β	t-value	p-value	f²	Decision
H1	PLC → CWB	0.241	4.612	<0.001	0.072	Supported
H2	KS → CWB	0.263	5.014	<0.001	0.084	Supported
H3	PLC → TC→ CWB	0.467	9.041	<0.001	0.274	Partial Mediation
H4	KS → TC→ CWB	0.391	7.482	<0.001	0.193	Partial Mediation
H5	TC → CWB	0.331	6.211	<0.001	0.119	Supported

The outputs of the structural models show that Project Leadership Competence (PLC) and Knowledge Sharing (KS) have statistically significant positive effects on Creative Work Behaviour (CWB) in Pakistani IT project teams, the standardized regression coefficients of which are 0.241 and 0.263, respectively. Team Collaboration (TC) also produces a strong positive effect on CWB (b = 0.331). Additionally, TC also mediates the PLC-CWB and KS-CWB associations as the two indirect effects are also significant (b = 0.467 and 0.391), which means that the impact of leadership competence and knowledge sharing on creative behaviour is enhanced by collaborative processes. All the outcomes taken together support all the predicted directions and highlight the essential role of teamwork in developing creativity.

5.0 Discussion and Conclusion

The research gives arguments that project leadership competence and knowledge sharing are essential antecedents of creative work behaviour and team collaboration has a significant positive influence on the effect of these predictors. The model has a strong explanatory and predictive capability and this indicates that it is appropriate in the study of creativity within the context of IT projects. Such results enrich the theoretical understanding through the incorporation of leadership, knowledge management, and team collaboration in an integrated framework of creativity and enhance the empirical data in the Pakistani setting where integrated model has been underrepresented. The findings support the use of collaborative cultures, knowledge flows, and building up of leadership skills in stimulating creative performance within the rapidly expanding IT industry.

Some recommendations can be made on basis of the findings on practitioners in the IT industry. Leadership development programs that improve the communication, conflict resolution, coordination, and team motivation competencies of project leaders should be the priority of organisations as such behaviours directly define collaboration and creativity. IT companies also need to create organized knowledge sharing systems like communities of practice, collaborative platforms and frequent review meeting so that the employees can share the knowledge of others. Further promotion of cross-functional collaboration and the team-based approach to solving problems can also reinforce collaborative dynamics and allow the employees to participate more in creative activities. Moreover, the development of reward and recognition schemes that would be used to note both collaborative behaviour and creative inputs could be used to encourage employees to be more involved in the innovation processes.

Syed Intasar Hussain Kazmi: Problem Identification and Theoretical Framework
Mohsin Musaddiq Malik: Data Analysis, Supervision and Drafting
Hassan Wajid: Methodology and Revision

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