

Amplifying IT Project Success Ratio: the Role of Transformational Leadership, Proactive Behavior, and Psychological Empowerment

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This research study investigates the transformational leadership (TFL) and IT project success nexus via the proactive behavior of employees. It further investigates the moderating impact of psychological empowerment (PE) in the nexus between TFL and proactive behavior (PB). The study also tested a moderated mediation model of the effect of TFL on IT project success mediated and moderated by PB and PE, respectively. The researcher collected data from 340 IT project experts in Pakistan through the purposive sampling technique. For data analysis, a multi-level method comprising CFA and SEM was applied. The findings indicated that TFL is significantly linked to IT project success. In addition, findings also confirmed the mediating effect of PB in the relationship between TFL and IT project success. Moreover, PE significantly moderates the relationship between TFL and PB. The results also revealed that PE moderates the indirect effect of TFL on IT project success through PB. Through the lens of self-determination theory, this study contributed to the understanding of how employee proactive behavior can play a significant role in successfully completing technology-oriented projects. In sum, the current study suggests that transformational leaders will be in a better position to encourage their employees to complete projects successfully using proactive behavior, provided their followers are psychologically empowered. The study offers valuable insights for both researchers and practitioners.

Keywords: *Transformational Leadership; Project Success; Proactive Behavior; Psychological Empowerment; Project Management.*

Introduction

Over the last four decades, companies worldwide have invested in IT projects with aspirations of reducing costs and improving capacity to meet business needs. According to a recent study, global IT spending increased in 2022 and is predicted to exceed \$4.5 trillion (Gartner, 2022). A recent Gartner (2022) report predicts that worldwide IT spending will reach USD 588.9 billion in 2023, a 6.8 % rise from 2022. Despite increasing investment and the significance of IT, some studies assert that IT projects face complexity and risk (Lei *et al.*, 2020). In the contemporary business world, many IT projects are plagued with cost and schedule overruns, i.e., only 16 % are completed on time and within the allocated budget, while 31 % are abandoned (Standish, 2021). Accordingly, practitioners and scholars have focused more on

identifying critical factors of success that lead to project completion (Agha *et al.*, 2016; Khan *et al.*, 2020a; Khan *et al.*, 2022; Zaman *et al.*, 2019). Leadership has emerged as one of the most important critical success factors (Ahmad *et al.*, 2022; Khan *et al.* 2020b), as researchers have found that different leadership styles may affect technology-oriented project success (Ali *et al.*, 2021; Khattak *et al.*, 2022). Past research on the relevance, suitability, and effectiveness of specific leadership styles in IT project success has attracted limited academic attention (Fareed *et al.*, 2021; Khan *et al.*, 2020a).

Theoretically, the project management (PM) literature offers several studies on the significance of TFL models in project-based scenarios. Since the PM experts consider the current research insufficient in addressing the high project failure rates (i.e., above eighty percent), they frequently assert

the need for more complex leadership models, combining novel constructs (i.e., mediators, moderators, and antecedents) that ensure project success (Abbas & Ali, 2021; Kabore *et al.*, 2021). In response to the above, this study combines transformational leadership, PB, psychological empowerment, and IT project success into an integrated model.

Transformational leadership holds the potential to effectively steer IT projects to success as a vehicle of change (Abbas & Ali, 2021). This leadership prototype is well-suited for IT project environments, which are more complex in several ways (Lei *et al.*, 2020). For instance, project leaders often struggle to achieve the desired goals and KPIs, given the demographic diversity of team members, the distinctness of required skill sets, and the uniqueness of technologies in each project (Ahmad *et al.*, 2022; Ali *et al.*, 2021). TFLs empower employees through inspiration, motivation and idealized characteristics, incentivizing them through rewards for their creativity and innovation (Diaz-Saenz, 2011). According to Per Watts and Corrie (2022), transformational leaders “inspire their employees to shape their motives, aspirations, values, and goals, aligning personal aspirations with the identity and vision of the organization.” TFLs emphasize motivating and empowering individuals to reach their full potential by fostering a shared sense of purpose and a commitment to collective goals. They inspire their teams through charisma, vision, and a genuine concern for individual growth and development, creating a positive organizational culture where personal and organizational objectives harmoniously coexist. Therefore, organizational innovation relies heavily on TFL as an essential component for accomplishing organizational goals (Kabore *et al.*, 2021).

This study incorporates proactive employee behavior as an intermediary mechanism enabling TFLs to achieve positive outcomes in IT projects. Crant (2000) explains that proactive conduct involves issue prevention, individual invention, and a voice. Proactive employees are vital to delivering more positive job outcomes in the IT industry (Jauhari *et al.*, 2017). Since TFLs are known for developing proactiveness among followers (Steinman *et al.*, 2018), they can help employees address challenges linked to creativity and innovation (Ali *et al.*, 2021; Nauman *et al.*, 2021) and proactiveness in the workplace (Jauhari *et al.*, 2017), which could be vital for project success (Guo *et al.*, 2019).

In the field of IT projects, another critical concern pertains to the role of unknown moderating factors that could affect the TFL and IT project success nexus. Moderators are essential because there is a significant variation between projects and the settings that affect them, and both are evolving continuously (Gemunden *et al.*, 2018). The current study assumes that the link between TFL and employee proactive behavior may be more potent if the employees are psychologically empowered (PE). Employee PE, coupled with the project leader’s style, is pivotal to the success of any project (Ali *et al.*, 2020a; Khattak *et al.*, 2022). A person’s psychological state focuses on competence, purpose, outcome, and self-determination concerning their work (Spreitzer, 1995). Individuals experiencing PE can work more proactively to attain their goals and meet their deadlines (Jauhari *et al.*, 2017). Employees with higher PE are likelier to excel in project-based environments (Ali *et al.*, 2020; Khan *et al.*, 2020). In line with the above argument, this study evaluates the role PE plays in the link between TFL and employees’ proactive behavior. The conceptual model is depicted in Figure 1.

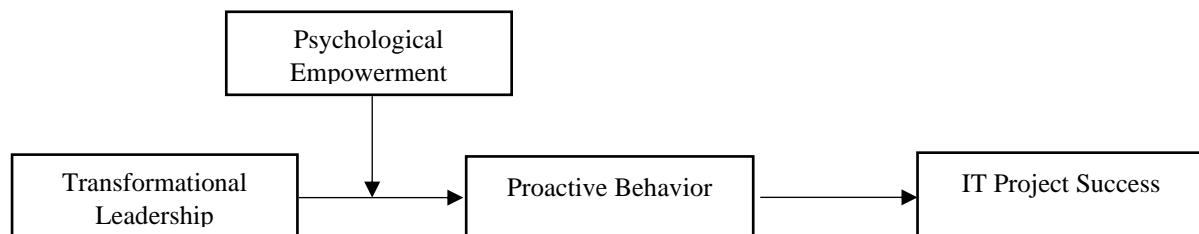


Figure 1. Research Model

Literature Review

Transformational Leadership and Project Success

Many prior research studies confirm that project managers’ specific behaviors significantly enhance project performance levels (Aga *et al.*, 2016; Khan *et al.*, 2020a; Zaman *et al.*, 2019). In project-driven contexts, displaying TFL behaviors (e.g., respect, inspiration, personalized consideration, responsibility, open communication, and support) can yield substantial and beneficial outcomes (Fareed *et al.*, 2021; Raziq *et al.*, 2018). Zaman *et al.* (2019) add that transformational leadership acts as a facilitator in strategic relocation and brings about an optimistic shift in applying the viewpoint of project stakeholders, thereby

enabling favorable outputs. TFLs raise awareness about various challenges and issues associated with projects, which justifies the implementation of more transformative initiatives (Zaman *et al.*, 2019). To succeed in achieving challenging project goals, TFLs provide motivating objectives to the employees (Ali *et al.*, 2021). They support excellent working connections, cohesiveness, and high engagement within the project workforce (Raziq *et al.*, 2018). Consequently, employees working contribute their full capabilities and efforts, ultimately leading to desired project outcomes (Ali *et al.*, 2021). Experts agree that such leadership traits, qualities, and behavior resonate with the TFL style (Fareed *et al.*, 2022; Kabore *et al.*, 2021). Based on a survey of firms in the Asia-Pacific region, Zaman *et al.*

(2020) found that TFL facilitates success in project portfolios. For Pakistan, Maqbool et al. (2017) confirmed that TFLs excelled in realizing success in construction projects compared to other leadership prototypes.

The self-determination theory (SDT) posits that three human needs, competence, relatedness, and autonomy, are necessary for intrinsic motivation and autonomy (Gagne & Deci, 2005). Leaders with transformational traits make meeting these needs easier (Shin & Zhou, 2003). Such leaders get their staff to work hard by making them feel like a team (Wang & Howell, 2010). They change how their subordinates see how well their job fits their values (Bono & Judge, 2003). Abbas and Ali (2021) argue that, in the context of a project, TFL could share a vision of the future and inspire their employees to work toward achieving project goals. Based on the above discussion, it is hypothesized that:

H₁: TFL exerts a positive influence on IT project success.

Proactive behavior as a Mediator

Employee proactiveness transforms and charges the working environment (Bateman & Crant, 1993), creating the stimulation needed to reach desired project outcomes. Proactive employees find and solve problems and seek methods to improve the working environment intuitively (Parker et al., 2006). Proactive actions include taking charge, expressing a voice, adopting ideas, and proactively solving issues (Parker & Collins, 2010; Scott & Bruce, 1994). Taking charge is a constructive, self-initiated attempt to enhance functional-level tasks in an organization (Morrison & Phelps, 1999). Proactive behavior's voice dimension actively contributes to the organization (LePine & Van Dyne, 1998). Problem prevention is self-directed action to avoid employment issues (Frese & Fay, 2001). Individual innovation means generating and applying new ideas, technologies, and procedures for organizational benefits. Proactive employees are devoted to attaining organizational goals and own the organization's success (Campbell, 2000). Proactive employees are eager to help teammates and organizations beyond their job requirements (Wang & Lei, 2021). To maintain flexibility and adaptability, contemporary organizations must understand the elements that encourage proactive behavior (Fuller et al., 2006).

Alternatively, some experts argue that encouragement and gratitude from leaders boost employee proactivity (Wang & Howell, 2010). For instance, TFL encourages proactive action from the employees to maximize job performance or project success in project environments. These leaders establish and express an appealing organizational vision of future potential, appreciate constructive comments, motivate people to strive towards mutual goals, and support high performance (Bass, 1985). Such a leadership approach leads to significant project outcomes (Aga et al., 2016). In addition, TFLs teach employees (Watts and Corrie, 2022), enabling project team members to learn how to address difficulties positively (Ali et al., 2021). TFLs inspire innovation and creativity at work, allowing employees to incorporate fresh ideas to increase project performance (Zaveri & Afshar, 2021). Jauhari et al. (2017) studied TFL and employee proactive behavior, confirming that TFLs encouraged

employee initiative in the IT sector. In another research by Hartog and Belschak (2012), the survey results reflected that proactive staff significantly contributed to successful projects in the presence of TFLs (Kapogiannis et al., 2021). Based on the above pieces of evidence, the following is hypothesized:

H₂: PB mediates the relationship between TFL and IT project success

The Moderating Role of Psychological Empowerment

Psychological empowerment (PE) refers to “enhanced intrinsic task motivation exhibited in purpose, competence, self-rule, and effect” (Spreitzer, 1995, p. 1443). PE includes denotation, autonomy, and effect. Competence gives an individual the confidence to apply skills and knowledge to a task (Otaibi et al., 2022). Employees typically assess the effect dimension to gauge their perceived impact on organizational results (Seibert et al., 2004). PE emphasizes subjective work evaluations (Soleimani et al., 2022), while self-determination regulates people's choices to do their jobs (Zhai et al., 2022).

Considering the intersection of PE and TFL, Pieterse et al. (2010) explain that PE can be an antecedent of TFL, a key modifier of its influence. Leaders seeking proactiveness must display and promote competence and willingness among workers, enabling them to feel psychologically empowered. Jauhari et al. (2017) highlighted that TFLs must empower subordinates to be proactive at work, and thus, they should recognize the potential benefits that PE of workers can bring to the organization (Ashfaq et al., 2021). Psychologically empowered employees can be proactive, work autonomously (Spreitzer, 1995), and support TFLs (Groselj et al., 2021). TFLs can inspire subordinates to be proactive, but PE is needed (Jauhari et al., 2017). TFLs encourage employees with high PE employees to spot problems and take leadership roles (Ashfaq et al., 2021), inciting them to be more proactive.

Pieterse et al. (2010) affirm that PE can moderate the association between TFL and work-related behavior, consistent with multiple studies based on the SDT (Khan et al., 2022; Nauman et al., 2021). Researchers explain that the self-determination of employees increases when their leaders give them purpose in their workplace. The leaders provide support, autonomy, self-determination, and resources to grow competency and efficacy and enable successful outcomes (Dewettinck & Van Amejide, 2011). These actions nurture strong linkages, contributing to favorable attitudes and proactive work conduct (Huang, 2017; Cropanzano & Mitchell, 2005). Thus, it is predicted that:

H₃: PE acts as a moderating factor in the relationship between TFL and PB, such that higher PE deepens the relationship between TFL and PB.

H₄: PE moderates the indirect effect of TFL on IT project success through proactive behavior.

Methodology

Population and Sample

The target sample of the study was project management professionals working in the IT and software development sectors. The sample population comprised full-time employees who had successfully finished at least one IT

project with their direct supervisor in the organization where they worked within the past two years. Data from the respondents were collected through questionnaires. This study used a purposive sampling technique for data collection. This technique was chosen to select projects that needed innovation and creating knowledge to accomplish the projects (Khan *et al.*, 2022). The survey respondents were followers of the project leaders and worked as team members in their projects. This methodology was similar to the one utilized by earlier studies that focused on the project context (Nauman *et al.*, 2021; Khan *et al.*, 2020a). Two rounds of data collection from the same respondents were done over six months. Invitation emails were sent to potential respondents willing to participate in the research. These emails outlined the aims of the study, as well as the prerequisites for participation. The emailed respondents were reassured concerning privacy and anonymity.

Initially, the data collection comprised responses on the demographics, mediator (proactive behavior), and moderator (PE). The following survey was conducted after two weeks, in which data were gathered concerning the

dependent variable (IT project success) and the independent variable (TFL). This strategy was applied to make a temporal gap between the measurements of the independent variables and the criterion constructs, which helped to mitigate the effects of common method bias (CMB) (Eichhorn, 2014; Podsakoff *et al.*, 2012). There is a high probability of CMB in two situations: i) when the data are obtained from a single source only and ii) when self-report scales are utilized (Podsakoff *et al.*, 2003). This statistical issue was addressed using the Harman single-factor method during a post-hoc study after the event. The findings showed that the percentage of variation that could be attributed to a single component was lower than the cutoff value of 50 % (Podsakoff *et al.*, 2012), supporting the absence of CMB in the data. From the 565 survey documents sent to IT professionals and software developers, 450 questionnaires were received. Only 340 usable instruments were isolated for analysis after weeding out responses due to incomplete information. The demographic details of survey respondents are displayed in Table 1.

Table 1

Respondents' Demographic Data		
Demographic details	Frequency	Percentage
Age		
20 -30	79	23
31 - 40	152	45
41 - 50	69	20
51 and above	40	12
Gender		
Male	232	68
Female	108	32
Education		
Undergraduate	193	57
Master	118	35
PhD	29	9
Experience		
1-3	112	33
4-6	145	43
Above 6	83	24

Measures

Transformational Leadership

The study employed a 13-item TFL battery by Aga *et al.* (2016), comprising four unique dimensions: *individual consideration*, *inspirational motivation*, *intellectual stimulation*, and *idealized influence*. IT professionals rated on a Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Statements such as “Team members have complete faith in me” were among the items used by the respondents to express their opinions on leadership practices in their respective organizations.

Employee Proactive Behavior

Employee proactive behavior was measured with an 11-item battery adopted from Belschak and Den Hartog (2010). This scale gauges individual preferences based on *organizational*, *interpersonal*, and *personal* aspects.

Employees referred to sample items like “At work, an employee takes the initiative to acquire new knowledge that will help the company.”

Psychological Empowerment

The PE scale in this study was based on an 11-item battery by Spritzer (1995), constituting the following four elements: i) *meaning*, ii) *impact*, iii) *self-determination*, and iv) *competence*. Sample items include “The work I do is very important for me.”

IT Project Success

The success of IT projects was measured through various indicators and 14 items within the following dimensions: time, cost, performance, client use, satisfaction, and effectiveness (Aga *et al.*, 2016). The PM researchers frequently use the same battery due to its reliability and consistency (Khan *et al.*, 2022a; Raziq *et al.*, 2018). Sample items comprise statements such as “The project was completed on time.”

All the batteries mentioned above demonstrated statistically accepted reliability. The Cronbach alpha (α) values are = 0.951 for TFL, employee proactive behavior= 0.952, PE= 0.93, and IT Project success α = 0.94.

Data Analysis

Data were analyzed through the SPSS 24 and SmartPLS softwares. The two stages of the data analysis were confirmatory factor analysis (CFA) and structural equation modeling (SEM). The former method is a key step in determining whether [or not] the items support the theorized latent constructs (Kline, 2015), while SEM validates the hypothesized associations (Joreskog & Sorbom, 1993).

Confirmatory Factor Analysis (CFA)

CFA is a valuable method for assessing the explanatory power of the measurement models that serve as the foundation for analyzing relationships among latent variables. In this study, CFA was conducted using SmartPLS software. The CFA analysis demonstrated good model fitness, as evidenced by SRMR = 0.086; all the factor loadings were higher than 0.70.

Table 2 depicts the mean, standard deviation, construct validity, and correlation statistics. As seen below, the convergent validity (CV), composite reliability (CR), and tests for assessing the discriminant validity of the all-latent variables were satisfactory. For instance, all CR values were more than 0.9, demonstrating good internal consistency of all constructs (Fornell and Larcker, 1981). To ascertain convergent validity, the average variance extracted (AVE) test is commonly adopted (Hair *et al.*, 2014). As illustrated in Table 2, all AVE values were higher than 0.5, consistent with acceptable statistical standards for convergent validity (cf. Dos *et al.*, 2023). Discriminant validity, which determines how much a construct is different from other constructs in the model was assessed using the Fornell-Larcker method (Fornell & Larcker, 1981). According to the Fornell-Larcker method, if the AVE square root values of all the variables were higher in relation to the correlation between all the constructs, the criterion for discriminant validity is satisfied (Table 2).

Table 2

Mean, Standard Deviation, Validity and Correlation

	Mean	SD	CR	AVE	TFL	PB	PE	IT PS
TFL	3.32	1.086	0.956	0.61	-			
PB	2.95	1.10	0.958	0.67	0.352**	-		
PE	3.26	1.01	0.912	0.50	0.036	-0.048	-	
IT Project Success	3.31	0.94	0.951	0.58	0.488**	0.439**	0.108*	-

***p* < 0.001 (two-tailed) TFL= transformational leadership, PB= proactive behavior, PE= psychological empowerment, IT PS= IT project success

Table 3

SEM Path Analysis Results

Hypotheses	Coefficient	P values	t-value
TFL → Project success	0.38*	≤ 0.05	7.898
TFL → Proactive Behavior → Project success	0.12*	≤ 0.05	2.95
TFL*PE → Project success	0.107*	≤ 0.05	3.787

Note (s): **p* < 0.05; ***p* < 0.01; ****p* < 0.001

After reliability and validity estimations, the study’s hypotheses were tested using the bootstrap analysis proposed by Preacher *et al.* (2007). The results of the study revealed that TFL has a positive and significant relationship with project success ($\beta = 0.38$; *t*-statistics = 7.898), thus supporting H1. For the indirect effect of TFL on project success, we used Preacher *et al.*’s bootstrap analysis (2007). This method produces precise confidence intervals (CIs) to estimate indirect effects (Friedman *et al.*, 2013). In addition, this approach helps identify when the sampling distribution in the data analysis for the mediation effect is skewed away from zero (Cheung & Lau, 2008). Using 5,000 data samples, we generated a 95 % bias-corrected bootstrapped CIs. The bootstrap results showed that PB had a positive and statistically significant mediating effect between TFL and the success of IT projects ($\beta = 0.12$; *p* 0.05, 95 % CI [0.052, 0.158]). The results also revealed that proactive behavior partially mediated the relationship between TFL and IT project success because the direct effect of TFL on IT project success remains significant after introducing a mediator.

The Moderating Role of Psychological Empowerment

To test Hypothesis 3 (H3), we used a conditional process analysis and Model 7 of Process macro (Preacher *et al.*, 2007; Preacher & Hayes, 2008). In a moderated mediation model, we examined how TFL indirectly, through PB, influences project success at different values of a moderator (i.e., PE). In the present study, the main results of the conditional moderated-mediation effect of PE in the relationship of TFL and project success at different levels of PE were calculated through PROCESS macro model 7 developed by Hayes (2013). This process entails a four-step process: (a) modeling the mediator and dependent variable, (b) analyzing direct effects, (c) conducting conditional indirect analysis, and (d) calculating the index of moderated mediation. Figures 2 and 3 depict conceptual and statistical models, illustrating the mediating and moderating influence of “proactive behavior” and “PE,” in the relationship between TFL and project success.

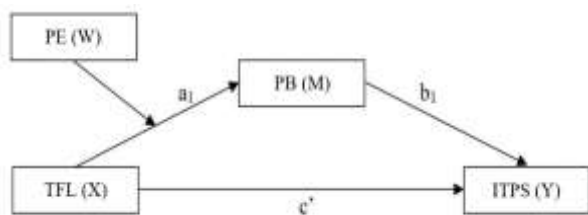


Figure 2. Conceptual Moderated Mediation Model Proactive behavior

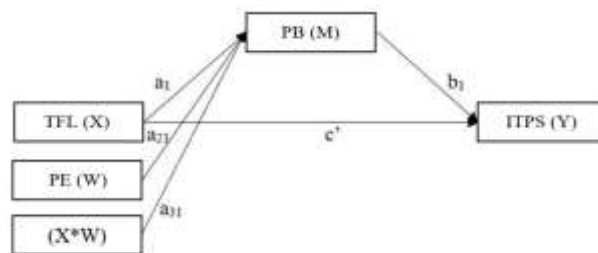


Figure 3. Statistical Model: Moderated Mediation of Proactive behavior

The description of each step, along with the corresponding results and interpretation, is presented below.

Table 4 provides a visual representation of the conditional Process analysis.

Table 4

Conditional PROCESS Analysis for PE (TFL→proactive behavior→IT project success)

Conditional Indirect Effect of TFL on PB at 1± SD of the mean of PE (Mean Centered)				
<i>PE (Moderator)</i>	<i>Bootstrap Estimate</i>	<i>Bootstrap Standard Error</i>	<i>Bootstrap Lower Level Confidence Interval</i>	<i>Bootstrap Upper Level Confidence Interval</i>
-0.014285	.0242	.0232	-.00160	.0758
0.0000	.0876	.0227	.0501	.1384
0.0142	.1507	.0340	.0917	.2257
Index of Moderated Mediation	Index	Bootstrap Standard Error	Bootstrap Lower Level Confidence Interval	Bootstrap Upper Level Confidence Interval
	.0622	.0181	.0318	.1029

Note. N=340. PROCESS Model 7 enabled mean centering, Bootstrap default sample size = 5000. $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

To examine the moderated mediation model, we first examine the influence of TFL, PE, and PB on project success. We then created an interaction term of TFL and PE. Finally, we assessed the indirect effect of TFL on project success through PB at +1 SD and -1 SD of PE from the mean.

The findings demonstrated that TFL positively predicts proactive behavior ($b = .34$, $t = 6.25$, $p < .05$). In addition, the results revealed that the interaction term of PE and TFL significantly predicts proactive behavior ($b = .107$, $t = 3.787$, $p < .001$), thus providing support for the moderating role of PE between TFL and proactive behavior (H3). These results suggest that the effect of TFL on proactive behavior is conditioned upon the PE. Thus, the presence of moderation between TFL and proactive behavior meets the initial conditions for moderated mediation, indicating that PE moderates the effect of TFL on IT project success through the mediator's proactive behavior.

In the second stage, within the dependent model, the study observed a positive prediction of IT project success by proactive behavior ($b = 0.311$, $t = 5.937$, $p < .05$). Additionally, the direct effect of the predictor variable (TFL) on the outcome variable (IT project success), while controlling for the mediator, was also found to be significant and positive and TFL positively predicted IT project success ($b = 0.38$, $t = 7.898$, $p < .05$). Furthermore, to evaluate the conditional indirect effect based on the moderator (PE at the mean and at ± 1 SD), all three values were positively and significantly different from zero and statistically significant. These results suggest that as PE values increase, the conditional indirect effect also increases, as outlined in Table 4. The findings revealed that the indirect effects of TFL on IT project success through proactive behavior are

significant at PE values of 1+ SD. Finally, the test of moderated mediation, analyzed using the index of moderated mediation, yielded a significant result with $b = .0622$, $SE = .0181$, and a 95% CI [.0318, .1029]. Thus, the results of the study also support H4. Table 4, along with Figures 3 and 4, visually depict these results.

Discussion

The empirical framework in this study assessed the influence of TFL on IT project success with PB and PE as a mediator and moderator. As predicted, employees reported TFL as an appropriate leadership prototype for realizing IT project success. Employees appreciated the role of TFL as a driving force, inspiring team members to attain productivity, stakeholder satisfaction, and effectiveness, ultimately enabling the success of projects. This finding resonates with prior concepts (Aga *et al.*, 2016), identifying TFL as an antecedent of project success. Besides, this result responds to numerous calls in the PM literature by offering an alternate explanation of how the leadership style of project managers (e.g., TFL) facilitates project success in the presence of various intermediary mechanisms (Fareed *et al.*, 2022; Kabore *et al.*, 2021).

Secondly, as per employee self-reports, TFL could achieve the desired results in IT projects when PB was high among employees. This result corroborates with prior ideas that employee innovative behavior significantly mediates the nexus between leadership and project success (Ali *et al.*, 2020). Thirdly, employee self-reports confirmed the moderating role of PE between TFL and PB, supporting prior assertions that followers of TFLs pursue innovation

when they feel empowered (Groselj *et al.*, 2021; Pieterse *et al.*, 2010). This result implies that project managers espousing TFL traits incite a high level of PE among followers, boosting their PB. Employees feel valued as TFL encourage participation in accomplishing common objectives and purposes.

Practical Implications

The managerial applications of these results for professionals are substantial. For instance, organizations can promote and nurture TFL skills and qualities among managerial and leadership cadre employees for IT projects. Second, the recruitment and selection criterion and inventory in IT projects should focus on candidates displaying TFL qualities and traits, i.e., motivating, obliging, customized consideration, support, and open communication (Al-Ghazali, 2020).

Third, organizations that recognize and value expertise often achieve project success. Equally, project leaders who highlight and promote exceptionality, expertise, talent, and skills in such environments also develop a genuine feeling of accomplishment (Raziq *et al.*, 2018).

If so, TFL can serve as a powerful tool in the IT sector to help employees realize their expertise through learning, idealized influence, training, and motivation. Fourth, as suggested by the current findings, managers enacting TFL in the IT project sector should exploit their unique traits to develop a rewarding environment based on PB. TFL should foster a conducive culture built on individualized focus, where employees feel psychologically empowered, inspired, and motivated through opportunities, autonomy, and support. Such a project atmosphere could provide the necessary intellectual stimulation for the employee to be proactive and develop the competencies and self-determination needed to decipher the meaningfulness of their work and the value of the impact they could create in the successful project outcomes.

Fifth, project managers may expect to learn various techniques to foster TFL as part of their education (Ali *et al.*, 2021; Maqbool *et al.*, 2017).

Enabling project managers to create a culture of respect amongst team members would be significant. They should appreciate, value, and promptly address issues highlighted by project staff while supporting their effort and contributions. Even if team members make mistakes, the leaders should enact a future-centric approach instead of dwelling on the past when formulating a strategy. Project managers may help their teams feel more confident by disseminating information, including them in critical decisions, serving as role models, and giving regular, constructive feedback. To summarize, the current findings assert the need to select, recruit, develop, and cultivate TFL qualities among project managers in the IT sector so they can empower and inspire followers to act proactively toward anticipated project outcomes.

Theoretical Implication

The present conceptual and empirical framework entail significant theoretical implications for management and leadership literature, particularly for practitioners and

researchers in the PM domain. For instance, built on the SDT and social exchange theory (SET) tenets, the paper linked TFL to successful project completion in an under-researched context, i.e., the IT industry. The paper adds to the existing body of literature by providing evidence for applying TFL in PM and IT-driven environments. At the same time, using the SDT and SET premise, the paper empirically explains how IT project managers with TFL traits create a conducive culture and social exchange atmosphere that allows team members to feel highly engaged, appreciated, valued, and empowered (PE) while proactively (PB) pursuing project goals. In short, adding to PM literature, the paper identifies three antecedents (i.e., TFL, PE, and PB) to project success and specifies the precise role (i.e., antecedent, mediator, and moderator) each factor plays in the success of time and budget-constrained projects in the IT sector.

Future Recommendation

Despite the significant contribution, the current research has several limitations, pointing scholars to potential new routes for future research. For example, The cross-sectional nature of the research methodology limits the broader application of the current model, proposed relationships, and findings. Future longitudinal studies in IT organizations can test the present model for broader applications. Furthermore, the current study employs a single leadership model (TFL). Upcoming investigations can focus on establishing the relative efficacy of TFL in the PM environments, using other competing and progressive prototypes more suited to the uncertainty-driven and dynamic IT sector, e.g., dialectical (Zhang *et al.*, 2022). Another inadequacy of this study is that it only considers the proactive dimension of workforce agility, which can be addressed using all workforce agility dimensions. Incorporating these dimensions is critical because of its close association with the PM. Besides, it can help understand how each dimension contributes to successful project completion. (Petermann *et al.*, 2021).

Conclusions

The dynamic and uncertain project management environment (specifically the IT sector) warrants imminent academic focus, given its vulnerability to many factors contributing to high project failure rates. Therefore, this study responds to prior calls and offers an empirical model showing the favorable effects of TFL on successful outcomes in the context of IT projects. More so, the study elucidates that the traits of TFL, aligned to the IT project contexts, enable them to attain desired outcomes by promoting PB among team members, which becomes possible due to their ability to foster a culture in which employees feel empowered. Thus, organizations in the IT industry should strive to account for the interplay of complex human and technology factors, processes, models, and mechanisms (e.g., TFL, PE, and PB) conducive to high success rates of IT projects.

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