



E-ISSN: 3108-4176

APSSHS

Academic Publications of Social Sciences and Humanities Studies

2023, Volume 4, Page No: 108-123

Available online at: <https://apsshs.com/>

Annals of Organizational Culture, Leadership and External Engagement Journal

The Positive and Negative Impacts of Humble Leadership on Project Success: Insights from the Conservation of Resources Theory

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Abstract

Grounded in the conservation of resources theory, this research investigates both the beneficial and detrimental aspects of humble leadership by assessing how project commitment and workplace deviance mediate its relationship with project success. Using data obtained from 315 IT professionals, the proposed hypotheses were evaluated through partial least squares structural equation modeling (PLS-SEM). The results demonstrate that humble leadership enhances project success indirectly through the mediating influence of project commitment, whereas workplace deviance fails to serve as a mediator in this relationship. Overall, the study enriches emerging scholarship by emphasizing humble leadership as a valuable approach for achieving project success.

Keywords: Project success, Humble leadership, Project commitment, Workplace deviance

How to cite this article: Sultangazy A, Tilek N. The Positive and Negative Impacts of Humble Leadership on Project Success: Insights from the Conservation of Resources Theory. *Ann Organ Cult Leadersh Extern Engagem J.* 2023;4:108-23. <https://doi.org/10.51847/AZROPFUK6f>

Received: 12 January 2023; **Revised:** 27 March 2023; **Accepted:** 08 April 2023

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Introduction

Project success has long been a central topic of debate in project management research. Traditionally, success was defined by a project's completion according to predetermined objectives—such as meeting scheduled deadlines, budgets, and scope—but later studies revealed that projects could still fail despite adhering to these criteria [1]. Over the past few decades, scholars have identified numerous qualitative elements that play vital roles in determining project outcomes [2, 3]. A notable limitation in this body of research, however, is the insufficient emphasis placed on project managers' leadership behaviors and their impact on project performance [4]. Many studies have underscored that the leadership role of project managers is indispensable for ensuring project success [5], with leadership consistently recognized as one of the key determinants of project performance [6, 7].

Building on this understanding, contemporary research has begun to explore how different leadership styles—such as shared, servant, and empowering leadership—affect project outcomes [8-11]. Among these, humble leadership has recently received growing attention across organizational contexts [12-15]. Argandona [16] emphasized the importance of understanding how humble leadership translates into desired results. Despite Brière *et al.* [17] identifying humility as one of the most essential traits for project managers, empirical evidence examining the link between humble leadership and project success remains scarce [18].

Extensive research has examined how humble leadership influences a range of psychological and behavioral factors, including psychological empowerment [19], team potency [20], workplace spirituality [21], altruism [22], deep acting behavior [23], goal clarity, team cohesion, and innovative work behavior [18]. Nevertheless, limited attention has been devoted to employees' project commitment under humble leaders. Humble leadership, a bottom-up approach, is defined by self-awareness, appreciation of employees' efforts, guidance and mentoring, openness to feedback, and receptiveness to new ideas [24]. Such



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characteristics influence employees' psychological states, enhancing their sense of loyalty and commitment [18]. Since projects often involve novel outcomes, they require participants to adopt creative and adaptive practices [25]. In this context, humble leaders play an important role in cultivating responsibility, aligning employees with project goals, and fostering commitment to achieving them.

However, Mallén *et al.* [22] highlighted that the potential downsides of humble leadership have not been sufficiently explored. While humility in leadership may generate positive results, it can also produce unintended negative consequences [18]. Prior scholars have suggested that leader humility might trigger adverse behaviors, such as workplace deviance, which could undermine project quality and outcomes [18, 26, 27]. Addressing this research gap, the current study empirically examines how project commitment and workplace deviance mediate the relationship between humble leadership and project success. The study's novelty lies in its dual perspective, empirically analyzing both the constructive and adverse effects of humble leadership within project settings.

Theoretical exposition

This study proposes and empirically tests a conceptual framework connecting humble leadership with project success, with project commitment and workplace deviance as mediating factors. The framework is grounded in the Conservation of Resources (COR) theory [28], which views leaders as valuable organizational resources. According to Hobfoll [29], resources encompass personal attributes or assets that individuals value. Arnold (2017) further emphasized that leadership functions as a resource that promotes followers' personal and professional development. COR theory posits that individuals strive to acquire, safeguard, and sustain their resources [30], and leaders' traits and abilities serve as resources that drive organizational growth through employee development, ultimately enhancing project success. Leaders who embody ethical or servant-like behaviors tend to foster employee satisfaction and growth [31, 32]. In this light, humility serves as a critical resource for project managers, motivating team members to work diligently toward successful project completion [18].

Moreover, COR theory conceptualizes stress as a function of resource depletion and management, emphasizing that resource loss is more damaging than resource gain [33]. Within this study's framework, humble leadership may inadvertently contribute to workplace deviance—an outcome associated with stress and frustration. Such deviant behaviors can impede goal attainment, lower project quality, and potentially lead to project failure, generating stress for both leaders and organizations.

Literature review

Humble leadership

Humble leadership represents an interpersonal quality that enables project managers to engage effectively with their subordinates. It is characterized by three central attributes: accurate self-assessment, openness to feedback and new ideas, and appreciation of others' strengths [34]. Additionally, humble leaders demonstrate a strong moral character [35]. Earlier research identifies humble leadership as a personal behavioral trait that allows leaders to evaluate subordinates impartially, maintaining a balanced, authentic, and non-defensive self-view [36]. Such leaders cultivate a supportive atmosphere in which employees feel comfortable voicing concerns [37]. They encourage creativity and collaboration by welcoming new ideas and valuing employee contributions [38]. Furthermore, humble leaders display respect and warmth toward their subordinates [39] and actively seek input from them to minimize hierarchical barriers [40].

Project success

Project success refers to the completion of project objectives within the defined scope, budget, and timeframe [41]. A project is considered successful when it fulfills the expectations of end-users and satisfies key stakeholders [42]. Müller and Turner [43] emphasized that stakeholder satisfaction and client approval of the project's deliverables within the allocated budget are critical indicators of success. According to PMI [44], project success encompasses two dimensions: (1) adherence to time, scope, budget, and schedule, and (2) stakeholder satisfaction. As highlighted by Aga *et al.* [8], success factors play a vital role for organizations because they not only ensure customer and stakeholder contentment but also enhance the firm's competitive and marketing position.

Project commitment

The concept of project commitment originates from organizational commitment, which describes the emotional and psychological attachment between employees and their organization [45]. Becker [46] characterized this commitment as an emotional connection influenced by non-economic factors. In management literature, employees who develop commitment toward an organization create a psychological attachment that fosters a sense of belonging beyond material rewards [47, 48]. McDonough [49] defined commitment as an individual's sense of obligation and willingness to contribute to the project's goals and success. In this context, project commitment refers to employees' recognition of their responsibilities and alignment with project objectives, motivating them to work diligently toward achieving them [50, 51]. It can be understood through three

dimensions—identification, involvement, and devotion—where employees not only perform their assigned tasks but also take pride in being part of the project [52].

Workplace deviance

Workplace deviance refers to behaviors by employees that violate organizational norms and expectations [53]. Such behaviors may include property damage, tardiness, insubordination, unethical acts, or disrespect toward leaders [54, 55]. When employees engage in deviant actions, they neglect assigned duties, exhibit hostility, and may even commit acts like theft [56]. Deviance can occur at both the individual and organizational levels, often resulting in substantial financial losses for firms [57]. Previous research estimated that employee deviance costs the U.S. economy billions of dollars annually, with this figure continuing to rise over time [58].

Humble leadership and project success

Leadership characteristics have a strong influence on project performance and productivity [59-61]. Supportive leaders encourage collaboration among subordinates, promote knowledge sharing, and guide their teams toward achieving project objectives [62, 63]. Effective leaders communicate goals clearly, which enhances efficiency and alignment within teams [64]. Numerous studies have demonstrated that leadership style significantly impacts project outcomes [65-67], with humble leadership—marked by self-awareness and appreciation of others—being particularly beneficial for project effectiveness [5, 17].

Humble leaders help subordinates reach their full potential both individually and collectively [16] and demonstrate empathy by recognizing and addressing employees' unique needs [68]. Comparable to servant leadership, humble leadership fosters strong leader–follower relationships and enhances social connectedness and personal capital among employees [32, 69, 70]. Moreover, humble leaders strengthen teamwork by improving communication, cohesion, and conflict resolution [12, 71]. They empower employees, granting them autonomy and valuing their input, which instills a sense of importance and motivates them to work diligently toward project goals [18].

H1: Humble leadership has a significant positive effect on project success.

Humble leadership and project commitment

A leader's style reflects their personality and greatly influences employees' psychological well-being. Humble leadership is characterized by collaboration, openness, and willingness to listen to employees' ideas and integrate them into decision-making [26]. This inclusive approach creates a comfortable environment where employees feel respected and empowered. Humble leaders value the efforts and contributions of their subordinates, offering mentorship and guidance to help them grow, which in turn enhances their self-esteem and motivation [24]. Because humble leadership emphasizes transparency, fairness, and inclusivity, employees develop a sense of security and belonging [18]. By actively considering employee feedback, humble leaders foster loyalty and commitment to organizational and project objectives [72].

McDonough [49] identified employee commitment as one of the most essential elements for project success. Top management must ensure that project leaders and employees maintain satisfaction, trust, and faith in the project and organization, especially under complex conditions [73]. Research by Dinc and Nurovic [74] confirmed a strong positive correlation between leadership style and employee attitude. Additionally, humble leaders often display strong moral integrity [35], which cultivates employee commitment [75]. Their trustworthiness strengthens team cohesion and collective goal achievement [76].

H2: Humble leadership has a significant positive influence on project commitment.

Project commitment and project success

Existing literature underscores that effective communication and engagement among project team members are crucial to achieving project success [77]. When project objectives are clearly defined and realistic success criteria are established, it enhances confidence among management and stakeholders, facilitating successful outcomes [78]. Employee performance is closely linked to affective commitment, as emotionally committed workers are more likely to contribute positively to project and organizational performance [79].

A committed team and leader can improve members' understanding of project goals, roles, teamwork, and problem-solving abilities, all of which enhance project success [8]. Gelbard and Carmeli [80] also emphasized that organizational support strengthens project commitment, ensuring smooth completion. Similarly, employees' dedication to both the project and the organization is vital for timely and effective project delivery [81]. Thus, high levels of project commitment are essential for meeting objectives and ensuring overall project success [25].

H3: Project commitment has a significant positive impact on project success.

Mediation of project commitment

Leaders' behavior plays a crucial role in shaping and inspiring employees' dedication toward both the organization and its projects, thereby facilitating the successful completion of project goals. Previous research suggests that a leader's style not only boosts employee performance and project efficiency but also enhances the relational bond between leaders and subordinates [82]. Turner and Müller [67] emphasized that project success depends largely on the satisfaction and commitment of team members toward management. Since a project represents a network of mutual commitments, collective dedication is essential to prevent project failure [83]. Additionally, leadership style has been positively associated with employees' job satisfaction and commitment [84], while employee commitment has been shown to significantly improve individual performance [85]. When employees maintain a positive outlook toward their project, they tend to work more effectively, which in turn contributes to overall project achievement. Rose [86] found that leadership, motivation, and commitment jointly determine project success, whereas Dwivedula *et al.* [81] highlighted that the level of employee commitment reflects the adequacy of their performance for achieving project objectives. Similarly, Brinkhoff *et al.* [87] argued that managers should prioritize fostering project commitment among employees to ensure favorable project outcomes.

H4: Project commitment mediates the relationship between humble leadership and project success.

Humble leadership and workplace deviance

Humility is an integral component of leadership style [88]. While humility is generally seen as a desirable leadership quality, excessive humility may undermine confidence in a leader's abilities, reducing employee engagement and trust [89]. When leaders frequently highlight their own weaknesses, subordinates might question their competence, resulting in decreased motivation and work involvement [64, 90]. Although humility typically fosters positive outcomes for followers [14], organizations [12], and teams [64], emerging research has begun to address its potential downsides. Specifically, when employees perceive a leader's humility as manipulative or self-serving, they may experience heightened psychological empowerment that could manifest as deviant workplace behavior [91].

H5: Humble leadership has a significant impact on workplace deviance.

Workplace deviance and project success

Research indicates that project managers often face difficulties due to various risks, including employee stress related to risk identification and assessment [92]. Such challenges can diminish managerial attention, negatively affecting project performance and potentially leading to project failure [93]. Since projects are inherently complex, managers must continually align project outcomes with stakeholder expectations, which are closely tied to project success [94]. The criteria defining project success differ among projects but generally involve performance-related measures [95]. Employee deviant behavior can disrupt both the social and psychological climate of project teams, adversely affecting team performance [96]. Individuals engaging in workplace deviance often perceive the organization as obstructing their personal interests [97]. The issue has gained increasing attention in recent years due to its detrimental impact on organizational performance and well-being [97-99]. Workplace deviance not only causes psychological and financial harm but also undermines effectiveness at all organizational levels [100, 101]. When deviant behavior becomes widespread, managerial directives may lose authority, elevating the risk of project failure [94]. Studies have further identified workplace deviance as a major determinant of project underperformance or failure [55]. High levels of such behavior correlate with lower job satisfaction and an increased likelihood of project failure [102].

H6: Workplace deviance has a significant negative effect on project success.

Mediation of workplace deviance

Workplace deviance—whether individual or organizational—imposes substantial costs on organizations, severely affecting their overall functioning [57, 103]. Recent studies have identified a potential dark side to leader humility [104, 105]. When subordinates misinterpret a leader's humility as self-serving, they may develop a sense of entitlement, leading to counterproductive or deviant behaviors [91]. Thus, humility does not always yield favorable outcomes. Projects are inherently complex and often unpredictable, requiring subordinates to rely on leaders for clarity and direction amid uncertainty [106, 107]. Although humble leaders openly acknowledge their limitations, seek feedback, and encourage shared growth [35, 108], doing so can sometimes diminish their perceived authority and control. Consequently, subordinates may doubt their leader's capability, increasing the risk of workplace deviance and jeopardizing project objectives. Such dynamics can ultimately impair project quality and success. **Figure 1** illustrates the conceptual framework of this study.

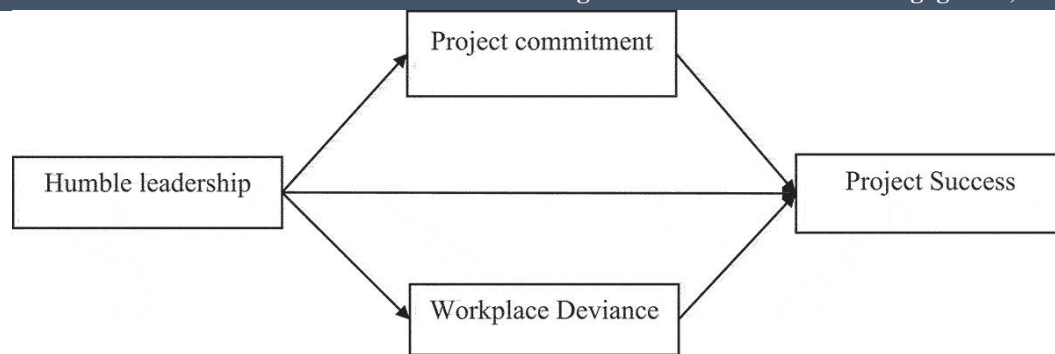


Figure 1. Research Framework.

H7: Workplace deviance mediates the relationship between humble leadership and project success.

Materials and Methods

Sampling and data collection

To evaluate the proposed hypotheses, a survey-based approach was adopted to gather data from IT sector employees located in Pakistan's Twin Cities, Rawalpindi and Islamabad. Data were collected using a self-administered questionnaire distributed through a non-probability convenience sampling technique. Out of 450 questionnaires distributed, 330 were returned, of which 315 were deemed valid, resulting in an effective response rate of 70%.

The questionnaire consisted of two main sections: the first section gathered demographic information about the respondents, while the second section contained items measuring the study variables—humble leadership, project commitment, workplace deviance, and project success. The Statistical Package for the Social Sciences (SPSS) software was used for data analysis. Descriptive statistics were employed to summarize demographic data, and correlation and regression analyses were conducted to examine relationships among variables.

The demographic results indicated that 242 of the 315 respondents were male (76.8%). The majority (177 employees, 56.2%) were aged between 21 and 30 years, followed by 79 (25.1%) aged 31–40 years, 35 (11.1%) aged 41–50 years, and 24 (7.6%) aged 51 years or older. Regarding education, most participants (182, 57.8%) held a postgraduate degree. In terms of work experience, 112 respondents (35.6%) had between one and three years of professional experience.

Measurement scale

All variables were measured using validated instruments from prior studies, rated on a five-point Likert scale ranging from 1 (“strongly disagree”) to 5 (“strongly agree”).

Humble leadership

Humble leadership was assessed using a nine-item scale developed by Owens *et al.* [34]. An example statement includes, “My leader is open to the advice of others.”

Project success

Project success was measured using a fourteen-item scale adapted from Aga *et al.* [8]. A representative item states, “The outcomes of the project have directly benefitted the intended end-users, either through increased efficiency or effectiveness.”

Project commitment

Project commitment was evaluated using a five-item scale from Hoegl *et al.* [50], such as, “I feel a strong sense of responsibility to achieve the project goals.”

Workplace deviance

Workplace deviance was measured using a nineteen-item scale from Bennett and Robinson [54]. A sample statement includes, “I have falsified a receipt to get reimbursed for more money than I have spent on business expenses.”

Results and Discussion

SPSS version 27 and SmartPLS 4.0 were utilized for statistical analysis. SPSS was applied to perform descriptive analysis, while SmartPLS was used to assess the hypothesized relationships through Partial Least Squares Structural Equation Modeling (PLS-SEM).

Descriptive statistics and correlation

Table 1 presents the descriptive statistics of the study's main constructs—humble leadership, project commitment, workplace deviance, and project success—showing their mean, standard deviation, skewness, kurtosis, and Pearson correlation coefficients. Results reveal a significant positive correlation between humble leadership and project success ($r = .461, p = .00$). Similarly, humble leadership was positively associated with project commitment ($r = .480, p = .00$), and project commitment was significantly correlated with project success ($r = .518, p = .00$). Conversely, the correlation between humble leadership and workplace deviance was insignificant ($r = -.10, p > .05$), while workplace deviance was negatively and significantly correlated with project success ($r = -.233, p = .00$).

Table 1. Descriptive statistics and correlations

Construct	Mean	Standard deviation	Skewness	Kurtosis	1	2	3	4
HL	3.92	0.76	-0.78	0.802	1			
PC	4.31	0.63	-1.291	2.946	.480**	1		
WPD	1.74	0.82	1.772	2.899	-0.1	-.285**	1	
PS	4.11	0.60	-0.695	1.279	.461**	.518**	-.233**	1

N = 315, ** $p < .01$, HL: Humble leadership, PC: Project Commitment, WPD: Workplace Deviance, PS: Project success.

PLS analysis

The study's research framework was evaluated using Partial Least Squares Structural Equation Modeling (PLS-SEM). SmartPLS 4 software was employed for both the measurement and structural model analyses. The PLS-SEM procedure involves a two-step process: the first step assesses the measurement model (outer model), which defines the relationship between observed indicators and their corresponding latent constructs, while the second step examines the structural model (inner model) to evaluate the hypothesized relationships among the study variables [109].

Measurement model

A composite measurement model with a first-order reflective design was utilized to measure the constructs in this research. The assessment of the measurement model included tests for individual item reliability, construct reliability, convergent validity, and discriminant validity. To determine individual item reliability, factor loadings of the indicators were analyzed. In reflective models, factor loadings represent the estimated strength of the relationship between an indicator and its underlying construct [110].

Following the guidelines provided by Hair *et al.* [111], the results demonstrated that the majority of the factor loadings exceeded the recommended threshold of 0.70, while a few items had loadings slightly above 0.55, which are still considered acceptable according to Falk and Miller [112]. The detailed factor loading values for each construct are presented in **Table 2** below.

Table 2. Measurement model: convergent validity and reliability

Variables	Items	Loadings	AVE	CR	Cronbach's Alpha
	HL1	0.667			
	HL2	0.714			
	HL3	0.728			
	HL4	0.756			
HL	HL5	0.688	0.560	0.919	0.901
	HL6	0.793			
	HL7	0.800			
	HL8	0.764			
	HL9	0.809			
	PC1	0.811			
	PC2	0.825			
PC	PC3	0.815	0.583	0.873	0.817
	PC4	0.572			
	PC5	0.765			
	PS1	0.571			
	PS10	0.800			
	PS11	0.782			
	PS12	0.765			
	PS13	0.795			
	PS14	0.766			
	PS2	0.643			

Sultangazy and Tilek		Ann Organ Cult Leadersh Extern Engagem J, 2023,4:108-123			
PS	PS3	0.742	0.527	0.939	0.930
	PS4	0.723			
	PS5	0.692			
	PS6	0.800			
	PS7	0.683			
	PS8	0.737			
	PS9	0.619			
	WPD1	0.726			
	WPD10	0.790			
	WPD11	0.792			
	WPD12	0.722			
	WPD13	0.816			
	WPD14	0.757			
	WPD15	0.745			
	WPD16	0.804			
	WPD17	0.684			
WPD	WPD18	0.760	0.563	0.961	0.957
	WPD19	0.856			
	WPD2	0.682			
	WPD3	0.656			
	WPD4	0.773			
	WPD5	0.716			
	WPD6	0.681			
	WPD7	0.819			
	WPD8	0.649			
	WPD9	0.791			

To further ensure the reliability of the constructs, Composite Reliability (CR) and Cronbach's Alpha (CA) were computed. As shown in **Table 2**, all constructs in the model demonstrated satisfactory reliability, with both CR and CA values exceeding the recommended threshold of 0.70, indicating internal consistency among the measurement items. Similarly, convergent validity was examined using the Average Variance Extracted (AVE). All constructs displayed AVE values above 0.50, signifying that at least 50% of the variance in the indicators was explained by their corresponding latent construct [113]. Furthermore, discriminant validity was assessed to confirm that each construct was conceptually distinct from the others within the model [114]. Discriminant validity was evaluated using three approaches: the Fornell–Larcker criterion, cross-loadings, and the Heterotrait–Monotrait ratio (HTMT). Initially, the Fornell–Larcker criterion was applied, which requires that the square root of the AVE for each construct be greater than its correlations with other constructs [114]. As presented in **Table 3**, the diagonal elements (representing the square roots of AVE) were all higher than the corresponding inter-construct correlation coefficients below the diagonal, confirming that discriminant validity was successfully established.

Table 3. Discriminant validity (Fornell and Larker method)

Construct	HL	PC	PS	WPD
HL	0.748			
PC	0.502	.764		
PS	0.471	.522	.726	
WPD	-0.114	-.299	-.252	.751

Secondly, the cross-loading method was employed to further verify discriminant validity. According to this approach, the outer loading of each indicator on its associated construct should be greater than its loadings on any other constructs. As indicated in **Table 3**, each item demonstrated a higher loading on its respective construct than on others, confirming that discriminant validity was achieved through this method.

In addition, the Heterotrait–Monotrait Ratio (HTMT) was applied as a third test to evaluate discriminant validity. Following the guidelines of Benitez *et al.* [115], the HTMT values for all construct pairs should remain below 0.85 to ensure adequate discriminant separation among constructs. As shown in **Table 5**, all HTMT ratios were below this threshold, providing additional confirmation that discriminant validity was well established. The overall results of discriminant validity for the study constructs are summarized in **Table 4**.

Table 4. Discriminant validity (cross Loadings)

	HL	PC	PS	WPD
HL1	0.667	.407	.393	-.115

Sultangazy and Tilek	Ann Organ Cult Leadersh Extern Engagem J, 2023,4:108-123			
HL2	0.714	.276	.324	-.027
HL3	0.728	.288	.228	-.043
HL4	0.756	.387	.357	-.084
HL5	0.688	.329	.340	-.048
HL6	0.793	.410	.360	-.084
HL7	0.800	.378	.390	-.055
HL8	0.764	.381	.300	-.090
HL9	0.809	.458	.416	-.175
PC1	0.439	.811	.438	-.240
PC2	0.395	.825	.419	-.259
PC3	0.437	.815	.425	-.261
PC4	0.269	.572	.338	-.100
PC5	0.349	.765	.362	-.259
PS1	0.284	.273	.570	-.077
PS10	0.328	.442	.801	-.251
PS11	0.294	.411	.782	-.164
PS12	0.306	.395	.765	-.227
PS13	0.321	.440	.795	-.264
PS14	0.346	.412	.765	-.146
PS2	0.293	.302	.642	-.072
PS3	0.372	.418	.743	-.242
PS4	0.354	.357	.724	-.223
PS5	0.364	.380	.693	-.221
PS6	0.450	.396	.801	-.219
PS7	0.343	.317	.682	-.084
PS8	0.370	.373	.736	-.174
PS9	0.340	.341	.618	-.101
WPD1	0.000	-.234	-.196	.726
WPD10	-0.183	-.265	-.205	.790
WPD11	-0.083	-.231	-.244	.792
WPD12	-0.039	-.215	-.138	.722
WPD13	-0.142	-.252	-.214	.816
WPD14	-0.127	-.249	-.153	.757
WPD15	-0.110	-.204	-.126	.745
WPD16	-0.060	-.283	-.164	.804
WPD17	-0.025	-.209	-.150	.684
WPD18	-0.091	-.194	-.149	.760
WPD19	-0.066	-.244	-.211	.856
WPD2	-0.058	-.240	-.191	.682
WPD3	-0.124	-.153	-.153	.656
WPD4	-0.028	-.248	-.155	.773
WPD5	-0.125	-.174	-.188	.715
WPD6	-0.077	-.182	-.194	.681
WPD7	-0.064	-.219	-.238	.819
WPD8	-0.044	-.180	-.123	.649
WPD9	-0.089	-.269	-.269	.791

HL: Humble leadership, PC: Project Commitment, WPD: Workplace Deviance, PS: Project Success.

Table 5. Discriminant validity (HTMT)

	HL	PC	PS	WPD
HL				
PC	0.570			
PS	0.505	.596		
WPD	0.125	.332	.252	

Structural model

Once the psychometric properties of the measurement model were confirmed, the next step involved the assessment of the structural model. This evaluation focused on examining the significance and strength of the path coefficients to test the hypothesized relationships among the constructs. To determine the statistical significance of these relationships, a

bootstrapping procedure with 5,000 resamples was performed, following the recommended approach for PLS-SEM analysis. The resulting structural relationships and standardized path coefficients are illustrated in **Figure 2**, which presents the structural model of the study.

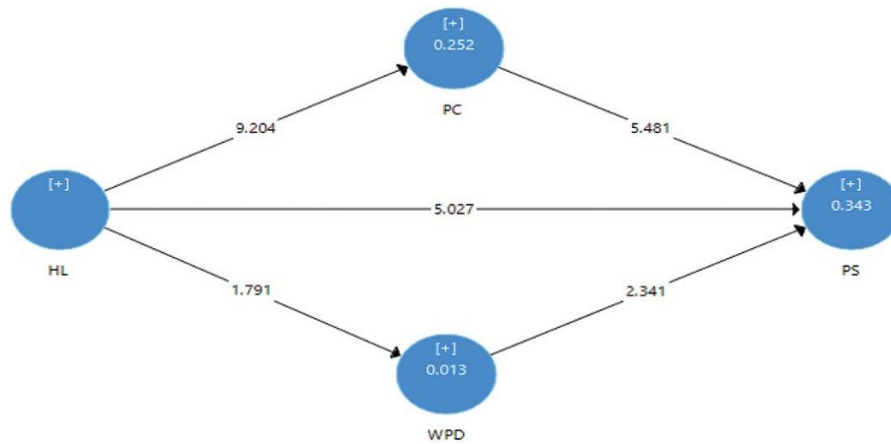


Figure 2. PLS-SEM bootstrapping algorithm

Hypotheses testing results

The results of hypothesis testing are presented in **Table 6**. H1 is supported, showing that humble leadership has a direct and significant positive effect on project success ($\beta = 0.285, t = 5.027, p = 0.000$). Similarly, H2 is confirmed, as humble leadership significantly and positively influences project commitment ($\beta = 0.502, t = 9.204, p = 0.000$). H3 is also supported, indicating that project commitment has a significant positive impact on project success ($\beta = 0.344, t = 5.481, p = 0.000$).

In contrast, the direct effect of humble leadership on workplace deviance (H5) was not statistically significant ($\beta = -0.114, t = 1.791, p = 0.074$), so H5 is not supported. On the other hand, H6 is supported, showing that workplace deviance has a significant negative relationship with project success ($\beta = -0.116, t = 2.341, p = 0.020$).

Table 6. Direct and indirect relationships

Hypotheses	β	SD	t statistics	P values	Confidence intervals		Decision
					2.50%	97.5%	
HL -> PS	0.285	0.057	5.027	0.000	0.379	0.605	Supported
HL -> PC	0.502	0.055	9.204	0.000	0.164	0.392	Supported
PC -> PS	0.344	0.063	5.481	0.000	0.215	0.47	Supported
HL -> PC -> PS	0.173	0.041	4.224	0.000	0.102	0.268	Supported
HL -> WPD	-0.114	0.064	1.791	0.074	-0.224	0.029	Not supported
WPD -> PS	-0.116	0.049	2.341	0.020	-0.209	-0.016	Supported
HL -> WPD -> PS	0.013	0.011	1.149	0.251	-0.002	0.041	Not supported

The primary focus of this study was to investigate how project commitment and workplace deviance behavior mediate the relationship between humble leadership and project success. The findings support H4 ($\beta = .173, t = 4.224, p = 0.000$), confirming that project commitment mediates the link between humble leadership and project success. Conversely, the results for H7 ($\beta = .013, t = 1.149, p = 0.251$) do not align with the proposed hypothesis, indicating that workplace deviance does not significantly mediate this relationship, and thus H7 is not supported. Moreover, the model's coefficient of determination (R^2) shown in **Figure 2** is 0.343, suggesting that humble leadership, together with project commitment and workplace deviance, accounts for a 34.4% variance in project success.

Summary of findings

Grounded in the conservation of resources theory, this study empirically explored how humble leadership relates to project success. The results supported several hypotheses, demonstrating that all examined variables had meaningful effects on project outcomes. Specifically, humble leadership was positively and significantly associated with project success, indicating that humility is a crucial quality for project managers aiming to achieve successful project outcomes [12, 18].

From a positive perspective, humble leadership was found to significantly enhance project commitment [12], aligning with prior research showing that humble leaders recognize employees' contributions, value their efforts, and provide guidance where needed, thereby boosting employees' sense of self-worth and motivating greater organizational contributions [24].

Additionally, Hypothesis 3 results confirmed that higher levels of project commitment positively influence project success, corroborating earlier findings that employees' dedication to a project is directly linked to their effectiveness in achieving

project goals [81]. Similarly, Hypothesis 4 indicated that humble leadership fosters psychological empowerment among team members by granting them greater autonomy, which in turn enhances their motivation, commitment, and drive to achieve project objectives [26, 116]. Consequently, project commitment serves as a significant mediator between humble leadership and project success.

However, the potential “dark side” of humble leadership was not supported. The findings suggest that humble leadership does not have a significant effect on workplace deviance. One explanation is that when employees perceive a supportive environment where their opinions are valued, they are motivated to perform diligently rather than engage in deviant behaviors. Humble leadership, akin to servant leadership, prioritizes the development and well-being of subordinates, fostering their growth and success [117, 118]. Furthermore, as humble leadership aligns with ethical leadership, it tends to promote positive behaviors, while deviant behavior remains a negative outcome [119-121]. Thus, consistent with prior literature on servant leadership and its limited effect on deviant behaviors [122], this study found no significant relationship between humble leadership and workplace deviance.

It is also notable that data were collected from the IT sector. Previous research on employee counterproductive behavior focused on the banking sector [108], where employees often face role overload, role conflict [123], personal challenges [124], and work-life imbalance [125], all of which can negatively affect performance. In contrast, IT professionals typically enjoy flexible working hours and clearly defined responsibilities, contributing to higher engagement, commitment, and a better balance between work and personal life, which positively shapes their attitudes and work performance [126].

The results for Hypothesis 6 supported the expected outcome, showing that pervasive workplace deviance can increase the likelihood of project failure if managerial interventions are absent. Such deviant behaviors reduce job satisfaction and negatively impact project outcomes, organizational goals, and customer satisfaction [55, 102, 127].

Finally, Hypothesis 7 demonstrated that workplace deviance does not significantly mediate the link between humble leadership and project success. IT sector employees, benefiting from flexible schedules, clear job roles, and work-from-home opportunities, exhibit higher commitment, motivation, and productivity. This work environment fosters a healthy work-life balance, enhancing overall employee performance [126, 128, 129], whereas poor work-life balance and stress are known to reduce productivity and negatively affect subordinate performance [130].

Theoretical contributions

This study offers significant theoretical contributions to the field of project management by examining the influence of humble leadership on project success through the mediating roles of project commitment and workplace deviance. In the context of project management in Pakistan, there is limited research exploring the link between humble leadership as an independent variable and project success as a dependent variable.

The present study introduces and tests novel relationships among these variables. Previous research has not investigated project commitment and workplace deviance as mediators in the relationship between humble leadership and project success. The findings indicate that humble leadership plays a particularly important role in the success of projects within IT firms in the Twin Cities, as it motivates employees to commit to their projects, ultimately enhancing project outcomes. By highlighting how humble leadership fosters employee commitment, this study addresses a critical gap in project management literature regarding factors that drive project success.

Humble leaders motivate their teams by recognizing and valuing their input, which encourages employees to commit to the project in response to supportive leadership behaviors. The results suggest that humility is an essential attribute for project managers seeking successful project completion. Moreover, these findings help bridge a gap identified by earlier scholars, who noted that the role of project managers' leadership in achieving project success had not been sufficiently emphasized in prior research [59, 61].

Practical implications

The study also offers several practical implications. First, the findings underscore the importance of humble leadership in ensuring project success. Since humility can be developed, project managers should receive training to adopt such leadership practices, particularly through action learning methods [131], which can enhance organizational efficiency in project-based settings.

IT firms should prioritize hiring managers who exhibit humility and implement targeted training programs to cultivate this quality in their leaders [14]. Humility is a relational and interpersonal trait; therefore, organizations should foster strong social connections among employees through formal and informal interactions [5].

Several strategies can support the development of humble leadership. Project managers should cultivate a culture of appreciation for their team members, actively listen to their concerns, value their feedback, and take an interest in their ideas and issues. Sharing information, involving employees in decision-making, mentoring, and providing timely positive feedback are all practices that reinforce a supportive environment. When employees perceive that their contributions are valued, their

commitment to the project strengthens, promoting project success. By training leaders to develop humility, organizations can refine project goals and improve the likelihood of achieving successful project outcomes.

Limitations and future recommendations

Like any research, this study has certain limitations. A primary constraint was the lack of time and resources, which resulted in cross-sectional data collection conducted at a single point in time. Future studies could adopt a longitudinal approach, collecting data across multiple periods and from different sources. Using longitudinal methods would help reduce potential biases inherent in cross-sectional designs.

Another limitation is the use of convenience sampling. Due to time constraints, data were gathered from participants who were easily accessible, which limits the generalizability of the findings. Future research should consider probability sampling techniques, which would reduce bias and provide more robust and generalizable insights into the proposed model.

Additionally, the data were collected exclusively from IT firms in Rawalpindi and Islamabad, excluding other industries and regions of Pakistan. This restricts the broader applicability of the results. Future studies could expand to other sectors, such as construction, NGOs, marketing, or advertising, and include participants from different cities in Pakistan or even international contexts.

This study did not examine the potential moderating effect of cultural factors, which may influence project success. Future research should incorporate cultural variables to better understand their impact. Moreover, data were collected at the individual employee level rather than at the team level. Future studies could collect data at the team level within project-based organizations to gain a more comprehensive understanding of group dynamics and project outcomes.

Conclusion

Understanding the factors that drive project performance is crucial for project-based organizations. The findings of this study indicate that humble leadership positively influences project effectiveness in IT firms. Additionally, project commitment was identified as a key factor that enhances project performance, acting as a mediating link between humble leadership and project success. Project-based organizations should focus on cultivating humility among project managers through targeted leadership development programs. At the same time, fostering an organizational culture that promotes employee commitment is essential to achieving project success. Overall, humble leaders prove to be effective because their supportive actions enhance followers' self-esteem, skills, and motivation, ultimately contributing to better project outcomes.

Acknowledgments: None

Conflict of interest: None

Financial support: None

Ethics statement: None

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