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Transformational leadership and project success: The serial mediating roles of team-building and psychological empowerment

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Abstract: Project success (PS) remains a major concern in project-based organizations, particularly in complex and resource-constrained environments where leadership, team coordination, and employee motivation are critical. This study examines the relationship between transformational leadership (TL) and PS, with particular attention to the mediating roles of team-building (TB) and psychological empowerment (PE). Using cross-sectional survey data collected in 2025 from 720 project managers in Tunisia's construction, information technology, and telecommunications sectors through purposive sampling, the study applies regression-based mediation analysis using MINITAB 17, with HC3 robust standard errors and bias-corrected bootstrapping (10,000 resamples). The findings indicate that TL positively influences PS both directly and indirectly through TB and PE. TB also positively predicts PE, supporting a serial mediation mechanism. These results suggest that TL improves project outcomes by strengthening team cohesion and enhancing employees' PE. The study contributes contextual empirical evidence from Tunisia and provides practical insights to improve leadership and team effectiveness in project-based environments.

Keywords: transformational leadership; team-building; psychological empowerment; project success; serial mediation; Tunisia

1. Introduction

Project success (PS) remains a central concern in project management research due to its critical role in enhancing organizational performance and competitiveness (Fareed et al., 2023; Khatkhat et al., 2024). It is generally defined as the achievement of project objectives in terms of time, cost, quality, and stakeholder satisfaction (PMI, 2018; Nauman et al., 2022). Despite advances in project management practices, a substantial number of projects continue to fail, particularly in resource-constrained environments, where limitations in leadership, team coordination, and employee engagement are more pronounced (Rodriguez, 2021; Fareed et al., 2022). These challenges highlight the importance of understanding the behavioral mechanisms that drive PS.

Leadership has been widely recognized as a key determinant of project outcomes. In particular, transformational leadership (TL) has received considerable attention due to its ability to inspire employees, promote innovation, and align individual and organizational goals (Bass & Riggio, 2006; Ahmad et al., 2022). In complex project environments, TL enhances trust, adaptability, and team commitment, thereby improving project performance (Maqbool et al., 2017; Nauman et al., 2022). Drawing on Self-Determination Theory (SDT), TL contributes to fulfilling employees' needs

for autonomy, competence, and relatedness, which fosters intrinsic motivation and performance (Deci & Ryan, 2000).

However, the relationship between TL and PS is unlikely to be purely direct. Leadership effects are often transmitted through intermediate mechanisms operating at both the team and individual levels. At the team level, team-building (TB) enhances coordination, trust, and communication through practices such as role clarification and collaborative problem-solving (Salas et al., 1999; Klein et al., 2009). At the individual level, psychological empowerment (PE) reflects employees' intrinsic motivation and sense of control over their work (Spreitzer, 1995). Prior research suggests that both TB and PE play important roles in improving project outcomes, yet they are often examined separately.

Importantly, TB and PE may operate jointly as a serial mediation mechanism linking TL to PS. Transformational leaders first strengthen team cohesion through TB practices, which then create conditions that foster PE. Empowered employees in cohesive teams are more likely to demonstrate adaptability, initiative, and effective problem-solving, thereby contributing to PS (Ali et al., 2020; Khattak et al., 2022). However, limited research has examined this sequential relationship within an integrated framework, particularly in emerging contexts such as Tunisia.

This study addresses these gaps by integrating TB and PE into a unified serial mediation model. It provides empirical evidence from Tunisia's project-based sectors, thereby extending existing research to an underexplored context. Accordingly, this study aims to examine the direct relationship between TL and PS, test the mediating roles of TB and PE, and analyze their sequential mediating effect.

The remainder of this paper is structured as follows. Section 2 presents the literature review and hypotheses development. Section 3 describes the research methodology. Section 4 reports the empirical results. Section 5 discusses the findings. Finally, Section 6 presents the conclusion.

2. Literature review and hypotheses development

This section reviews the literature on TL, TB, PE, and PS. It develops the study hypotheses by examining the direct and indirect relationships among these constructs, with particular attention to the mediating roles of TB and PE.

2.1 Transformational leadership and project success

TL is widely recognized as an effective leadership style that promotes motivation, innovation, and alignment between individual and organizational goals (Bass & Riggio, 2006). It is characterized by behaviors such as inspirational motivation, intellectual stimulation, individualized consideration, and idealized influence. In project-based environments, where uncertainty, complexity, and interdependence are high, TL plays a critical role in enhancing team performance and project outcomes (Maqbool et al., 2017; Zaman et al., 2019).

PS refers to the achievement of project objectives in terms of time, cost, quality, and stakeholder satisfaction (PMI, 2018). Leadership is a key determinant of PS, as it influences decision-making, communication, and coordination within project teams (Turner & Müller, 2005). Empirical studies have shown that TL positively affects PS

by fostering trust, encouraging collaboration, and enhancing employees' commitment and performance (Aga et al., 2016; Raziq et al., 2018; Ali et al., 2021).

From a theoretical perspective, Self-Determination Theory (SDT) suggests that leadership behaviors that support autonomy, competence, and relatedness enhance intrinsic motivation, leading to improved performance outcomes (Deci & Ryan, 2000). Transformational leaders contribute to fulfilling these psychological needs, thereby creating conditions that support successful project execution. Based on this reasoning, the following hypothesis is proposed:

H1. *Transformational leadership is positively related to project success.*

2.2 Team-building as a mediator

TB refers to a set of structured activities designed to improve team functioning by enhancing communication, trust, coordination, and role clarity (Salas et al., 1999; Klein et al., 2009). In project environments, effective TB is essential for managing interdependencies and achieving collective goals.

TL contributes to TB by promoting a shared vision, encouraging open communication, and fostering trust among team members (Bass & Riggio, 2006). Leaders who engage in transformational behaviors help clarify roles, align team objectives, and support collaborative problem-solving, thereby strengthening team cohesion (Nauman et al., 2022; Khan et al., 2023).

In turn, TB positively influences PS. Cohesive teams are better able to coordinate tasks, resolve conflicts, and adapt to changing project conditions, which enhances overall performance (Klein et al., 2009; Aga et al., 2016). Empirical studies confirm that team cohesion and communication are critical drivers of successful project outcomes (Mariam et al., 2022).

Furthermore, TB may mediate the relationship between TL and PS. Transformational leaders influence project outcomes indirectly by fostering team processes that improve collaboration and performance (Braun et al., 2013; Zavari & Afshar, 2023). From a Resource Conservation Theory perspective, TB helps accumulate key resources such as trust and coordination, which facilitate effective project execution (Hobfoll, 2011). Accordingly, the following hypotheses are proposed:

H2a. *Transformational leadership is positively related to team-building.*

H2b. *Team-building is positively related to project success.*

H2c. *Team-building mediates the relationship between transformational leadership and project success.*

2.3 Psychological empowerment as a mediator

PE reflects an individual's intrinsic motivation and is characterized by four dimensions: meaning, competence, self-determination, and impact (Spreitzer, 1995). It represents the extent to which employees feel capable, autonomous, and influential in their work.

TL enhances PE by creating a supportive and motivating work environment. Through inspirational vision, intellectual stimulation, and individualized consideration, transformational leaders encourage employees to take initiative and

develop confidence in their abilities (Avolio et al., 2004; Ahmad et al., 2023). These leadership behaviors contribute to fulfilling employees' psychological needs, consistent with SDT (Deci & Ryan, 2000).

PE, in turn, positively influences PS. Empowered employees are more proactive, resilient, and engaged, which improves task performance and adaptability in project settings (Seibert et al., 2011; Khan et al., 2020). Empirical research indicates that empowered individuals are better able to handle complex tasks and contribute effectively to project objectives (Nauman et al., 2010; Ali et al., 2021).

Moreover, PE may act as a mediator between TL and PS. Transformational leaders indirectly enhance project outcomes by fostering employees' intrinsic motivation and sense of ownership, which translate into improved performance (Saira et al., 2021; Ahmad et al., 2023). Therefore, the following hypotheses are proposed:

H3a. *Transformational leadership is positively related to psychological empowerment.*

H3b. *Psychological empowerment is positively related to project success.*

H3c. *Psychological empowerment mediates the relationship between transformational leadership and project success.*

2.4 Serial mediation of team-building and psychological empowerment

Beyond their individual mediating roles, TB and PE may operate sequentially to explain how TL influences PS. Transformational leaders first shape team dynamics by fostering cohesion, trust, and coordination through TB practices. These team-level conditions create a supportive environment in which employees are more likely to feel empowered.

In cohesive and well-structured teams, employees experience greater clarity, support, and collaboration, which enhances their sense of competence and autonomy (Aga et al., 2016; Mariam et al., 2022). This suggests that TB acts as a foundation for PE. Once empowered, employees are more likely to exhibit proactive behavior, creativity, and effective problem-solving, all of which contribute to PS (Groselj et al., 2020; Khattak et al., 2022).

From a theoretical perspective, this sequential process can be explained by the interaction between team-level resources and individual-level motivation. TB strengthens collective resources such as trust and coordination, while PE translates these conditions into individual performance (Hobfoll, 2011; Deci & Ryan, 2000). This highlights the complementary roles of team dynamics and individual psychological states in shaping project outcomes. Accordingly, the following hypotheses are proposed:

H4. *Team-building is positively related to psychological empowerment.*

H5. *Team-building and psychological empowerment serially mediate the relationship between transformational leadership and project success.*

Overall, the literature indicates that TL influences PS through both direct and indirect mechanisms. TB enhances team cohesion and coordination, while PE strengthens employees' intrinsic motivation and engagement. Moreover, TB may create the conditions that enable PE, resulting in a sequential pathway linking leadership to PS. Based on this conceptual framework, the study proposes a model integrating both parallel and serial mediation effects, as illustrated in **Figure 1**.

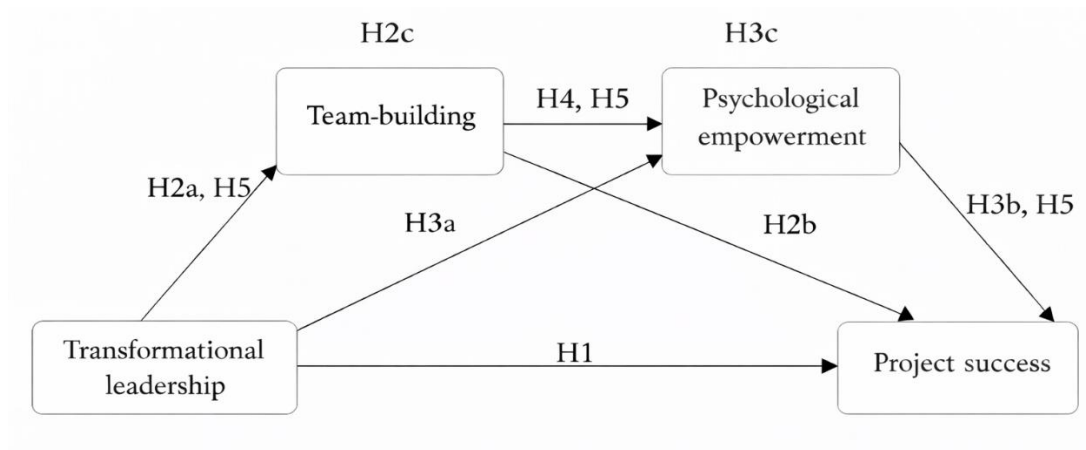


Figure 1. Conceptual framework.

3. Research methodology

This section presents the research methodology, including sample and data collection, measurement instruments, reliability and validity assessment, and data analysis procedures.

3.1 Sample and data collection procedures

This study collected data from project managers operating in project-based environments across the construction, information technology (IT), and telecommunications sectors. These sectors were selected due to their relevance in examining PS, leadership practices, and team dynamics in complex and dynamic contexts (Carvalho & Rabechini, 2017; Martens & de Carvalho, 2014).

A non-probability purposive sampling approach was adopted. Data were collected through a structured online questionnaire distributed via LinkedIn, targeting professionals across Tunisia. To ensure relevance, respondents were required to have participated in at least one significant project during the previous year. Screening questions were used to verify eligibility in terms of project involvement and professional experience.

The data collection process was conducted between February and September 2025. A total of 720 valid responses were obtained and retained for analysis. Participation was voluntary, and respondents were informed about the academic purpose of the study prior to completing the questionnaire. Informed consent was obtained from all participants. No personally identifiable information was collected, and all responses were treated confidentially.

The selected sectors represent diverse project contexts, including large-scale infrastructure projects in construction and innovation-driven projects in IT and telecommunications (Ebbesen & Hope, 2013; Martens & de Carvalho, 2014). This multisector approach provides insights into different types of project-based environments.

The sample is predominantly composed of male respondents (65%), while females represent 35%. Most participants are aged between 30 and 39 years old (41.9%), followed by those aged 40–49 years old (24.4%). In terms of education, the

majority hold a Master's degree (55%), followed by Bachelor's degrees (29.7%) and Doctorates (15.3%). Regarding professional experience, 38.6% have between 5 and 10 years of experience. In terms of sector distribution, 40% of respondents worked in IT, 35% in construction, and 25% in telecommunications.

3.2 Measurement instruments

All constructs were measured using validated scales from prior research. A five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree") was used for all items. TL was measured using the 13-item scale developed by Aga et al. (2016), which captures dimensions such as inspirational motivation and intellectual stimulation. TB was assessed using a 17-item scale adapted from Aga et al. (2016), covering goal setting, role clarification, interpersonal relationships, and collaborative problem-solving. PS was measured using a 14-item scale from Aga et al. (2016), focusing on performance in terms of time, cost, and quality. PE was measured using the 12-item scale developed by Spreitzer (1995), which includes the dimensions of meaning, competence, self-determination, and impact.

3.3 Reliability and validity

The reliability of the measurement scales was assessed using Cronbach's alpha coefficients. All constructs demonstrated acceptable internal consistency, exceeding the recommended threshold of 0.70 (Hair et al., 2019).

To assess construct validity, both convergent and discriminant validity were examined. Convergent validity was assessed using composite reliability (CR) and average variance extracted (AVE), while discriminant validity was examined using HTMT ratios. The results provide evidence supporting the reliability and validity of the measurement instruments.

Given that the data were collected using a single-source self-report questionnaire, the potential for common method bias cannot be entirely ruled out. However, procedural remedies such as ensuring anonymity, voluntary participation, and minimizing evaluation apprehension were implemented to reduce this risk.

3.4 Data analysis method

The hypotheses were tested using regression-based mediation analysis. Descriptive statistics, correlation analysis, and hierarchical regression analyses were conducted using MINITAB 17.

To examine indirect effects, bias-corrected bootstrapping with 10,000 resamples was applied, providing robust estimates of mediation effects. In addition, heteroscedasticity-consistent standard errors (HC3) were used to improve the robustness of the regression estimates.

4. Results

The following results present the empirical testing of the conceptual model, including descriptive statistics, correlation analysis, regression results, and mediation analysis.

4.1 Descriptive statistics, correlation analysis, and measurement validity

Descriptive statistics and bivariate correlations are presented in **Table 1**. All constructs demonstrated satisfactory internal consistency, with Cronbach's alpha values ranging from 0.83 to 0.90, exceeding the recommended threshold of 0.70 (Hair et al., 2019). The descriptive results indicate moderate to relatively high levels of TL (Mean = 3.41, SD = 0.25) and PE (Mean = 3.19, SD = 0.24), while TB (Mean = 2.64, SD = 0.52) and PS (Mean = 2.95, SD = 0.38) were reported at moderate levels. Correlation analysis shows that TL is positively associated with TB ($r = 0.39, p < 0.01$), PE ($r = 0.28, p < 0.01$), and PS ($r = 0.31, p < 0.01$). TB is positively correlated with PE ($r = 0.34, p < 0.01$) and PS ($r = 0.48, p < 0.01$). PE is also positively associated with PS ($r = 0.45, p < 0.01$). These correlations are consistent with the hypothesized relationships.

Table 1. Means, Standard Deviations, Cronbach's alpha, and Correlations.

Constructs	Mean	SD	α	TL	TB	PE	PS
TL	3.41	0.25	0.85	—			
TB	2.64	0.52	0.90	0.39**	—		
PE	3.19	0.24	0.83	0.28**	0.34**	—	
PS	2.95	0.38	0.87	0.31**	0.48**	0.45**	—

Note(s): N = 720; α = Cronbach's alpha. SD = Standard Deviation, ** $p < 0.01$ (two-tailed).

Convergent and discriminant validity were assessed using CR, AVE, and HTMT ratios. As shown in Table 2, all constructs demonstrate satisfactory convergent validity, with CR values exceeding 0.70 and AVE values above the recommended threshold of 0.50 (Hair et al., 2019). In addition, the HTMT ratios reported in **Table 2** are all below 0.85, indicating that the constructs are empirically distinct. These results confirm that both convergent and discriminant validity are established.

Table 2. Convergent and Discriminant Validity.

Constructs	CR	AVE	TL	TB	PE	PS
TL	0.91	0.52	—			
TB	0.93	0.50	0.62	—		
PE	0.89	0.54	0.49	0.58	—	
PS	0.90	0.51	0.46	0.74	0.67	—

Note(s): CR = Composite Reliability, AVE = Average Variance Extracted. Values below the diagonal represent HTMT ratios.

4.2 Regression analysis

Hierarchical regression analysis was conducted to test the direct relationships among the study constructs. The results are presented in **Table 3**. TL significantly predicts TB ($\beta = 0.29, SE = 0.05, p < 0.001$) and PE ($\beta = 0.41, SE = 0.06, p < 0.001$), supporting H2a and H3a. TL also significantly predicts PS ($\beta = 0.17, SE = 0.05, p < 0.001$), supporting H1. TB has a significant positive effect on PE ($\beta = 0.21, SE = 0.04, p < 0.001$) and PS ($\beta = 0.24, SE = 0.05, p < 0.001$), supporting H2b and H4. PE also significantly predicts PS ($\beta = 0.19, SE = 0.04, p < 0.001$), supporting H3b. The model

explains a substantial proportion of variance in PS ($R^2 = 0.42$, $F(3,716) = 117.84$, $p < 0.001$). Variance inflation factors (VIF) were calculated to assess multicollinearity. All values were below the recommended threshold of 5 (Hair et al., 2019), indicating that multicollinearity is not a concern. These results provide support for all direct hypotheses (H1, H2a, H2b, H3a, H3b, and H4).

Table 3. Regression Results.

Consequent						
Antecedent	TB (M1)		PE (M2)		PS (Y)	
	Coeff.	SE (HC3)	Coeff.	SE (HC3)	Coeff.	SE (HC3)
TL	0.29***	0.05	0.41***	0.06	0.17***	0.05
TB	—	—	0.21***	0.04	0.24***	0.05
PE	—	—	—	—	0.19***	0.04
Constant	0.05	0.03	−0.22	0.04	−0.14	0.15
R^2	0.16		0.26		0.42	
F(df)	$F(1, 718) = 31.52$, $p < 0.001$		$F(2, 717) = 92.41$, $p < 0.001$		$F(3, 716) = 117.84$, $p < 0.001$	

Note(s): SE (HC3) = Heteroscedasticity-Consistent Standard Error, *** $p < 0.001$.

M1 = First mediator (TB), M2 = Second mediator (PE).

4.3 Mediation and serial mediation analysis

To test the mediation hypotheses (H2c, H3c) and the serial mediation hypothesis (H5), a bootstrapping procedure with 10,000 resamples was applied. The results are presented in **Table 4**. The indirect effect of TL on PS through TB is significant ($\beta = 0.07$, Boot SE = 0.03, 95% CI [0.03, 0.12]), supporting H2c. The indirect effect through PE is also significant ($\beta = 0.08$, Boot SE = 0.03, 95% CI [0.04, 0.13]), supporting H3c. Furthermore, the serial indirect effect through TB and PE (TL → TB → PE → PS) is significant ($\beta = 0.06$, Boot SE = 0.02, 95% CI [0.03, 0.09]), supporting H5. The total indirect effect of TL on PS is $\beta = 0.21$ (Boot SE = 0.05, 95% CI [0.14, 0.30]). Because the direct effect of TL on PS remains significant alongside the indirect effects, the results indicate partial mediation.

Table 4. Bootstrapped Indirect Effects.

Effect	Coeff.	Boot SE	95% CI (BCa)
Indirect 1 (TL → TB → PS) (H2c)	0.07	0.03	[0.03, 0.12]
Indirect 2 (TL → PE → PS) (H3c)	0.08	0.03	[0.04, 0.13]
Serial Indirect (TL → TB → PE → PS) (H5)	0.06	0.02	[0.03, 0.09]
Total indirect effects	0.21	0.05	[0.14, 0.30]

Note(s): Boot SE = bootstrap standard error. Indirect effects are significant when the confidence interval does not include zero.

5. Discussion

This study examined the relationship between TL and PS, with particular emphasis on the mediating roles of TB and PE, as well as their serial mediation. The findings indicate that TL is positively associated with PS both directly and indirectly

through TB and PE. Moreover, the results support a serial mediation mechanism, whereby TL enhances TB, which in turn strengthens PE, ultimately contributing to improved PS. Because both the direct and indirect effects remain significant, the findings indicate partial mediation, suggesting that TL influences project outcomes through multiple complementary pathways. These findings are consistent with the empirical results reported in this study and align with prior research on leadership processes in project environments (Aga et al., 2016; Ali et al., 2020).

The positive association between TL and PS suggests that leadership plays an important role in shaping project outcomes in dynamic and complex environments. As highlighted by Maqbool et al. (2017), transformational leaders enhance performance by fostering adaptability and strategic alignment. These leaders articulate a clear vision, encourage innovation, and strengthen team commitment, aligning collective efforts with project objectives. Similarly, Nauman et al. (2022) emphasized that leadership behaviors are particularly critical in project-based settings characterized by uncertainty and coordination challenges.

The results also highlight the mediating role of TB in the relationship between TL and PS. TL contributes to the development of cohesive and well-coordinated teams by promoting trust, clarifying roles, and encouraging collaboration. According to Klein et al. (2009), structured TB practices improve communication and coordination, which are essential for effective performance. In addition, Aga et al. (2016) demonstrated that cohesive teams are better able to translate leadership behaviors into tangible project outcomes, reinforcing the importance of team-level dynamics.

Similarly, PE plays a key mediating role in linking TL to PS. As defined by Spreitzer (1995), PE reflects employees' sense of meaning, competence, and autonomy. Transformational leaders foster these dimensions by providing support, encouraging participation, and promoting self-confidence. Deci and Ryan (2000) further explain that fulfilling psychological needs enhances intrinsic motivation, which improves performance. Consistent with this perspective, empowered employees are more proactive and resilient, enabling them to contribute more effectively to PS (Khan et al., 2020).

Beyond these individual mediation effects, the results support a serial mediation mechanism involving both TB and PE. Specifically, TL first strengthens team cohesion and coordination, which creates a supportive context for PE. In cohesive teams, individuals are more likely to feel confident and capable of influencing outcomes. As noted by Ali et al. (2020), team processes and individual motivation are closely interconnected in project environments. This sequential mechanism highlights how team-level dynamics can enhance individual psychological states, ultimately improving overall performance.

Overall, the findings provide evidence that TL contributes to PS through a combination of direct, team-based, and psychological mechanisms. These results emphasize the importance of considering both collective and individual dimensions when analyzing leadership effectiveness in project settings. While the findings are consistent with prior research, this study extends existing knowledge by demonstrating how team-level and individual-level mechanisms jointly and sequentially explain the influence of leadership on PS in project-based environments.

6. Conclusion

This study investigated the relationship between TL and PS, with a particular focus on the mediating roles of TB and PE, as well as their sequential interaction. The findings demonstrate that TL contributes to PS both directly and indirectly through TB and PE, confirming a partial mediation mechanism. More importantly, the results highlight a serial mediation pathway in which TL enhances team cohesion and coordination through TB, which in turn strengthens employees' PE, ultimately leading to improved project outcomes. These findings provide a comprehensive understanding of how leadership behaviors are translated into performance in project-based environments.

From a theoretical perspective, this study extends the literature by integrating team-level and individual-level processes into a unified explanatory framework. The results show that TB and PE operate both independently and sequentially in linking TL to PS, emphasizing that leadership effectiveness depends not only on direct influence but also on its ability to shape team dynamics and intrinsic motivation. In line with self-determination theory, leadership behaviors that support autonomy, competence, and collaboration contribute to both team functioning and individual engagement (Deci & Ryan, 2000). By focusing on a project-based context in Tunisia, this study also provides evidence that these mechanisms remain relevant in emerging and resource-constrained environments.

From a managerial perspective, the findings highlight the importance of adopting an integrated approach to leadership and project management. Organizations should develop TL capabilities that promote vision, support, and innovation, while simultaneously strengthening TB practices such as role clarification, coordination, and collaboration. In addition, fostering PE through autonomy and participative decision-making can enhance employee motivation and adaptability. Together, these elements contribute to improved project performance in complex and dynamic settings.

Despite its contributions, this study has some limitations. The cross-sectional design restricts causal interpretation, and the reliance on self-reported data may introduce bias. In addition, the focus on a single national context may limit generalizability. Future research could adopt longitudinal designs, use multi-source data, and test the model in different contexts to enhance robustness. Overall, this study provides an integrative explanation of how TL influences PS through team and psychological mechanisms, while offering practical guidance for improving project performance in project-based environments.

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References

- Aga, D. A., Noorderhaven, N., & Vallejo, B. (2016). Transformational leadership and project success: The mediating role of team building. *International Journal of Project Management*, 34(5):806–818. <https://doi.org/10.1016/j.ijproman.2016.02.012>
- Ahmad, M. K., Abdulhamid, A. B., Wahab, S. A., et al. (2023). Can the Project Manager's Transformational Leadership Lead to Project Success? Empowerment, Goal Clarity, and CR Leadership. *International Journal of Information Technology Project Management*, 14(1), 1–21. <https://doi.org/10.4018/ijitpm.323206>
- Ahmad, M. K., Abdulhamid, A. B., Wahab, S. A., et al. (2022). Impact of the project manager's transformational leadership, influenced by mediation of self-leadership and moderation of empowerment, on project success. *International Journal of Managing Projects in Business*, 15(5), 842–864. <https://doi.org/10.1108/ijmpb-03-2021-0066>
- Ali, H., Chuanmin, S., Ahmed, M., et al. (2021). Transformational Leadership and Project Success: Serial Mediation of Team-Building and Teamwork. *Frontiers in Psychology*, 12. <https://doi.org/10.3389/fpsyg.2021.689311>
- Ali, M., Li, Z., Khan, S., et al. (2020). Linking humble leadership and project success: the moderating role of top management support with mediation of team-building. *International Journal of Managing Projects in Business*, 14(3), 545–562. <https://doi.org/10.1108/ijmpb-01-2020-0032>
- Avolio, B. J., Gardner, W. L., Walumbwa, F. O., et al. (2004). Unlocking the mask: a look at the process by which authentic leaders impact follower attitudes and behaviors. *The Leadership Quarterly*, 15(6), 801–823. <https://doi.org/10.1016/j.leaqua.2004.09.003>
- Bass, B. M., & Riggio, R. E. (2006). *Transformational Leadership*. New York, NY, USA: Psychology Press. <https://doi.org/10.4324/9781410617095>
- Braun, S., Peus, C., Weisweiler, S., et al. (2013). Transformational leadership, job satisfaction, and team performance: A multilevel mediation model of trust. *The Leadership Quarterly*, 24(1), 270–283. <https://doi.org/10.1016/j.leaqua.2012.11.006>
- Carvalho, M. M., & Rabechini, R. (2017). Can project sustainability management impact project success? An empirical study applying a contingent approach. *International Journal of Project Management*, 35(6), 1120–1132. <https://doi.org/10.1016/j.ijproman.2017.02.018>
- Deci, E., & Ryan, R. (2000). The “what” and “why” of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01
- Ebbesen, J. B., & Hope, A. (2013). Re-imagining the iron triangle: Embedding sustainability into project constraints. *PM World Journal*, 2(3), 1–13.
- Fareed, M. Z., Su, Q., Almutairi, M., et al. (2022). Transformational leadership and project success: The mediating role of trust and job satisfaction. *Frontiers in Psychology*, 13, 954052. <https://doi.org/10.3389/fpsyg.2022.954052>
- Fareed, M. Z., Su, Q., & Aslam, M. U. (2023). Transformational Leadership and Project Success: The Mediating Role of Psychological Empowerment. *Sage Open*, 13(1):21582440231154796. <https://doi.org/10.1177/21582440231154796>
- Groselj, M., Cerne, M., Penger, S., et al. (2020). Authentic and transformational leadership and innovative work behaviour: The moderating role of psychological empowerment. *European Journal of Innovation Management*, 24(3), 677–706. <https://doi.org/10.1108/EJIM-10-2019-0294>
- Hair, J. F., Black, W. C., Babin, B. J., et al. (2019). *Multivariate data analysis*. Beijing, China: Cengage Learning.
- Hobfoll, S. E. (2011). Conservation of resources theory: Its implication for stress, health, and resilience. In: *The Oxford handbook of stress, health, and coping*. Oxford, UK: Oxford University Press. pp. 127–147.
- Khan, J., Malik, M., & Saleem, S. (2020). The impact of psychological empowerment of project-oriented employees on project success: A moderated mediation model. *Economic Research-Ekonomska Istraživanja*, 33(1), 1311–1329. <https://doi.org/10.1080/1331677X.2020.1756374>
- Khan, N. U., Zhongyi, P., Han, H., et al. (2023). Linking public leadership and public project success: The mediating role of team building. *Humanities and Social Sciences Communications*, 10(1), 1–10. <https://doi.org/10.1057/s41599-023-01791-y>

- Khattak, S. I., Ali, M. I., Khan, M. A., et al. (2024). Amplifying IT project success ratio: The role of transformational leadership, proactive behavior, and psychological empowerment. *Engineering Economics*, 35(3), 316–327. <https://doi.org/10.5755/j01.ee.35.3.33394>
- Khattak, S. I., Rizvi, T. H., & Khan, M. A. (2022). Unwrapping software projects success in Asia: Assessing the role of authentic leadership, psychological empowerment, and job engagement in project success using a serial-mediation approach. *Sage Open*, 12(2), 21582440221097918. <https://doi.org/10.1177/21582440221097918>
- Klein, C., DiazGranados, D., Salas, E., et al. (2009). Does team building work? *Small Group Research*, 40(2), 181–222. <https://doi.org/10.1177/1046496408328821>
- Maqbool, R., Sudong, Y., Manzoor, N., et al. (2017). The impact of emotional intelligence, project managers' competencies, and transformational leadership on project success: An empirical perspective. *Project Management Journal*, 48(3), 58–75. <https://doi.org/10.1177/875697281704800304>
- Mariam, S., Khawaja, K. F., Qaisar, M. N., et al. (2022). Knowledge-oriented leadership, team cohesion, and project success: A conditional mechanism. *Project Management Journal*, 53(2), 128–145. <https://doi.org/10.1177/87569728211063128>
- Martens, M. L., & de Carvalho, M. M. (2014). A conceptual framework of sustainability in project management. Newtown Square, PA, USA: Project Management Institute.
- Nauman, S., Khan, A. M., & Ehsan, N. (2010). Patterns of empowerment and leadership style in project environment. *International Journal of Project Management*, 28(7), 638–649. <https://doi.org/10.1016/j.ijproman.2009.11.013>
- Nauman, S., Musawir, A. U., Munir, H., et al. (2022). Enhancing the impact of transformational leadership and team building on project success: The moderating role of empowerment climate. *International Journal of Managing Projects in Business*, 15(2), 423–447. <https://doi.org/10.1108/IJMPB-02-2021-0031>
- PMI. (2018). Success in disruptive times. Expanding the value delivery landscape to address the high cost of low performance (Pulse of the Profession®). Newtown Square, PA, USA: Project Management Institute.
- Raziq, M. M., Borini, F. M., Malik, O. F., et al. (2018). Leadership styles, goal clarity, and project success: Evidence from project-based organizations in Pakistan. *Leadership and Organization Development Journal*, 39(2), 309–323. <https://doi.org/10.1108/LODJ-07-2017-0212>
- Rodriguez, A. N. (2021). Harvard business review project management handbook: How to launch, lead, and sponsor successful projects. Brighton, MA, USA: Harvard Business Press.
- Saira, S., Mansoor, S., & Ali, M. (2021). Transformational leadership and employee outcomes: The mediating role of psychological empowerment. *Leadership & Organization Development Journal*, 42(1), 130–143. <https://doi.org/10.1108/LODJ-05-2020-0189>
- Salas, E., Rozell, D., Mullen, B., et al. (1999). The effect of team building on performance: An integration. *Small Group Research*, 30(3), 309–329. <https://doi.org/10.1177/104649649903000303>
- Seibert, S. E., Wang, G., & Courtright, S. H. (2011). Antecedents and consequences of psychological and team empowerment in organizations: A meta-analytic review. *Journal of Applied Psychology*, 96(5), 981–1003. <https://doi.org/10.1037/a0022676>
- Spreitzer, G. M. (1995). Psychological empowerment in the workplace: Dimensions, measurement, and validation. *Academy of Management Journal*, 38(5), 1442–1465. <https://doi.org/10.2307/256865>
- Turner, J. R., & Müller, R. (2005). The project manager's leadership style as a success factor on projects: A literature review. *Project Management Journal*, 36(2), 49–61. <https://doi.org/10.1177/875697280503600206>
- Zaman, U., Nawaz, S., Tariq, S., et al. (2019). Linking transformational leadership and “multi-dimensions” of project success: Moderating effects of project flexibility and project visibility using PLS-SEM. *International Journal of Managing Projects in Business*, 13(1), 103–127. <https://doi.org/10.1108/IJMPB-10-2018-0210>
- Zavari, M., & Afshar, M. R. (2023). The role of site manager transformational leadership in the construction project success. *International Journal of Building Pathology and Adaptation*, 41(5), 1067–1085. <https://doi.org/10.1108/IJBPA-07-2021-0094>