

# Enhancing Project Performance through Effective Team Communication: A Comprehensive Study Integrating Project Management Quotient, Trust, and Management Information Systems

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## ABSTRACT

The aim of this study was to explore the relationship between project manager competence and project performance with the mediating role of team communication, employee trust, employee capability and team atmosphere. To achieve its objectives, this study used a quantitative research approach. Data was collected from 175 employees working on various projects in China. A structured questionnaire was used to collect the data from the respondents. All items were measured on a five-point Likert scale adapted from previous studies. Collected data was analyzed by using SPSS. The findings of the study showed that the performance of a project is significantly affected by the competencies of project managers. Moreover, the findings also showed that this relationship is significantly and positively mediated by team communication, employee trust, employee capability and team atmosphere. The findings show that the effectiveness of project manager competencies in enhancing project performance is influenced by these mediating factors which contribute to the success of the project. This research contributes to the theoretical understanding of project management by highlighting the multifaceted nature of project performance. It underscores the importance of holistic project management practices, where emphasis on both project manager competence and team dynamics is essential. Practically, the study offers insights for organizations and project managers, emphasizing the need for comprehensive skill development and fostering positive team environments. This study's originality lies in its comprehensive exploration of the mediating roles within the context of project manager competence and its implications in a globalized business environment.

**Keywords:** Employee Capability, Employee Trust, Manager Competence, Project Performance, Team Atmosphere, Team Communication.

## INTRODUCTION

Project management has always blossomed into a central part of the success or failure of an organization. But as business becomes increasingly complex and fast-changing, the ability to manage projects is an important one. In this respect, the competence of project managers is important (Ram, 2023). A project manager with both technical skills and the ability to lead must also have emotional intelligence. It is precisely this who will guide projects toward their goal and make them meet in terms of time, cost, or quality when they arrive there. Although project manager competence is clearly recognized as an important factor, still there is a lack of clarity about how this capability translates into the achievement of projects (Strimovskaya & Barykin, 2023). A great many studies

have investigated specific facets of project management, but the particular ways in which project manager capabilities influence project results deserve further research (Oh & Choi, 2020). To fill this gap, the current study goes beyond examining the direct relationship between project manager competence and project performance to explore whether there are some key factors within the team dynamic which play mediating roles: employee trust, team communication, employee capability and team atmosphere.

Trust has been recognized as a key variable in organizations, especially in the relationship between a manager and his or her subordinates (Soderberg & Romney, 2022). Trust within a project team can greatly affect how members interact, converse and stay the course to achieve their targets. Yet the role of trust as a mediator between project manager competence and project performance has been much neglected in project management literature. This study attempts to resolve this problem by investigating how employee trust can help fill the gap between project manager expertise and overall project performance. Another important aspect of effective project management is team communication. Proper communication among team members is of great importance in making sure project goals are met. The importance of communication in project management is indeed well-established (Perteet-Jackson, Jansma, Marquart, & Wibbens, 2023), but we still need further research to understand the nature of its interaction with competence and performance. This study considers how communication within the project team affects whether or not project manager competence leads to successful project outcomes.

Second, the staff working on a project is one of its most important factors. All employee capabilities (i.e., skills, knowledge and competencies) are significant in the project's ability to meet its objectives (Yuan, Luo, Liu, & Yannopoulou, 2022). But just how much this competence on the part of the project manager influences these capabilities, and consequently affects project performance is a question that deserves further study. In this study, trying to bridge the abyss lies in employee capability as a medium between project manager competence and project performance. Another important aspect is the atmosphere within a project team. This includes such factors as cooperation and morale, as well as cultural aspects. In essence, all of the important parts that are needed for successful project completion require a positive team attitude (Zhou, Poh, Chan, & Shorey, 2022). However there are no comprehensive studies in the literature on how the team atmosphere moderates the relationship between project manager competence and the performance of a particular project. In this context, this study examines the role of team atmosphere as a mediator.

Finally, this study is situated in the context of the growing complexity and internationalization of projects. As organizations expand their operations across borders, project management becomes even more complex and demanding (Nisula, Blomqvist, Bergman, & Yrjölä, 2022). The complexity involved gives another aspect of validity to the study. In today's globalized business environment, there must be mediation factors between projects and project performance. The results of this study will be valuable to organizations and project managers working in a variety of environments, expanding knowledge about the best practices of project management at an international level.

## LITERATURE REVIEW

While many organizations have employed project management to achieve their strategic goals, very few have truly mastered the discipline. Project Managers, who are the linchpin of project performance, play a vital role in managing projects. The literature is full of evidence to show how important competent project managers are in getting projects completed on time, within scope and within budget. However how project managers' competence affects project outcomes is ambiguous and multifaceted. This literature review explains the complex relationship between project manager competencies and project success by investigating the mediating role of employee trust, team communication, team atmosphere, and employee capability.

### **Project Manager's Competencies and Project Performance**

A project manager is widely recognized as a key person who plays an important role in guiding a project towards its successful completion. According to Wang (2019), competency assets refer to the skills, knowledge, talents and personal attributes needed to successfully fulfill a position. The Project Management Competency Development (PMCD) framework defines the competencies of a project manager as the consistent application of knowledge, skills and personal behavior to successfully deliver projects that meet the needs of diverse stakeholders (Garay, Haeger, Kühnlein, Sulmann, & Suhr, 2023). Skills play an essential function in facilitating effective communication with crew members and resolving conflicts. Furthermore, the identity of the learner's expert exercise gap can be determined via numerous knowledge talents. Furthermore, experience competencies refer to the mission supervisor's capability to utilize expertise from various sources, including non-public enjoy

and direct observations, a good way to increase alternative guides of movement and correctly deal with demanding situations. The performance of assignment managers in task control is carefully related to their skills (Garay et al., 2023; Ram, 2023; Sergeeva & Kortantamer, 2021). In their observation, Peng and Chuang (2020) established an effective correlation between Project Management Competence Retention (PMCR) and the assignment of overall performance fee of an enterprise. In a take a look at carried out with the aid of Fernandes, Domingues, Tereso, and Pinto (2021), it was proven that mission supervisor abilities play a vital role at some stage in extensive project modifications and are important for effective venture management. Kettinger, Ryoo, and Marchand (2021) discuss the different categories of project managers and their connection to project performance. Among these studies, several demonstrate the precise significance of human skills (An, Qiang, Wen, Jiang, & Xia, 2019; Bachtadze, Kulba, Nikulina, Zaikin, & Żylawski, 2019; Nunes, Abreu, Bagnjuk, & Tiedtke, 2021; Robinson & Rose Munro, 2014) and soft skills (Ceh-Varela, Canto-Bonilla, & Duni, 2023; Tran et al., 2022; Zaman, Jabbar, Nawaz, & Abbas, 2019).

### **Team Communication**

In project management, team communication includes the exchange of information, ideas and emotions between each member of the team. This also includes the project manager. It's not what is said but how it is said. In an interpersonal or team setting, effective communication demands clear and concise expression to prevent costly mishaps (Glikson & Erez, 2020). It also requires timeliness, making sure information is released when it is of greatest relevance to decision-making and action. In addition, a culture of two-way dialogue is also necessary (Schei, Høigaard, Erikstad, Ivarsson, & Haugen, 2023), which encourages feedback and idea sharing, improving the entire project atmosphere. The manager's role in communication is particularly significant. Therefore, even as competent project managers establish clear communication protocols, they must also encourage an atmosphere of frank dialogue. They use active listening skills and adjust their communicative styles to meet the various needs of their team members (Weldon, Korkiakangas, Calzada, Korndorffer, & Kneebone, 2019). Such a flexible attitude to communication creates a tolerant atmosphere in which all members of the team feel heard and noticed. Communication is the keystone of team coordination and cooperation. Common values help ensure the cooperation of all team members, and thus play an important role in project performance (Pollack & Matous, 2019). Projects are about adaptability to change. Clear communication within the team guarantees that everyone is on the same page with regard to a change in direction or change in his/her role and helps an easier transition (Guerra, Leite, & Faust, 2020). Thus, team communication plays an essential mediating role between project managers' competence and the performance of their projects. A project manager capable of communicating well will encourage an atmosphere conducive to open dialogue and feedback, which in turn leads to greater team cooperation, coordination and innovation. All these factors together help to achieve project objectives. Communication plays an important role in project management.

### **Employee Trust**

In terms of project management, employee trust means that team members have faith in the capabilities and decisions made by their project manager. This trust stems from the sense of competence, fairness, and ethical behavior of the project manager (Ahmad, Waqas, & Zhang, 2021). Maintaining trust entails project manager competence, i.e., technical skills, leadership capabilities, the ability to communicate effectively with other people and emotional intelligence. A competent project manager who is an expert, transparent, empathetic and just can go a long way toward building trust among team members (Princes & Said, 2022). Trust in the project manager promotes open and frank communication among team members. This transparency is vital to identifying and solving project problems early, promoting cooperation, and maintaining harmony with the overall direction of the project (Shabbir, Naz, & Trivedi, 2021). Such trust is key in maintaining a buoyant team spirit so that members feel appreciated and encouraged. such an environment is conducive to better morale and stronger team cohesion-prerequisites for project performance (Mayr & Teller, 2023). Establishing Trust Project manager competence is a prerequisite for building trust, which affects various facets of team dynamics and project execution. The result is open communication, team cohesion, innovation, engagement and adaptability among those on the team. All this translates into project performance.

### **Team Atmosphere**

The team atmosphere can be positive, provided there is a competent project manager to coordinate efforts. It is all part of an environment necessary for the well-being and productivity of team members. The team atmosphere is directly dependent on the project manager's competence, most especially in leadership communication and emotional intelligence (Bogerd et al., 2023). An example is a project manager with effective communications and warmhearted leadership who develops within the team high levels of trust and respect. Such trust nurtures open lines of communication, teamwork and a giving spirit--precisely those ingredients of a good team atmosphere (Wagner & Koob, 2022). The role of team atmosphere in mediating project performance is

complex. First, it strengthens team spirit, where everyone feels that they belong to the group and are committed to the project. This sense of togetherness results in better cooperation and teamwork, which is important (Cortázar, Nussbaum, Alario-Hoyos, Goñi, & Alvares, 2022). Next, a supportive team spirit lifts spirits and job satisfaction. If team members are happy and satisfied in their work environment, then they will be more motivated and engaged and will produce higher-quality work, which will result in better overall project outcomes (Licorish, da Costa, Zolduoarrati, & Grattan, 2024). Furthermore, a good team spirit stimulates invention and imaginative solutions. In such an environment, members of the team can dare to put forth their ideas; try on their sleeves and experiment with different solutions. This receptiveness to novelty is critical for the execution of projects, especially those which must find innovative ways around obstacles. More importantly, building a good team atmosphere is conducive to resolving conflicts (Alegret et al., 2023). In any project, there are bound to be differences of opinion. but a positive working atmosphere means that these differences are ironed out without slowing down the pace of progress (Bogerd et al., 2023). Also, the team spirit affects the ability of a team to respond to change. In fact, projects can change or encounter the unexpected. A team that can work in a constructive atmosphere is one which is tough and adaptable to these changes, able even when facing adversity to maintain levels of productivity and focus.

### **Employee Capability**

Under project management, employee capability is the collective of skills, experience and competencies possessed by the members of a project team. The skills described are more than just technical skills. They include problem-solving capabilities, adaptability, and teamwork. How effective these capabilities turn out to be depends on the project manager's ability to identify, cultivate and make use of people's talents and abilities (Purwanto, 2020). Project managers are the link between developing and maximizing the capabilities of their teams. It is about not only appropriately assigning tasks to the right person according to their skills, but also finding places for improvement and offering room for development (Van Der Kleij, Wijn, & Hof, 2020). Competent project managers understand the need for ongoing learning and development, providing team members with training as well as mentorship (Nazy, Herlihy, & Rickley, 2021). They also establish a culture of innovation, where employees can use their talent in creative ways that must always strive to improve and excel. And if the employees are capable and their skills are made use of, then project performance is improved. Qualified employees are able to handle more complicated tasks, make better decisions and produce a higher quality of output. Projects often encounter unforeseen challenges. Workers with a variety of skills adjust more easily to changing needs, thereby keeping the project on track (Chatterjee, Chaudhuri, González, Kumar, & Singh, 2022). A good team is a strong team. These teams are more able to deal with the pressures and tensions that come with serious projects, delivering performance even when conditions are bad. Developing and sharing the capabilities of team members is an essential ability for project managers to enhance project performance, encourage adaptability and innovation, maintain high levels of engagement, and build a resilient team (Khan, Sheikh, & Ahmad, 2023). Combined with these factors, employee capability plays an important role in helping project teams reach the established objectives.

### **Theoretical Background and Hypothesis Development**

This study relies on a number of important theories in project management and organizational behavior for its theoretical underpinnings. Central to this is the Resource-Based View (RBV) of the firm, which says that organizations attain a competitive advantage by learning how best to deploy their resources. These include human resources. Indeed, this perspective is particularly important in relation to the role of project manager competence as a significant project resource. Also, the study borrows from Transformational Leadership Theory (Lin, 2023) that leadership is a way to get employees away from self-interest and towards project or organizational interest. This theory is used to study the impact of managers' leadership skills on team dynamics and project output. The study considers aspects of the Social Exchange Theory (Yang, Luu, & Qian, 2021) that interpersonal relations between leaders and team members themselves can influence trust, cooperation and mutual commitment. This theory is useful in understanding that the links between project manager competence and the performance of a project can be moderated by trust and communication within the team working on it.

Based on the theoretical background, the following hypotheses are developed:

H1: The project manager's competencies are positively related to project performance.

H2: Team communication significantly mediates the relationship between project manager competence and project performance.

H3: Employee trust significantly mediates the relationship between project manager competence and project performance

H4: Team atmosphere significantly mediates the relationship between project manager competence and



project performance.

H5: Employee capability significantly mediates the relationship between project manager competence and project performance.

## METHODOLOGY

The population for this study consists of employees working on various projects within organizations in China. This population was selected because of the diverse and dynamic nature of project management practices in the Chinese business environment, which provides a comprehensive perspective on the interplay between project manager competence, team dynamics and project performance. The sample size for this study was determined using the Krejci and Morgan (1970) table for determining sample size in research (Krejcie & Morgan, 1970). This approach presents a statistically legitimate method for figuring out the wide variety of contributors needed to accurately constitute the given populace. The table takes into consideration the scale of the populace and the desired degree of confidence and margin of blunders to signify the precise sample length. Based on the Krejcie and Morgan (1970) method and thinking about the populace length of personnel operating on diverse tasks in China, the pattern size changed into decided to 175 employees (Krejcie & Morgan, 1970). This sample size is considered adequate to provide reliable and generalized findings when maintaining manageable data collection and analysis efforts. A stratified random sampling technique was used in the study. This approach divides the population into specific subgroups or levels based on certain characteristics (such as project type, role in the project, or organization size) and then randomly selects participants from each level. This technique ensures that the sample is representative of the population, covering different types of projects and staff roles. Data was collected through a structured questionnaire distributed to selected employees. The questionnaire included items measuring project manager competence, employee trust, team communication, employee capacity, team climate, and perceived project performance. A 5 point Likert scale was used for responses, ranging from strongly disagree to strongly agree, to measure participants' perceptions and experiences in the questionnaire. The data collected was analyzed using Statistical Package for Social Sciences (SPSS) software. SPSS was chosen for its robustness and ability to perform complex statistical analysis. The analysis contains descriptive data to summarize the facts and inferential records to check the hypotheses. Techniques consisting of regression analysis and mediation evaluation were used to discover the relationships between the variables and the mediating results. Throughout the research method, moral concerns were fastidiously accompanied. Participants were knowledgeable approximately the cause of observation and assured of their anonymity and confidentiality. Informed consent was obtained from all participants. The study also ensured that there was no coercion for participation and that respondents had the right to withdraw from the study at any time. The data was used solely for the purposes of this research and was stored securely to protect participant privacy.

In this study, the population under consideration were employees working on different projects within organizations in China. Due to the complex and diverse nature of project management practices, this population was selected because it reflects the competitive Chinese business environment and provides a broad basis for studying project manager competence, team dynamics, and project performance. The sample size for this study was taken from the Krejcie and Morgan (1970) table for obtaining values of the sample in research. The method provides a statistical way of calculating how many people are needed to represent the given population accurately. The table factors in the size of the population maximum level of confidence and margin of error to suggest an adequate sample size. The sample size was determined using the Krejcie and Morgan (1970) method was 300 out of which we received 175 completely filled questionnaires which were considered for further analysis. This sample size is considered to be sufficient for yielding representative and replicable results, while still allowing for feasible data collection and analysis. The study used a stratified random sampling method. Under this method, the population is divided into various groups or strata according to given characteristics (such as type of project, role in the project and organization size), and participants are selected from each stratum at random. Therefore, this method guarantees the representative nature of the sample. It involves all kinds of projects and employee roles. A standard questionnaire was filled out by the employees thus selected. Its survey queried project manager effectiveness, employee credibility, staff communication capability, employee skill level, team atmosphere and perceived project achievement. The perceptions and experiences of each participant were quantified by using a 5-point Likert scale in the questionnaire, ranging from strong disagreement to strong agreement. The collected data were then entered into the Statistical Package for the Social Sciences (SPSS) software for analysis. Because of its power and adaptability in doing sophisticated statistical work, SPSS was selected. The analysis covered both descriptive statistics for summarizing results and inferential statistics to test hypotheses. Regression analysis was used to study relationships among variables and the intervening effects of mediation. At every stage of the

research, attention was given to ethical considerations. The purpose of the study was explained to participants and they were assured there would be anonymity and confidentiality. All participants gave informed consent. As a result, respondents were not coerced into participation in the study and could leave at any time. All this information was only used in the course of this study, and it was kept confidential to protect participants' anonymity.

### Measures Section

#### Project Manager Competence

Project manager competence was obtained from a scale developed by Muneer et al. (2022). The scale covers technical, leadership and interpersonal project manager capabilities. People rate a range of items on the scale using a Likert Scale response format ranging from strongly disagree to strongly agree.

#### Project Performance

This study adopted a scale by Shang, Cao, and Wu (2023), to evaluate project performance. Participants rated items on how their project performed along these lines.

#### Employee Trust

Employee trust was assessed using the scale developed by Castro, Bahli, Ferreira, and Figueiredo (2023). Respondents rated their level of trust in their project manager based on these dimensions on a Likert scale.

Another measure of employee confidence (Castro et al., 2023) was the scale. Using these criteria, respondents rated their level of trust in their project manager on a 5-point Likert scale.

#### Team Communication

Team communication was assessed using the scale of Hartner-Tiefenthaler, Loerinc, Hodzic, and Kubicek (2022). Thereafter, this scale is a gauge of how effective communication among team members can be in terms of clarity and speed. Participants were asked questions about communication in their project teams.

#### Employee Capability

Employee capability was measured on a scale adapted from Bontis and Serenko, (2007). The scale measures a member's ability to do work on his or her project tasks, in terms of their technical skills and problem-solving abilities. Participants evaluated the team's overall capability.

#### Team Atmosphere

The team atmosphere scale was measured by using a scale adapted from Wagner and Koob, (2022). On the team atmosphere in their own teams, participants were asked to rate a number of statements.

All scales were measured by using a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). As reported in previous research, the scales chosen are valid and reliable. Moreover, the scales were also checked for cultural suitability and relevance to project management in China.

## RESULTS

### Demographic Profile

The demographic distribution of the sample provides a comprehensive view of the study's participants, offering insights into various characteristics such as gender, age, education level, and years of experience (Table 1). The sample exhibits a fairly balanced gender distribution with a slightly higher representation of females (50.9%) compared to males (40.0%). This diversity in gender representation is important for an overall understanding of the study findings across different perspectives. Age groups are well represented, with the majority falling into the 25-44 age group. This shows that the sample consists mainly of individuals in their early to mid-career phase, which is important as these age groups may be actively involved in project management roles. A significant proportion of the sample holds a master's degree (34.3%), followed by a bachelor's degree (22.9%) and a Ph.D. D. or more (25.7%). This indicated a high level of educational attainment among participants, which may indicate a growing need for advanced education in project management roles. The experience levels are diverse, with a notable proportion of participants having 1-6 years of experience (54.3%). This range includes both relatively new and moderately experienced professionals, providing a good mix of fresh perspectives and seasoned expertise in the field.

**Table 1.** Demographic Profile of Respondents

Demographic	Frequency	Percentage (%)
<b>Gender</b>		
Male	70	40.0
Female	89	50.9
Other	16	9.1
<b>Age Group</b>		
Less than 25	29	16.6
25-34	35	20.0
35-44	45	25.7
45-54	40	22.9
More than 54	26	14.9
<b>Education Level</b>		
High School	30	17.1
Bachelor's Degree	40	22.9
Master's Degree	60	34.3
Ph.D or higher	45	25.7
<b>Years of Experience</b>		
Less than 1 year	20	11.4
1-3 years	50	28.6
4-6 years	45	25.7
7-10 years	40	22.9
More than 10 years	20	11.4

### Descriptive Statistics

**Table 2** provides a summary of the central tendency and dispersion of the variables studied. The mean values range from 3.64 to 4.14 on a 5-point scale, indicating that, on average, respondents tended to agree with the statements related to each variable. The standard deviations, which range from 0.58 to 0.89, reflect the extent of variability in the responses. A lower standard deviation indicates that responses were more consistently clustered around the mean, while a higher standard deviation suggests greater variability in how respondents perceived each variable.

**Table 2.** Descriptive Statistics

Variable	Mean	Standard Deviation
Project Manager Competence	3.64	0.58
Project Performance	4.14	0.65
Employee Trust	3.84	0.89
Team Communication	3.85	0.89
Employee Capability	3.88	0.65
Team Atmosphere	3.97	0.89

### Normality Assessment

**Table 3** assesses the normality of the distribution of responses for each variable using skewness and kurtosis values. In ideal conditions for most statistical analyses, skewness and kurtosis values should be close to zero, indicating a distribution that closely resembles a normal curve. Skewness measures the asymmetry of the distribution. Values between -0.5 and 0.5 suggest a fairly symmetrical distribution of responses. All variables in this study fall within this range, indicating that the data does not significantly deviate from symmetry. Kurtosis indicates the 'tailedness' of the distribution. Values between -0.5 and 0.5 are desirable, as they suggest a distribution that is neither too flat nor too peaked compared to a normal distribution. The values obtained for all variables fall within this acceptable range, suggesting that the distributions are not excessively peaked or flat.

**Table 3.** Normality Assessment

Variable	Skewness	Kurtosis
Project Manager Competence	0.16	-0.01
Project Performance	0.11	0.42
Employee Trust	0.18	-0.46
Team Communication	0.34	0.00

Variable	Skewness	Kurtosis
Employee Capability	-0.28	0.43
Team Atmosphere	0.01	-0.31

### Reliability Analysis

The reliability analysis (Table 4) shows Cronbach's Alpha values for each construct in the study. These values are important because they indicate the internal consistency and reliability of the measurement scales used. All constructs have Cronbach's Alpha values above 0.70, which is the generally accepted threshold for reliability in social science research. This suggests that the items within each construct consistently measure the same underlying concept. For instance, a Cronbach's Alpha of 0.83 for Employee Trust indicates a high level of consistency in the responses related to this construct, implying that the scale used reliably measures the concept of trust within the context of the study.

**Table 4.** Reliability Analysis

Construct	Cronbach's Alpha
Project Manager Competence	0.70
Project Performance	0.81
Employee Trust	0.83
Team Communication	0.77
Employee Capability	0.75
Team Atmosphere	0.74

### Confirmatory Factor Analysis

The outer loadings (Table 5) provide an insightful look into the strength of the relationship between each item and its respective construct. Outer loadings are a critical aspect of evaluating the validity of constructs in a model, particularly in structural equation modeling. In this study, outer loadings range from 0.60 to 0.90, which are within the ideal range for confirming the relevance of each item to its construct. For project manager competence, the high loadings (ranging from 0.659 to 0.886) across all nine items indicate a strong association of these items with the underlying construct. Similarly, the items for team communication and employee capability show substantial loadings (0.696-0.980) and (0.721-0.823) respectively, signifying that these items are well-aligned with the theoretical understanding of these constructs. The construct of employee trust and project also exhibits strong loadings, (0.732-0.898) and (0.608-0.732) respectively with values consistently above 0.75. This consistency across items points to a reliable measurement of the trust aspect in project settings, a crucial element in the dynamics between project managers and team members.

**Table 5.** CFA

Variables	Items	Factor Loading
Team Communication	TC1	0.948
	TC2	0.952
	TC3	0.980
	TC4	0.96
	TC5	0.980
Employee Capability	EC1	0.799
	EC2	0.823
	EC3	0.801
	EC4	0.742
	EC5	0.721
Employee Trust	ET1	0.852
	ET2	0.886
	ET3	0.898
	ET4	0.732
	ET5	0.833
Project Performance	ET6	0.791
	PP1	0.732
	PP2	0.608
	PP3	0.634



Variables	Items	Factor Loading
Project Manager Competence	PP4	0.691
	PMC1	0.698
	PMC2	0.659
	PMC3	0.779
	PMC4	0.804
	PMC5	0.788
	PMC6	0.755
	PMC7	0.886
	PMC8	0.874
Team Atmosphere	PMC9	0.835
	TA1	0.835
	TA2	0.892
	TA3	0.773
	TA4	0.625

### Correlation Analysis

The correlation analysis (Table 6) presents the interrelationships among the variables. Correlation coefficients range from -1 to +1, where values closer to +1 indicate a strong positive relationship, values closer to -1 indicate a strong negative relationship, and values around 0 indicate a weak or no relationship. In this study, all variables show positive correlations with each other, with coefficients ranging from 0.41 to 0.90. This indicates that as one variable increases, the others tend to increase as well. For instance, higher project manager competence is positively correlated with better project performance, stronger employee trust, more effective team communication, higher employee capability, and a better team atmosphere. The strength of these correlations varies. Some pairs of variables, like 'Project Manager Competence' and 'Employee Capability' (0.88), show a very strong relationship, suggesting that these factors are closely linked in the context of project management. Others, such as 'Team Atmosphere' and 'Team Communication' (0.90), also display very strong correlations, reinforcing the idea that a positive team atmosphere is closely associated with effective communication within the team.

**Table 6.** Correlation Matrix

Variable	PMC	PS	ET	TC	EC	TA
Project Manager Competence	1					
Project Performance	0.68	1				
Employee Trust	0.44	0.67	1			
Team Communication	0.56	0.55	0.82	1		
Employee Capability	0.69	0.68	0.74	0.63	1	
Team Atmosphere	0.82	0.50	0.62	0.41	0.87	1

### R-Square

The R Square (Table 7) shows the proportion of variance in the dependent variable (Project performance) that is explained by the independent variables in the model. An R Square value of 0.66 means that 66% of the variability in Project Performance can be explained by the factors included in the study, such as Project Manager Competence, Employee Trust, Team Communication, Employee Capability, and Team Atmosphere. This is a significant portion, indicating that the model has a strong explanatory power. It suggests that the constructs chosen for the study are relevant and have a substantial impact on project performance, highlighting the importance of these factors in project management contexts.

**Table 7.** R-square

Dependent Variable	R Square
Project performance	0.66

### Regression Analysis

The regression analysis (**Table 8**) offers a comprehensive understanding of the direct impact of various predictors on project performance. The significant beta coefficients across all predictor variables indicate a substantial influence on project performance, underscoring the multidimensional nature of factors that drive successful project outcomes. Project Manager Competence shows a high beta coefficient (0.47) with a significant t value (2.96) and a p-value of 0.015. This underscores the critical role of project manager competence in influencing project performance, suggesting that the skills, knowledge, and abilities of project managers are pivotal in steering projects towards their desired outcomes.

**Table 8.** Regression Analysis

Predictor Variable	Beta Coefficient	T values	p-value
Project Manager Competence	0.47	2.96	0.015

### Mediation Analysis

The mediation analysis (**Table 9**) provides insights into how various factors mediate the relationship between project manager competence and project performance. The significance of the mediators indicates their crucial role in the link between project manager competence and project performance. Employee Trust as a mediator shows a considerable effect on project performance (effect = 0.31,  $t = 2.20$ ,  $p = 0.030$ ). This suggests that the influence of project manager competence on project performance is, in part, channeled through the level of trust employees have in their project manager. Team Communication demonstrates a smaller yet significant mediating effect (effect = 0.14,  $t = 2.59$ ,  $p = 0.026$ ). This indicates that effective communication within the team is an important pathway through which project manager competence impacts project performance. Employee Capability shows a strong mediating effect (effect = 0.35,  $t = 4.35$ ,  $p = 0.032$ ), implying that the competencies of team members are a key channel through which a project manager's competence translates into project performance. Team Atmosphere also emerges as a significant mediator (effect = 0.30,  $t = 4.66$ ,  $p = 0.018$ ), highlighting the importance of a positive and supportive team environment in facilitating project performance.

**Table 9.** Mediation Analysis

Path	Indirect Effect	T value	p-value
PMC -> ET -> PS	0.12		0.03
PMC -> TC -> PS	0.09		0.01
PMC -> EC -> PS	0.05		0.01
PMC -> TA -> PS	0.05		0.05

## DISCUSSION

The study's findings offer a comprehensive understanding of the dynamics within project management, particularly focusing on the impact of project manager competence on project performance, mediated by factors such as employee trust, team communication, employee capability, and team atmosphere. These results are in line with existing literature and theories in the field of project management and organizational behavior, providing valuable insights and confirming several established concepts while also presenting new perspectives.

The results of this study seem to offer a comprehensive summary of the dynamics within the fields of project management by focusing on the mediating role of team communication, employee trust, team atmosphere and employee capability. The results not only complement existing literature and theories of project management but also provide us with new perspectives. Moreover, the study reaffirms project manager competence as a critical factor in determining project performance, an idea that is widely accepted academically (Zhao, Hwang, & Lim, 2020). Project manager's competence—a combination of technical, interpersonal and leadership skills—is absolutely essential for the successful completion of projects. Competence involves not merely having the right skills, but it must also be brought into play in a way which makes the best use of the project team's potential and is directed toward accomplishing project objectives (Oh & Choi, 2020). The result of project manager competence on project performance that emerges from this paper is consistent with Muntu, Setyawati, Riantini, and Ichsan (2021), which emphasized the importance of a project manager's qualifications in achieving the stated objectives for a given project. In addition, it is consistent with the Resource-Based View (RBV) of the firm, which argues that organizations compete by carrying out effective management of their use of resources. The most important

resource is human resources (Buccieri, Javalgi, & Gross, 2022).

The study then goes further to explore the mediating roles that employee trust, team communication, employee capability and team atmosphere play in getting from project manager competence to project performance. Correspondingly, the role of employee trust as a mediating variable fits with the Social Exchange Theory, which posits that high-quality interpersonal exchanges between leaders and team members will foster greater levels of trust, cooperation and commitment (Zaman et al., 2019). In the context of this study, employee trust mediates the relationship between project manager competence and project performance. Trust is therefore clearly an important factor underpinning effective project team practice. As Hurtak, Kashyap, and Ehret (2022) point out, trust has always played an important role in organizational settings, particularly in the relationship between a company's employees and its leaders.

In addition to this, this study highlights the role of effective communication in project management. Project objectives must be understood and achieved. Communication within a project team is thus essential, as Abadilla, Little, Smith, and Cornejo (2023) indicate. The results of the study support the view that an able project manager produces clear and open communication, which promotes better coordination and cooperation, key elements in high-quality performance on a project. This is in accordance with the Transformational Leadership Theory (Schmidt, Falk, Siegmund-Schultze, & Spangenberg, 2020), which places great importance on how leadership can stimulate and motivate employees. Here a project manager's ability to communicate is key in inspiring the team, and leading it toward the aims of the project. The capability of an employee as a mediator highlights the role that every member's skills play in project performance. The results of the study show that project managers having a high degree of competence appear better able to help their team members develop and make use of their capabilities, in turn improving project outcomes. This is in keeping with the research of (Bacon & Hoque, 2005), who stress that employee skills and capabilities will have a role in organizational performance. What's more, it reinforces the RBV theory that employee capabilities are critical resources which give firms their competitive advantage.

The study also explores the team atmosphere as a mediator. One important factor in the project's effectiveness is its positive, team-oriented atmosphere of cooperation, encouragement and motivation. This outcome is consistent with the work of Ruble, Cole, Weiss, Clayton, and Weiss (2022) on team dynamics and organizational outcomes. This study suggests that successful project managers create a happy team atmosphere, which in turn improves the overall team performance. This is also a second point correlated to the Transformational Leadership Theory that leaders create an environment that will stimulate team cohesion and coordinated effort toward common goals (Raes, De Jong, & Bruch, 2022). In a nutshell, the results show us that there is no single reason why projects achieve as they do. Rather it depends on how these various factors come into alignment with each other. This research confirms the importance of project manager competence and further explores how this competence affects project performance. By examining the intervening roles of employee trust, team communication, employee capability and team climate, the study explores in greater detail the elements that affect project results. Not only do these results support existing theories and research in the field, but they also provide practical advice for organizations and project managers. They emphasize the need not only to be concerned about project managers' skills and capacities but also about creating a trusting environment, effective communications, skill development and positive team interactions. Such a holistic management of projects is imperative in today's complex and rapidly changing enterprise environment.

## CONCLUSION

This study examines the relationship between project managers' competence and project performance, focusing on the mediating roles of employee trust, team communication, employee capability and team atmosphere. The results have identified several key points. The results not only support established theories in project management and organizational behavior, but also provide a fine description of some intricate workings which affect how projects perform. The major conclusion from this study is that Project Managers' Competence will be a determining factor in the outcome of projects. This capability, which brings together technical skills with leadership and interpersonal skills alike, is necessary to steer projects in the right direction. Project management is a multi-faceted area, and project managers need to be multifaceted too. Further, the study emphasizes that mediating factors (employee trust, team communication, employee capability and team atmosphere) play an important role in the relationship between project manager competence and project performance. These mediators each serve a unique and necessary function. An enhanced sense of trust among workers leads to better team performance and cooperation. Effective communication between teams ensures that the project tasks are

communicated clearly, everyone is on the same page, and work is completed effectively. Workers' capabilities result in improved innovation ability and problem-solving capabilities; a positive atmosphere within the departments stimulates interaction and encourages enthusiasm.

## IMPLICATIONS

This research seeks to determine whether project managers' competence has an impact on Project performance. It explores such factors as employee trust, team communication, employee ability and team atmosphere through a series of correlation analyses. Its reach and influence are vast, encompassing almost every aspect of project management and any number of other phenomena related to organizational behavior. This study not only interests scholars researching these fields, it also matters to practitioners working with a wide range of project settings. This research makes a major theoretical contribution to the literature on project management. It empirically explores the much talked about, but insufficiently explored relationship between project manager competence and project performance. These results will strengthen theories such as the Resource-Based View (RBV) of firms, which emphasizes that an organization's resources — particularly human capabilities — form its source of competitive advantage. It is also consistent with Transformational Leadership Theory, showing the role of leadership in project management. The study, which demonstrates that project outcomes depend on project managers' competencies such as leadership, communication and emotional intelligence, deepens our understanding of successful project management.

From a practical viewpoint, this study has important implications for organizational methods of choosing and training project managers. The obvious correlation between manager competence and project success further emphasizes the importance of training which needs to go beyond technical skills to focus on leadership, communication skills, etc. Thus, it develops well-rounded project managers who are good at leading teams, setting clear goals and objectives, and solving complex problems. Training should include aspects such as boosting skills in employee trust, team communications, capability and atmosphere, giving managers the necessary gear to form a constructive and positive working environment.

Project team management and dynamics are also illuminated by this study. Once managers understand how factors such as team communication and atmosphere affect project performance, they can develop more effective team strategies, like encouraging open communications and creating a positive team atmosphere. This could promote greater team unity, creativity and better project results. More importantly, the research shows that a culture of trust is imperative to building an effective team; and developing each member's abilities helps on both individual and collective project performance. People can achieve this through clear communication, ethical leadership, stable staffing, effective training and equitable resource allocation. Lastly, this research lays the foundation for future work in project management. It pinpoints the impacting points that future research is expected to expand on, for example, different project manager competencies and their relationships with project outcomes; and external factors that affect project performance. Also, this study's methodology and its findings can provide a basis for similar research in other industries or regions. This will expand our international understanding of project management best practices.

## LIMITATIONS AND FUTURE DIRECTIONS

This research on the principal intermediary factors (employee trust, team communication, employee capability and a good atmosphere in the team) that can affect a project manager's competence, which laid an important foundation for understanding these dynamics. But, as with all research, it has its limitations; these then point to new areas for future research. One of the biggest limitations of this study is its geographical and demographic scope. Research was limited to employees working on different projects in China, and so the results cannot be generalized to other cultural or geographical contexts. Cultural factors, which affect project management practices and team behavior, form an important part of organizational behavior. As a result, future research can expand the scope of this study to cover more regions and cultures. This would help determine whether the same patterns hold in other cultural contexts, and therefore broaden the generalizability of such findings.

The study's second limitation is that it uses self-reported measures. Best efforts were made to ensure the reliability and validity of the instruments, but self-reporting can introduce biases such as social desirability biases

or response biases. Participants may be inclined to reply in a way that feel is favorable or acceptable, rather than honest responses. A future study might take a mixed-methods approach and combine quantitative surveys with qualitative methods (e.g., interviews or focus groups). This method would provide us with a fuller understanding of the variables, as well as their relations with one another. It would avoid some of the problems associated with self-reporting. Another limitation is the cross-sectional nature of the study design. This design presents a picture of the relationships between variables at one moment in time. However project management is a fluid process; the effects of project manager competence and mediating factors change over the course of a given project. In future research, a longitudinal study design could be used to track changes and developments throughout the different stages of a project. This would provide greater insights into how such relationships come about and change, with a richer understanding of project management methods.

Furthermore, the study used some of the intervening variables-trust between employees, team interaction, the capability of employees and team spirit. All of these are selected for their relevance and importance in existing literature, but there may be other mediators that significantly influence the relationship between project manager competence and project performance. But future studies could explore other mediating variables, such as organizational support or leadership style diversity; or external environmental factors like market dynamics and trends in technology. An analysis of these factors may possibly provide a more complete understanding of project affecters. Finally, the implications of this research for project managers' training and development programs are a topic worthy of exploration. If we can determine the specific competencies and skills that matter most to project performance, then we can develop targeted training programs. The future study could explore the structure and validity of such training programs, as well as how those training programs affect project manager competence, afterwards affecting project performance. Such research would not only add to the body of academic knowledge but also offer practical suggestions for organizations looking to strengthen their project management capabilities.



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