

Validating Indirect Effect of Transformational Leadership on Work Engagement through Trust: Evidence from Call Center Employees in Pakistan's Telecom Sector.

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ABSTRACT

Purpose—The study aims to examine the influence of transformational leadership on employee work engagement and analyzes whether trust in the leader mediates this relationship within the context of the telecom call center sector in Pakistan.

Study Design/methodology/approach—A quantitative, survey-based research design was employed, and data were collected from 165 call center employees through a structured questionnaire. Hierarchical component modelling, a disjoint two-stage approach in Smart PLS 4, was employed. Reliability, validity, and common method bias were assessed to ensure methodological rigor.

Findings—Transformational leadership significantly augments work engagement ($\beta = 0.509^{***}$, $p < 0.001$) and strongly predicts trust in the leader ($\beta = 0.668^{***}$, $p < 0.001$). Trust in the leader also shows a mediating effect with VAF of more than 20%, indicating partial mediation between transformational leadership and work engagement. It offers those transformational leaders influence employee engagement both directly and indirectly by enabling trust.

Research Limitations—Cross-sectional design, sample size, single-source data, and single-sector selection were the limitations of the study. Future research could examine designing a longitudinal design, a large sample size, different organizational settings, and various contexts to enhance generalizability.

Research Practical Implications—HR departments should invest in transformational leadership development programs to strengthen trust in leaders, which can enhance employee engagement, reduce turnover, and improve organizational performance.

Originality/value—The study adds to the leadership and engagement literature by validating hierarchical modeling components of both transformational leadership and work engagement and investigating the mediating role of trust in the South Asian telecom sector, a context where empirical evidence remains limited.

Keywords: Transformational leadership, Work Engagement, Telecom Sector

JEL Classification Codes: M13, M12, D23, L96

1 | INTRODUCTION

Worldwide, organizations are struggling with an employee engagement crisis, with 79% of the workforce reported as disengaged, showing a two percent decline from the year before, resulting in severe economic

repercussions estimated at US\$438 billion annually ([Gallup, 2025](#)). Work engagement is defined as a positive, fulfilling, work-related state of mind that is characterized by vigor, dedication, and absorption” ([Schaufeli et al., 2002](#)). Contrary to these findings, engaged employees are highly desirable for every manager ([Nurtjahjani et al., 2022](#)), but to keep employees motivated and engaged is one of the most challenging tasks for managers ([Abdulrahman et al., 2022](#); [Coo & Salanova, 2018](#)). To this end, the Job Demand Resource model has been widely applied framework, positing that employees' wellbeing and engagement depend on the balance between job resources and demand ([Albrecht et al., 2021](#)), whereas high job demand creates disengagement, leading to negative outcomes, job resources keep employees motivated, leading to positive outcomes ([Albrecht et al., 2021](#)). Therefore, job resources are the key predictors of employees' engagement.

Recently, job resources such as meaningfulness in work, innovative work behavior, organization culture, and relationship with leadership are vital predictors of employee engagement ([Albrecht et al., 2021](#); [Alfes et al., 2013](#)). Among these factors, leadership is one of the critical factors in shaping a work environment and employees' perception of work ([Baquero, 2023](#); [Li et al., 2021](#)).

Leadership literature has recently revealed that transformational leadership is one of the most influential theory ([Nurtjahjani et al., 2022](#)) and an effective behavior that enhance employee performance, well-being, and engagement ([Aftab et al., 2023](#); [Lai et al., 2020](#); [Monje-Amor et al., 2020](#)). However, the impact of leadership on employee engagement has been shown to have considerable variation across empirical research, and argued that this variation may be due to unmeasured variables that affect the relationship ([Zhu et al., 2009](#)). In addition, transformational leadership conceptual specification and methodological rigor have an important role in the strength and direction of the effects on outcome variables ([Hadi, 2022](#)). More importantly, transformational leadership effects vary across cultural values and practices, such as developed and developing countries ([Crede et al., 2019](#)). Therefore, to appropriately establish the impact of transformational leadership style on employees' work engagement, further investigation of mediating and moderating variables, methodological rigor, and conceptual specification, including different cultural values and practices, is needed ([Crede et al., 2019](#); [Hadi, 2022](#); [Zhu et al., 2009](#)).

Aligning with this perspective, the present study intended to investigate the effect of transformational leadership on work engagement and whether trust in the leader mediates when transformational leadership translates its effect on work engagement ([Yasin Ghadi et al., 2013](#)). To ensure methodological rigor Hierarchical Component Modeling approach was followed for leadership and engagement ([Hadi, 2022](#); [Hair et al., 2019](#)), collecting data from call center employees in the Telecom Sector of Pakistan ([Pattnaik & Panda, 2020](#)).

1.1 | Problem Statement

Work engagement is vital for employee performance ([Nurtjahjani et al., 2022](#)). Disengagement is an alarming issue globally due to mental health issues and economic repercussions ([Gallup, 2025](#)). Leadership plays a significant role in shaping employee engagement ([Monje-Amor et al., 2020](#)). Still, the effects of leadership style on employee engagement vary due to contextual factors, methodological rigor, and unmeasured variables that effects the relationship indirectly. More importantly, we know little about how transformational leadership influences engagement, especially in developing countries like Pakistan ([Oh, 2021](#)). Some research suggests trust in the leader might explain this link ([Yasin Ghadi et al., 2013](#)). But this

idea has not been tested much in the telecom sector. This is why we argue that trust may act as a bridge between transformational leadership styles and employees' engagement, but the evidence is still thin in existing literature.

Most studies also fail to use advanced models that handle complex leadership traits. The Hierarchical Component Model allows researchers to look at leadership and engagement as layered and multidimensional ([Hadi, 2022](#); [Hair et al., 2019](#)). Using this model can reveal patterns that simple models miss. Therefore, hierarchical component modeling techniques were applied to better estimate the effects of fast-growing and serious workforce challenges, e.g., call center employees in Pakistan ([Pattnaik & Panda, 2020](#)).

1.2 | Objectives

The study is designed to find out the impact of transformational leadership on work engagement through direct and indirect mechanisms, keeping in view call center employees in the telecom sector of Pakistan. Specifically, the study wants to:

1. To evaluate the influence of transformational leadership on employees' work engagement.
2. To assess the influence of transformational leadership on employees' trust in their leader.
3. To evaluate the influence of trust in the leader on employees' work engagement.
4. To find the mediating role of trust in leaders between the link of transformational leadership and employees' work engagement.

1.3 | Research questions

1. Does transformational leadership significantly influence employees' work engagement?
2. Does transformational leadership significantly influence trust in the leader?
3. Does trust in a leader significantly influence employees' level of work engagement?
4. Does trust in the leader mediate the relationship between transformational leadership and work engagement?

2 | LITERATURE REVIEW

2.1 | Transformational Leadership Behavior

Transformational leadership is a style where leaders help people perform beyond what they thought possible. They encourage others to go the extra mile for the benefit of the whole organization ([Bass & Bass Bernard, 1985](#)). This kind of leadership is based on four key behaviors.

The first one is an idealized influence, which means the leader sets a strong example for the followers. Second, inspirational motivation is about sharing a clear vision. It gives people purpose and hope beyond their own goals. Third, intellectual stimulation encourages creative thinking. Leaders push followers to ask questions and find new solutions. Fourth, individualized consideration means the supervisor supports each individual personally. They coach, listen, and help people grow. These four parts work together- inspire and develop individuals and a whole team for higher goals ([Boberg & Bourgeois, 2016](#); [Cheng & Sheu, 2017](#); [Muralidharan & Pathak, 2018](#)).

2.2 | Work engagement

Work engagement describes employees' positive, fulfilling state of mind connected to job performance ([Schaufeli et al., 2002](#)). It is generally divided into three distinct dimensions, namely vigor, dedication, and absorption. Vigor refers to a worker's optimum mental energy and psychological state during task performance. Dedication states an employee's motivation, enthusiasm, pride, and ability to face challenges. Absorption is the complete concentration on a task ([Schaufeli et al., 2002](#)).

Previous studies debated that work engagement is a repackaging of other positive psychological constructs, such as job satisfaction, organizational commitment, and job involvement ([Yildiz & Yildiz, 2022](#)). Contrary to these findings, recent studies established that work engagement is a distinct psychological construct, separate from related ideas like job satisfaction or organizational commitment ([Inceoglu et al., 2018](#); [Schaufeli et al., 2002](#)).

The concept has been studied using several theoretical lenses, for instance, social exchange theory, self-determination theory, conservation of resource theory, and job demand resource theory. But, Job Demands-Resources (JD-R) Theory remains central, showing how job resources like support, autonomy, and feedback boost engagement ([Albrecht et al., 2021](#); [Lesener et al., 2019](#)). Together, these theoretical bases help to understand how and why employees engage with their work across various settings.

2.3 | Trust in Leader

Trust in a leader is employees' positive expectations about their supervisor's honesty, competence, and benevolence ([Baquero, 2023](#)). Trust means followers feel safe to rely on their leader even without control over outcomes ([Dinda & Wahyuni, 2023](#)). Trust includes both cognitive and emotional elements ([Mayer et al., 1995](#)). The cognitive aspect assesses the leader's competence, informed, and effectiveness. Emotional aspects are that leaders genuinely care and show concern for followers ([Yuan et al., 2022](#)). A high state of trust builds a smooth relationship between the leader and followers, where the followers can take initiative, express opinions, and remain engaged without fear of negative consequences ([Håvold et al., 2021](#)).

2.4 | Linking Transformational Leadership to Work Engagement

The Job Demands–Resources (JD-R) theory provides a well-known framework for understanding the mechanism of the relationship between transformational leadership and work engagement ([Lesener et al., 2019](#)). This theory asserts that role characteristics effect employee motivation and well-being at work ([Albrecht et al., 2021](#)). The job characteristics-job demand (e.g., workload, time pressure, charged situation, and role conflict) lead to stress ([Albrecht et al., 2021](#); [Lesener et al., 2019](#); [Rudolph et al., 2022](#)) while job resources (e.g., autonomy, meaningful work, development, and supervisor support) help in employee motivation and engagement ([Albrecht et al., 2021](#); [Dukhaykh et al., 2023](#); [Rudolph et al., 2022](#)).

Transformational leadership is a vital resource, offering support, clarifying goals, fostering autonomy, and sharing an inspiring vision through its four distinct behaviors ([Rudolph et al., 2022](#)). In effect, employees get mentally charged, immersed in the task, and concentrated ([Irianto & Basbeth, 2021](#); [Rudolph et al., 2022](#)). Through a psychological approach, transformational leaders create compelling vision, intellectual stimulation, and individual support, consistently showing enhanced employee motivation and commitment ([Albrecht et al., 2021](#)). Employees under such leadership are more likely to demonstrate vigor, dedication, and complete absorption in their work, which are the core elements of engagement ([Monje-Amor et al., 2020](#)). Several recent

studies reaffirm the direct positive relationship between TL and WE, suggesting that the behaviors embedded in transformational leadership have a unique capacity to energize and inspire employees across sectors and cultures ([Crede et al., 2019](#); [Lai et al., 2020](#); [Yasin Ghadi et al., 2013](#)).

The effectiveness of the transformational leadership style is different across industries, organizations, and countries. For example, TL is more effective where emotional support and interpersonal support are critical, such as in healthcare and education ([Rudolph et al., 2022](#)). On the contrary, the effects may be less in highly technical or mechanistic industries where tasks depend on structure and individual skills ([Nguon, 2022](#)). Similarly, cultural differences also play a significant role in leadership effectiveness and interpretation e.g., Western societies TL behavior are well received where power distance is low, oppositely, in collectivist or hierarchical cultures, such as those in parts of Asia or the Middle East, the same behaviors may be misunderstood or undervalued unless they align with cultural expectations for authority and group harmony ([Huang et al., 2021](#)). Additionally, organizational structure limits and extends the effects of leadership; a rigid hierarchy restrains the influence, in contrast, the horizontal structure better translates the effects of leadership on outcomes ([Garg & Krishnan, 2003](#); [Xu et al., 2022](#)). Therefore, these gaps and variations in leadership effectiveness challenge universal application. Specifically, work engagement in the call center employees is challenged mainly due to long hours, emotional labor, work-family conflict, and time-bound tasks (Emanuel et al., 2014). If these are not balanced with adequate resources, it can lead to burnout and disengagement ([Demerouti, 2024](#)). So, we postulate that:

H₁: *Transformational leadership positively and significantly predicts work engagement of call center employees in the Telecom sector.*

2.5 | Linking Transformational Leadership to Trust in the Leader

Transformational leadership behavior gains trust through care and concern for the team members ([Dinda & Wahyuni, 2023](#)). Trust in a leader forms from two aspects: cognitive, which is based on the competency of the leader, and affective, which is based on emotional attachment ([Baquero, 2023](#); [Bass & Riggio, 2006](#)). competencies and care make team members free of fear and able to fully engage in the task ([Bae et al., 2024](#); [Kleynhans et al., 2021](#)). In uncertain situations, employees seek to ensure their interests and security. Here, the transformational leadership style remains successful in building trust. Moreover, trust operates between two parties, i.e., the leader and follower. Leader's actions influence followers' perception and actions. According to ([Yakovleva et al., 2010](#)), influential leaders set an example for their followers, paying particular attention to their needs and emotions, shaping a favorable climate. [Tepper et al. \(2018\)](#) followers require more transformational behavior in challenging tasks, uncertain situations and performing significant work. Trust in leadership is crucial for followers in coping with uncertainty and imperfect knowledge. Specifically, individual consideration predicts trusting relationships. Full transformational leadership model and individualized leadership practices are suggested ([Martínez-Córcoles et al., 2018](#)). Therefore, we conclude that:

H2a: *Transformational leadership positively and significantly predicts trust in the leader of call center employees in the Telecom sector.*

2.6 | Linking Trust in Leader to Work Engagement

Trust in leadership has a critical role in raising employee work engagement, creating psychological safety, and reinforcing positive reciprocal behaviors. Studies that used social exchange theory highlight this connection. When employees trust their supervisors, they are more psychologically engaged and invest effort and commitment in their roles ([Kleynhans et al., 2021](#)). In the same way, a well-established study found that ethical leadership indirectly affects employee engagement through trust in the leader-behaviors grounded in fairness and ethical values build trust, which then enhances engagement ([Islam et al., 2024](#)).

Resultantly, supervisor trust-based relationships encourage followers to invest more energy in their tasks ([Albrecht et al., 2021](#); [Kleynhans et al., 2021](#); [Yasin Ghadi et al., 2013](#); [Zhu et al., 2009](#)). According to, trust is a strong predictor of work engagement primarily because of its ability to reduce uncertainty and emotional security. The followers who trust their managers are more likely to return with higher levels of dedication, vigor, and involvement in their roles ([Aman et al., 2023](#)). In other words, the absence of trust can lead to burnout, mistrust, and emotional withdrawal. Thus, trust is not just a relational outcome; it is a key driver of sustained engagement in the workplace.

H2b: *Trust in the leader positively and significantly predicts the work engagement of call center employees in the Telecom sector.*

2.7 | Linking Transformational Leadership to Work Engagement through Trust

Transformational leadership style has always been linked with positive outputs, such as improved motivation, commitment, and engagement ([Dukhaykh et al., 2023](#); [Monje-Amor et al., 2020](#)). Despite that, the mechanism through which transformational leadership effects work engagement is not always direct ([Zhu et al., 2009](#)). The researcher argued that, primarily, the effects are indirect and involve a mediator or moderator that enhances or reduces the effects and direction of the relationship. Follower characteristics, such as independent thinking ([Zhu et al., 2009](#)), willingness to take risks, innovative thinking, promotion focus ([Cheng et al., 2014](#)), and personal job-job fit ([Enwereuzor et al., 2018](#)), have a moderating effect between transformational leadership and work engagement ([Decuyper & Schaufeli, 2021](#)). In the same line, mediators such as psychological resources ([Lee et al., 2017](#)), personal resources ([Huang et al., 2021](#)), organizational and team resources ([Mayr, 2017](#)), and leader attributes ([Penger & Černe, 2014](#)) play a significant role in translating transformational leadership effects on work engagement ([Decuyper & Schaufeli, 2021](#)). When leaders' actions are consistent with their words and values-fostering a culture of accountability and trust ([Dahiya et al., 2025](#)).

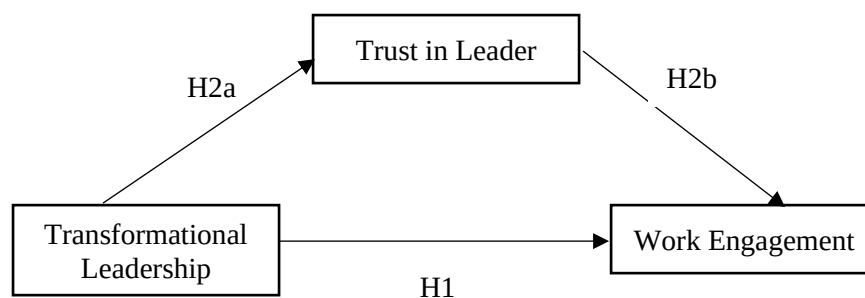
Transformational leadership's effect on work engagement via trust can be better explained through the lenses of Social Exchange Theory and Job Demand Resource pathways ([Bakker & Demerouti, 2024](#); [Blau, 1964](#)). According to SET, relationships are based on reciprocity-when one party receives resources, the other party is obliged to reciprocate. Transformational leadership creates high quality exchanges such as compelling vision, inspiration, integrity, and individual concern through its distinct behaviors ([Yasin Ghadi et al., 2013](#)). These behaviors serve as a trust signal and followers perceive their leader as competent, benevolent, and best interest seeker ([Dirks & Ferrin, 2002](#)). As a result, trust becomes a rational exchange for the followers that

reduces the perception of risk and uncertainty in leaders leader-follower relation ([Islam et al., 2024](#)). In the JD-R perspective, trust operates as a social and psychological resource that fuels motivation, dismantles stress, and enhances engagement ([Albrecht et al., 2021](#)). Trust in a leader is consistently related to leadership and investigated in the context of ethical leadership, servant leadership, but is missing in the framework when transformational leadership affects work engagement ([Baquero, 2023](#); [Decuyper & Schaufeli, 2021](#); [Yasin Ghadi et al., 2013](#)). Therefore, the study contended that:

H3: *Trust-in-leader has a mediating role in the relationship between transformational leadership and work engagement of call center employees in the Telecom sector.*

Figure 1

Conceptual Framework



3 | METHODOLOGY & DESIGN

The study implemented a quantitative, cross-sectional, and survey-based research design. Primary data was collected from call center employees to empirically examine the nexus between transformational leadership behavior, trust in the leader, and work engagement of call center employees in the Telecom sector of Pakistan. Job demand Resource model theoretically positions the leadership behavior as a resource for employees' positive outcomes, e.g., work engagement, and Social Exchange theory explains the quality of the dyadic relationship between leader and follower in the form of trust. In this study, a post-positivist paradigm, deductive reasoning, and quantitative methods were followed for the assurance of research replicability and statistical rigor, which are critical for validating theoretical models ([Creswell & Creswell, 2017](#); [Huyler & McGill, 2019](#); [Penger & Černe, 2014](#)).

3.1 | Population and Sampling

The target participants were call center employees of cellular companies, working in the locality of Rawalpindi and Islamabad. These companies' employees were selected due to the team structure, where employees worked under the supervision of a team lead. The employees were working in a high-demand working environment, exposed to negative employee outcomes ([Pattnaik & Panda, 2020](#)).

A cluster sampling procedure was followed by selecting all four call centers of the Telecom sector located in Rawalpindi and Islamabad. Then, randomly, employees were selected and a questionnaire was distributed ([Creswell & Creswell, 2017](#)). The sample size for this study was determined following the guidelines provided

in prior research on appropriate sample sizes for survey studies. Particularly, the study consulted relevant sources. A review paper on sample size considerations for survey research ([Memon et al., 2020](#)), a methodological article on the use and reporting of PLS-SEM ([Hair & Alamer, 2022](#)), and G*Power analysis for minimum sample size ([Faul et al., 2009](#)). These sources propose that a sample size up to 100 is considered small, 100 to 200 is medium, and above 200 is large. Given the complexity of the proposed High Order Model ([Hair et al., 2019](#)) in the current study, the researchers decided on a sample size of 165, which falls within the medium range and meets the minimum threshold for conducting the necessary bootstrapping analyses ([Lin & Hsieh, 2010](#)).

The researcher got prior approval from the floor manager to collect data from the staff after communicating the research objectives. The researcher personally visited the offices and distributed questionnaires among employees during their free time. The questionnaire included an information letter on the front page in which the researcher introduced the research topic and emphasized the confidentiality of the respondents, followed by demographics (age, gender, education, organization, and service). Next, we kept the research questions of transformational leadership, work engagement, and trust. Finally, a total of 250 structured questionnaires were distributed among call center employees, and 165 complete responses were considered for analysis purposes.

3.2 | Measures

Research variables, i.e., transformational leadership, work engagement, and trust, were measured through authentic scales adopted from previous studies. A five-point Likert scale range from strongly disagree to agree strongly was selected.

3.2.1 | Transformational Leadership

Transformational leadership behavior measured on the Multi-Leadership Questionnaire consisted of 20 items taken from the study of [Bass \(1997\)](#). In the scale sub-dimensions, idealized influence was assessed on eight items, remaining individual consideration, intellectual stimulation, and inspirational motivation were measured on four items each. Examples of these items included: "He instills pride in me for being associated with him" and "He talks optimistically about the future". Reliability in prior studies has shown between 0.81 and 0.94 in different studies ([Bass, 1997](#)). Limitations have been reported, but still, the MLQ is a popular measurement tool ([Bagheri et al., 2015](#); [Raziq et al., 2021](#)).

3.2.2 | Work Engagement

The Utrecht Work Engagement Scale (UWES) consisted of 17 items that measured employees' work engagement of call center employees. The scale further included a subscale for each of the three dimensions, Vigor, Dedication, and Absorption ([Schaufeli et al., 2002](#)). Examples of these items included: "At my work, I feel bursting with energy" and "I am enthusiastic about my job."

3.2.3 | Trust in the Leader

To assess the trust in the supervisor of call center employees, the [McAllister \(1995\)](#) scale was adopted. Three items measure cognition-based trust, while the remaining two measure affect-based trust, e.g., "I trust my colleagues due to their dedication and professionalism". The current study adopted a unidimensional approach to assess overall trust in the supervisor because the primary focus was on the overall trust in the leader rather than differentiation between cognitive and affective trust. Also, the decision was based on

theoretical alignment with the model and supported by prior studies (e.g., as well as satisfactory psychometric properties of the combined scale.

3.3 | Data Analysis

The data analysis involved multiple steps, combining descriptive and inferential statistical techniques to evaluate the measurement and structural components of the proposed research model. The analysis included SPSS (Version 23) for initial descriptive statistics, data screening, and common method bias, Harman's single-factor test. Smart PLS version 4.1.14 for advanced modeling through (PLS-SEM). PLS-SEM was selected because the research model includes multiple higher-order constructs and mediation effects. PLS-SEM is particularly suitable for complex, multi-dimensional models, small to medium sample sizes, and strict normality assumptions compared to the CB-SEM model ([Hair & Alamer, 2022](#); [Ringle et al., 2012](#)).

Hierarchical component models were specified to capture the multidimensionality of transformational leadership and work engagement. A disjoint two-stage approach was applied to model the higher-order and lower-order constructs to estimate the complex model without inflating measurement parameters ([Hair et al., 2019](#)). In the first stage, a lower-order reflective model was specified and validated, and then the manifest variable scores were uploaded to the higher-order reflective model and validated ([Becker et al., 2012](#)). The procedure provides more accurate parameter estimates and is recommended when LOCs have been theoretically and empirically validated ([Ringle et al., 2012](#)).

4 | RESULTS AND ANALYSIS

4.1 | Demographic Profile

The demographic of the 165 respondents is incorporated in Table 1. The male respondents were 60 percent, while the female respondents were 39 percent. Skewness towards males shows the reality of male dominance in the workplace in the call center in the Telecom sector of Pakistan. In the age distribution, the majority of the respondents, 78 percent, were between 20 and 30 years, showing a younger workforce dominance in the call center. The remaining 21 percent were in the bracket of 31 to 40, which indicates that older employees are lower than younger. This figure indicates the reality that employees do not prefer to stay long in the industry due to high burnout and psychological demand.

Regarding the Education qualifications of the respondents, 50 percent were bachelor's degree holders, 37 percent were master's degree holders, and 12 percent were MPhil degree holders. These values show a relatively educated workforce, which may influence perceptions of leadership and engagement. Regarding service length, a considerable 78 percent of the respondents had between 1 and 5 years of experience, 21 percent had 6 to 10 years of experience, indicating a predominantly early-tenure workforce. These figure shows high turnover in call center jobs. Lastly, the respondents' distribution across organizations revealed the highest figure of 41 percent, followed by Zong 20 percent, Ufone 19 percent, and Telenor 18 percent.

Table 1*Demographic Profile (N=165)*

Demographics	N	% Age
Gender		
Male	100	60
Female	65	39
Age range		
20-30 years	130	78
31-40 years	35	21
Education		
Bachelor	83	50
Master	61	37
MPhil	21	12
Service duration		
1-5 years	130	78
6-10 years	35	21
Organization		
Mobilink	68	41
Zong	34	20
Ufone	32	19
Telenor	31	18

4.2 | Descriptive Statistics

The descriptive statistics of all items are incorporated in Table 2. Indicated that the mean values for all measurement items ranged from 3.29 to 3.83, suggesting that respondents generally agreed with statements related to transformational leadership, trust, and work engagement. The lowest mean was recorded for item WEVG1 ($M = 3.29$), reflecting comparatively lower perceptions for the vigor dimension of engagement, whereas the highest mean was observed for TR4 items of trust ($M = 3.83$), indicating stronger agreement with that item of trust. Standard deviations ranged between 0.94 and 1.29, demonstrating moderate response dispersion, lower than ± 2.58 , according to ([Hair et al., 2019](#)) guidelines for social sciences.

The skewness values ranged from -0.18 to -0.94 . This trend in response indicates a slight negative skew in the responses. Kurtosis values ranged between -0.88 and 0.75 , suggesting platykurtic distributions with relatively flatter peaks than the normal curve. Both skewness and kurtosis values were within the acceptable thresholds of ± 2.0 recommended by ([Kline, 2023](#)).

Although the Cramér–von Mises (CVM) test results were statistically significant ($p < 0.001$), indicating deviations from a perfect normal distribution. Still, such deviations are not considered problematic in PLS-SEM ([Hair et al., 2019](#); [Sarstedt et al., 2019](#)). Therefore, the dataset meets the distributional assumptions necessary to proceed with further model estimation.

Table 2*Descriptive Statistics of Lower Order Construct*

Name	Mean	Standard deviation	Excess kurtosis	Skewness	CVM P-value
TLII1	3.39	1.09	-0.62	-0.35	0.00
TLII2	3.57	0.98	-0.06	-0.49	0.00
TLII3	3.62	1.08	0.16	-0.78	0.00
TLII4	3.70	0.96	-0.60	-0.39	0.00
TLII5	3.50	0.99	-0.24	-0.39	0.00
TLII6	3.62	0.99	-0.35	-0.50	0.00
TLII7	3.62	1.00	0.03	-0.50	0.00
TLII8	3.63	1.01	-0.36	-0.41	0.00
TLIM1	3.50	1.07	-0.30	-0.42	0.00
TLIM2	3.58	0.96	-0.35	-0.26	0.00
TLIM3	3.55	1.04	0.35	-0.69	0.00
TLIM4	3.74	0.94	-0.70	-0.38	0.00
TLIS1	3.49	1.03	-0.19	-0.49	0.00
TLIS2	3.58	0.94	-0.44	-0.18	0.00
TLIS3	3.54	0.99	-0.51	-0.26	0.00
TLIS4	3.53	1.10	-0.05	-0.63	0.00
TLIC1	3.35	1.17	-0.72	-0.34	0.00
TLIC2	3.62	1.00	-0.68	-0.28	0.00
TLIC3	3.56	1.05	-0.78	-0.19	0.00
TLIC4	3.64	1.08	-0.02	-0.59	0.00
WEVG1	3.29	1.29	-0.88	-0.51	0.00
WEVG2	3.47	1.03	-0.28	-0.50	0.00
WEVG3	3.75	1.02	-0.14	-0.63	0.00
WEVG4	3.58	1.12	-0.57	-0.48	0.00
WEVG5	3.41	1.08	-0.33	-0.40	0.00
WEVG6	3.70	1.06	0.04	-0.72	0.00
WEDD1	3.74	1.16	-0.06	-0.80	0.00
WEDD2	3.65	1.09	0.05	-0.69	0.00
WEDD3	3.58	1.12	-0.40	-0.52	0.00
WEDD4	3.76	1.10	0.06	-0.81	0.00
WEDD5	3.66	1.02	0.02	-0.60	0.00
WEAB1	3.58	1.03	-0.04	-0.60	0.00
WEAB2	3.64	1.07	-0.17	-0.60	0.00
WEAB3	3.64	1.07	0.14	-0.75	0.00
WEAB4	3.69	0.98	0.64	-0.79	0.00
WEAB5	3.71	1.02	0.75	-0.94	0.00
WEAB6	3.78	1.08	0.40	-0.91	0.00
TR1	3.61	1.16	-0.22	-0.69	0.00
TR2	3.51	1.18	-0.66	-0.48	0.00
TR3	3.66	1.14	-0.66	-0.51	0.00
TR4	3.83	0.99	-0.14	-0.60	0.00
TR5	3.79	1.13	0.17	-0.88	0.00

Note. $N=165$, skewness values within ± 2.58 (Kline, 2011), kurtosis values within ± 7 Byrne, 2010

4.3 | Assessment of Lower Order Measurement Model

4.3.1. Reliability and Validity

The lower-order measurement model was assessed for reliability, convergent validity, and discriminant validity (Sarstedt et al., 2019). Details are incorporated in Figure 2 and Table 3. Factor loading for all lower-order components exceeded the cutoff value of 0.70 (Hair & Alamer, 2022). A few items had factor loadings below 0.70, which inflated the validity and reliability of the lower-order construct. In exploratory research, the items can be retained, but in explanatory and theory testing, when an adopted scale is used, the items should be dropped from the model loading below the threshold of 0.70 (Hair et al., 2019). Therefore, transformational leadership items influence (II7 & II8) was dropped due to loading below the threshold values of 0.70. Similarly, work engagement factors absorption (AB1), dedication (DD2), and one item of trust (TR2) were deleted from the lower-order model due to a loading below the cutoff value of 0.70. Subsequently, based on the remaining items, the model was evaluated for reliability and validity indicators.

Reliability of the lower-order construct is assessed through Cronbach's Alpha and Composite Reliability (CR), which are widely accepted criteria. The Cronbach alpha and composite reliability value for all lower-order constructs were above the threshold of 0.70 (Hair et al., 2019). The convergent validity of the constructs was established through average variance extraction (AVE) and exceeded the threshold of 0.50 recommended by. So, we established that the scales were reliable for the measurement of the research constructs.

Figure 2

Measurement Model of Lower Order Constructs

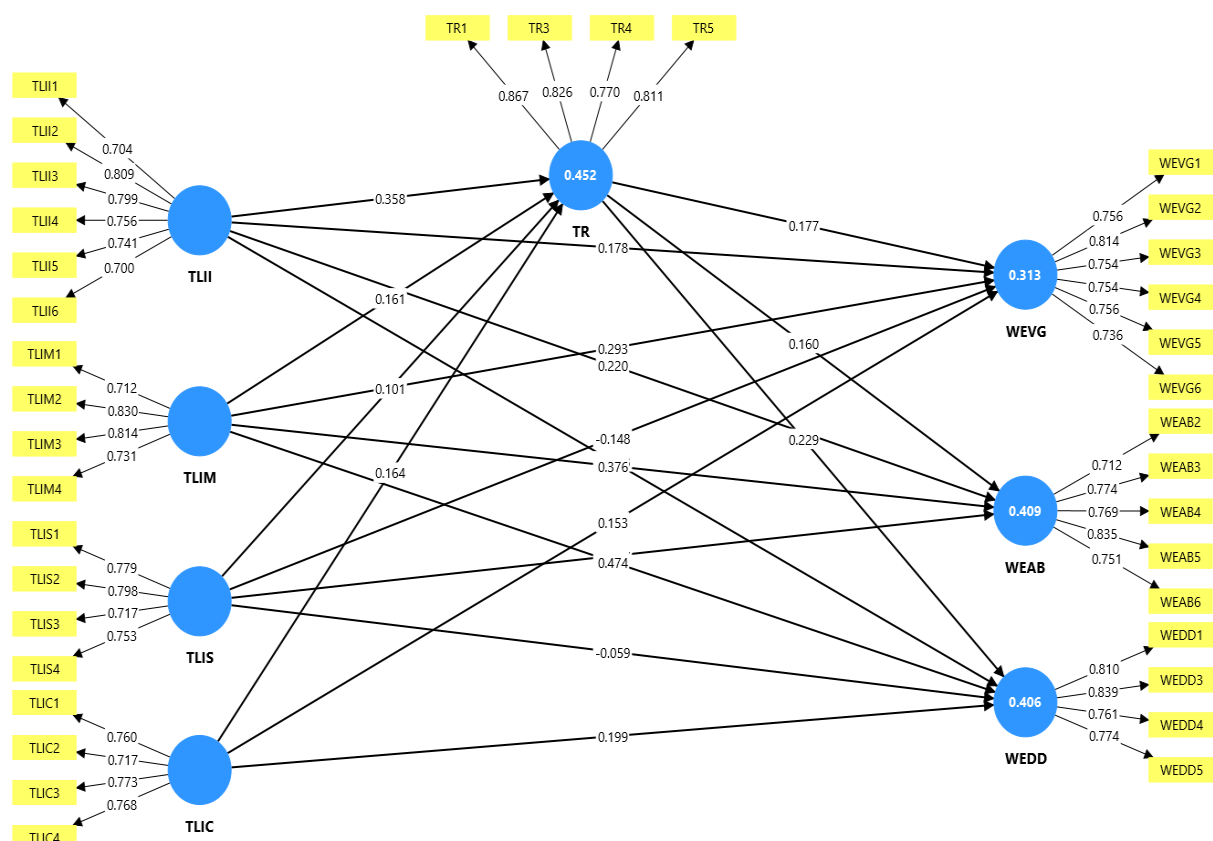


Table 3

Lower Order Components Items Factor Loading, Alpha, AVE, and CR Values.

Construct	Items	Factor loading	Alpha value	AVE	CR
Idealized influence	TLII1	0.704	0.847	0.566	0.851
	TLII2	0.809			
	TLII3	0.799			
	TLII4	0.756			
	TLII5	0.741			
	TLII6	0.700			
Inspirational motivation	TLIM1	0.712	0.774	0.598	0.780
	TLIM2	0.830			
	TLIM3	0.814			
Intellectual stimulation	TLIS1	0.779	0.761	0.581	0.767
	TLIS2	0.798			
	TLIS3	0.717			
	TLIS4	0.753			
Individual consideration	TLIC1	0.760	0.748	0.57	0.751
	TLIC2	0.717			
	TLIC3	0.773			
	TLIC4	0.768			
Vigor	WEVG1	0.756	0.843	0.614	0.864
	WEVG2	0.814			
	WEVG3	0.754			
	WEVG4	0.754			
	WEVG5	0.756			
	WEVG6	0.736			
Dedication	WEDD1	0.81	0.808	0.634	0.811
	WEDD3	0.839			
	WEDD4	0.761			
	WEDD5	0.774			
Absorption	WEAB2	0.712	0.827	0.591	0.835
	WEAB3	0.774			
	WEAB4	0.769			
	WEAB5	0.835			
	WEAB6	0.751			
Trust	TR1	0.867	0.836	0.671	0.843
	TR3	0.826			
	TR4	0.770			
	TR5	0.811			

Note. $N=165$ Alpha > 0.70, CR > 0.70, and AVE > 0.50 (J. F. Hair et al., 2019)

4.3.2 Discriminant Validity

Discriminant validity of the lower order model confirmed through measures of the Fornier-Locker criterion and the (HTMT) (Fornell & Larcker, 1981). Fornier Locker criteria state that the square root of the AVE needs to exceed the inter-construct correlation, while (HTMT) posited that the values reported in the diagonal should be less than 0.85 or, more leniently, 0.90 (Fornell & Larcker, 1981; Henseler et al., 2015).

The Fornell–Larcker outputs are presented in Table 4. The value of the square root of the AVE exceeded the inter-construct correlations, representing acceptable discriminant validity. For example, the value for Idealized Influence (0.753) was greater than its correlations with all other constructs. Parallel array was observed for Inspirational Motivation (0.819), Intellectual Stimulation (0.762), Individual Consideration (0.755), Trust (0.819), Vigor (0.784), Absorption (0.769), and Dedication (0.796).

In addition, the discriminant validity was confirmed using HTMT as presented in Table 5. The values for all lower-order constructs were below the conservative threshold of 0.85 (Kline, 2023). The HTMT value of intellectual stimulation and individual consideration was slightly high but still below the cutoff value of 0.90 (Gold et al., 2001). Both Fornier Locker and HTMT criteria were satisfied, and hence, the discriminant validity for the lower-order measurement model was established.

Table 4

Validity of Lower-Order Constructs Using Fornier-Locker Criterion.

Construct	Fornier-Locker Criterion							
	1	2	3	4	5	6	7	8
1 Idealized influence	0.753							
2 Inspirational motivations	0.642	0.819						
3 Intellectual stimulation	0.619	0.643	0.762					
4 Individual consideration	0.592	0.45	0.669	0.755				
5 Trust	0.622	0.516	0.544	0.522	0.819			
6 Vigor	0.44	0.404	0.323	0.394	0.405	0.784		
8 Absorption	0.551	0.551	0.456	0.441	0.487	0.669	0.769	
6 Dedication	0.428	0.548	0.46	0.449	0.494	0.568	0.656	0.796

Table 5

Discriminant Validity of Lower Order Construct Using HTMT.

Construct	Heterotrait-Manotrait Ratio (HTMT)							
	1	2	3	4	5	6	7	8
1 Idealized influence								
2 Inspirational motivations	0.791							
3 Intellectual stimulation	0.773	0.855						
4 Individual consideration	0.737	0.596	0.884					
5 Trust	0.726	0.640	0.673	0.655				
6 Vigor	0.510	0.495	0.398	0.493	0.471			
8 Absorption	0.652	0.686	0.562	0.554	0.581	0.801		
6 Dedication	0.510	0.693	0.573	0.573	0.587	0.691	0.803	

Note. $N=165$, $HTMT < 0.85$ (Kline, 2011) or (Gold et al., 2001) < 0.90 .

4.4 | Assessment of the High Order Measurement Model: Reliability and Validity.

Reliability and validity measure the higher-order measurement model incorporated in Table 6. As mentioned, a disjoint two-stage approach was used; in the first stage, a lower-order model was assessed and validated. Then the manifest variable scores of lower-order constructs were obtained and modeled as an indicator of a higher-order construct. In the same way as the lower-order model, the higher-order model was assessed to ensure reliability and validity (Hair et al., 2019). In the high-order construct, reliability indicators and internal consistency reliability indicators were included. In validity measures, convergent validity and discriminant validity were included (Hair & Alamer, 2022).

The independent variable transformational leadership, the composite reliability (CR = 0.904), and Cronbach's alpha ($\alpha = 0.858$) surpassed the recommended thresholds of 0.70, indicating satisfactory internal consistency. The average variance extracted (AVE = 0.702) was also above the 0.50 benchmark, confirming convergent validity. Transformational leadership indicators, Idealized Influence (II), Inspirational Motivation (IM), Intellectual Stimulation (IS), and Individual Consideration (IC) demonstrated strong factor loadings (0.800–0.868), meeting the recommended cut-off of 0.70.

Similarly, the dependent variable Work Engagement demonstrated high internal consistency ($\alpha = 0.837$; CR = 0.902) and satisfactory convergent validity (AVE = 0.753). Dimensions of the work engagement: Absorption (AB), Dedication (DD), and Vigor (VG) displayed high factor loadings ranging from 0.838 to 0.902.

Mediator variable trust in leader, the internal consistency measures were acceptable ($\alpha = 0.836$; CR = 0.891), with AVE = 0.671 ensuring convergent validity. All reflective items loaded significantly on their respective construct (0.771–0.867), exceeding the minimum threshold.

Overall, the results confirmed that all higher-order constructs achieved the required standards for reliability and convergent validity, ensuring the robustness of the measurement model.

Table 6

Higher Order Components Factor Loading, VIF, Alpha, AVE, and CR Values.

Construct	Items	VIF	Factor	Alpha	AVE	CR
Transformational				0.858	0.702	0.904
	LV scores – IC	2.019	0.800			
	LV scores – II	2.159	0.861			
	LV scores – IM	2.063	0.821			
	LV scores – IS	2.516	0.868			
Work engagement				0.837	0.753	0.902
	LV scores – AB	2.271	0.902			
	LV scores – DD	1.853	0.862			
	LV scores – VG	1.909	0.838			
Trust				0.836	0.671	0.891
	Trust38	2.254	0.867			
	Trust40	2.00	0.825			
	Trust41	1.593	0.771			
	Trust42	1.877	0.811			

Note. $N=165$. $\alpha > 0.70$, $CR > 0.70$, and $AVE > 0.50$ (J. F. Hair et al., 2019)

4.4.1 Discriminant Validity of the High-Order Construct

Fornell–Larcker criterion and the Heterotrait–Monotrait (HTMT) ratio used to determine discriminant validity of the higher-order constructs transformational leadership, trust, and work engagement. As shown in Table 7, the diagonal values of the square roots of AVE are 0.838 for transformational leadership, 0.819 for trust, and 0.868 for work engagement. Each of these values is higher than the corresponding off-diagonal correlations with other constructs, which ensured discriminant validity.

In addition, HTMT ratio values are below the strict threshold of 0.85: transformational leadership–trust (0.772), transformational leadership–work engagement (0.736), and trust–work engagement (0.632) as depicted in Table 8. The HTMT ratio provides additional evidence of discriminant validity among the higher-order constructs. The results from both the Fornell–Larcker criterion and the HTMT ratio confirm that the higher-order constructs are empirically distinct from each other, meeting the requirements for discriminant validity.

Table 7

Discriminant Validity of Higher-Order Construct Using Former-Locker Criterion.

Construct	Former-Locker criterion		
	1	2	3
1 Transformational Leadership	0.838		
2 Trust	0.659	0.819	
3 Work engagement	0.631	0.536	0.868

Table 8

Discriminant Validity of Higher-Order Construct using HTMT

Construct	Heterotrait-Monotrait Ratio (HTMT)		
	1	2	3
1 Transformational Leadership			
2 Trust	0.772		
3 Work engagement	0.736	0.632	

Note. $N=165$, $HTMT < 0.85$ (Kline, 2011) or (Gold et al., 2001) < 0.90 .

4.5 | Common Method Bias

Harman's single-factor test was run in SPSS using un-rotated principal component analysis for all items to analyze the potential presence of common method bias. The test results showed that the first factor value was 37.32% of the total variance, which is substantially below the recommended threshold of 50% (Podsakoff et al., 2003). Additionally, the full collinearity assessment revealed that all variance inflation factor (VIF) values were below 3.3 (Table 5). We confirmed that common method bias is unlikely to be a significant concern in the present study (Kock, 2015).

4.6 | Model fit Indices

For the assessment composite model, overall model fit indices, assurance is necessary for statistical inferences (Schuberth et al., 2023). The higher-order model was scrutinized to calculate the adequacy of the

PLS-SEM estimation. The details are incorporated in Table 9, where the standardized root mean square residual (SRMR) value is reported as 0.068, which is below the suggested threshold of 0.08 ([Henseler et al., 2016](#)). This indicates an acceptable model fit. The squared Euclidean distance ($d_{ULS} = 0.309$) and the geodesic distance ($d_G = 0.166$) both values were both close to zero, which further confirmed the model's alignment. The chi-square statistic (163.88) was significant, which is expected in larger models and does not necessarily indicate poor fit in PLS-SEM. Finally, the normed fit index (NFI) was 0.837, close to 1 and acceding the minimum acceptable threshold of 0.80 ([Bentler & Bonett, 1980](#)), which further confirming that the model demonstrates adequate fit for further analysis. In spite of some limitation still the model showed adequate fit for further analysis.

Table 9

Model Fit Indices of the Higher Order Model

Model fit	Saturated model	Estimated model
SRMR	0.068	0.068
d_{ULS}	0.309	0.309
d_G	0.166	0.166
Chi-square	163.879	163.879
NFI	0.837	0.837

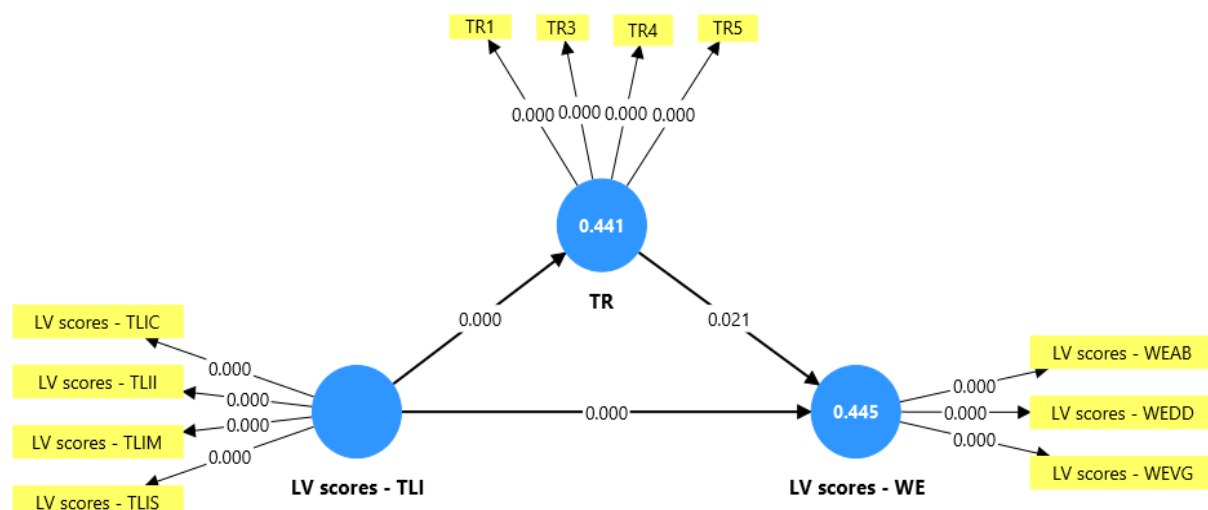
Note. SRMR- Standardized Root Mean Square Residual ≤ 0.08 ([Henseler et al., 2016](#)), NFI- Normed Fit Index ≥ 0.90 ([Bentler & Bonett, 1980](#)).

4.7 | Assessment of the Structural Model

The structural model of the research is incorporated in Figure 3, where the hypothesized relationships among research constructs- transformational leadership, trust, and work engagement are designed.

Figure 3

High Order Structure Model Path Analysis



4.7.1 Collinearity Assessment (VIF) and Coefficient of Determination (R²)

Before testing the structural relationships, collinearity among predictor constructs was assessed to ensure that multicollinearity did not bias the path coefficients. The variance inflation factor (VIF) values were calculated for each set of predictor–criterion relationships, following the guidelines of (Hair & Alamer, 2022). All inner VIF values were found to be well below the conservative threshold of 3.3 suggested by (Diamantopoulos & Siguaw, 2006) and the more lenient threshold of 5.0 proposed by (Hair et al., 2019), indicating the absence of problematic multicollinearity. These results confirm that the predictor constructs are statistically independent enough to yield stable and reliable estimates in the subsequent structural model evaluation. In follow-up, the coefficient of determination (R²) weights reveal the proportion of variance in the endogenous constructs explained by their respective predictors (Hair & Alamer, 2022). As shown in Table 8, the R² for Trust is 0.435***, suggesting that 43.5% of its variance is explained by the model, with an adjusted R² of 0.431***, indicating only a minimal adjustment for model complexity. Similarly, the R² for Work Engagement (WE) is 0.423*** (adjusted R² = 0.416), reflecting a substantial proportion of explained variance in line with the recommended threshold of 0.26 for substantial predictive accuracy in behavioral research (Cohen, 1988). Details are mentioned in Table 10.

Table 10

Coefficient of Determination, R², Adjusted R² and Variance Inflation Factor (VIF)

	R ²	R ² adjusted	VIF
TR	0.435	0.431	1.769
WE	0.423	0.416	1.769

Note. TL-Transformational Leadership, TR-Trust, VIF>3.3

4.7.2 The effect size (f²)

The effect size (f²) examination showed different values of impact among the hypothesized relationships (Table 10). The effect size values considered, 0.02 small, 0.15 medium, and 0.35 large, recommended by (Cohen, 2013), Transformational leadership (TL), demonstrated a significant effect on trust (TR) with an f² value of 0.769, indicating that TL substantially contributes to explaining variance in TR. Besides, TL exerted a medium effect on work engagement (WE) with an f² of 0.236, suggesting an expressive influence. In contrast, the path from trust (TR) to work engagement (WE) showed a small effect size (f² = 0.044), indicating statistically significant, but a modest explained variance in work engagement (WE). In conclusion, TL has large effects on TR and medium effects on WE, while trust has small effects on, WE.

4.7.3 Variance Accounted For (VAF)

The Variance Accounted For (VAF) process establishes the extent of mediation. The (VAF) of less than 20% shows no mediation, between 20% to 80% indicates partial mediation, and above 80% complete mediation (Sarstedt et al., 2019). These values were calculated by dividing the indirect effect of TL on WE through trust in the leader ($\beta = 0.134^*$) by the total effect (direct effect $\beta = 0.509^{***}$ plus indirect effect $\beta = 0.134^*$). The calculation provided a VAF value of 0.208, or 20.8%. As the calculated VAF slightly exceeded

the 20% threshold, the results support the presence of a partial mediation effect, suggesting that trust in the leader plays a small but meaningful role in linking transformational leadership to work engagement.

4.7.4 Hypotheses Testing (Path Coefficient)

A two-tailed bootstrapping procedure with 5,000 resamples at a 95% confidence level was employed to test the hypothesized relationships. The path analysis results indicated that transformational leadership (TL) has a significant positive effect on work engagement (WE) ($\beta = 0.509^{***}$, $t = 6.956$, $p < 0.001$), supporting H1. Transformational leadership (TL) also positively influenced trust (TR) ($\beta = 0.668^{***}$, $t = 13.330$, $p < 0.001$), supporting H2a. Trust, in turn, positively impacted work engagement ($\beta = 0.210^{**}$, $t = 2.303$, $p = 0.021$), supporting H2b. The mediation process confirmed the presence of trust between transformational leadership and work engagement ($\beta = 0.134^{**}$, $t = 2.176$, $p = 0.030$), supporting H3. All paths as theoretically grounded were positive and significant, and a non-significant path was not found in the model. Hence, all hypotheses were tested and supported in the research model. Details are incorporated in Table 11.

Table 11

Structural Model Assessment

No. H	Relationships	β -value	t-value	p-value	VIF	F ²	R ²	Decision
H1	TL -> WE	0.509***	6.956	0.000	1.787	0.236	0.445	Supported
H2a	TL-> TR	0.668***	13.33	0.000	1.000	0.769	0.441	Supported
H2b	TR-> WE	0.210*	2.303	0.021	1.787	0.044		Supported
H3	TL-> TR-> WE	0.134*	2.176	0.030				Supported

Note: N=165, TL-Transformational Leadership, TR-Trust, WE-Work Engagement, VIF>3.3

5 | DISCUSSION

The primary purpose of the study was to investigate the direct relationship between transformational leadership and work, and further to examine the mediating role of trust in the leader as mediator between leadership and engagement among call center employees in the Telecom sector of Pakistan. The results provide strong empirical support for the hypothesized model, contributing valuable theoretical and practical insights.

5.1 | Transformational Leadership and Work Engagement

That analysis indicated that transformational leadership had a significant and direct effect on work engagement ($\beta = 0.509^{***}$, $p < 0.001$), meaning that supervisors who create compelling vision, intellectually provoke, role model, and show individualized consideration can substantially enhance employees' emotional and cognitive involvement in their work. The results have been supported by Social Exchange Theory and Job Demand Resource theory prevailing perspective for leadership and engagement understanding. Similar findings have been reported in a variety of organizations and contexts ([Dinda & Wahyuni, 2023](#); [Dukhaykh et al., 2023](#); [Enwereuzor et al., 2018](#); [Irianto & Basbeth, 2021](#); [Mayr, 2017](#)), where leadership behavior fosters motivation and positive work attitudes. Related to call center employees in the Telecoms sector in Pakistan, the nature of work and environment is different, where work is often repetitive and high-pressure, and transformational leaders appear to mitigate burnout by creating a sense of purpose and recognition.

From a critical perspective, the effect size of TL on WE ($f^2 = 0.236$) indicate a medium practical influence, which is significant but not dominant. Transformation leadership has been countered a powerful driver of work engagement driver, but the less prediction in call center may be due comparative high psychological demands e.g. depression, anxiety and high stress and burnout ([Oh, 2021](#); [Sultan, 2025](#)), high turnover and less time of supervision ([Gabel Shemueli et al., 2021](#)) contextual factors such as job design, workload management, and reward systems may also play important roles call center. Future research could integrate these variables to achieve a more holistic explanatory framework. Possible research endeavor as employees' time of directly with the supervisor and indirect paths that lead to engagement.

5.2 | Transformational Leadership and Trust

The strongest relationship depicted in the model was between transformational leadership and trust in the leader ($\beta = 0.668^{***}$, $p < 0.001$), with an enormous effect size ($f^2 = 0.769$). The prediction power supports the stance that trust is consistently related and a critical psychological mechanism through which leadership exerts influence ([Aman et al., 2023](#); [Kleynhans et al., 2021](#); [McAllister, 1995](#)). In call centers, where employees depend heavily on supervisors for performance feedback, problem resolution, and emotional support, the ability of leaders to convey credibility, fairness, and consistency is paramount.

Still, this phenomenon of high trust raises a critical thought for management and policymakers. In the context of too many good things, high trust can lead to poor acquisition performance ([Bae et al., 2024](#)), excessive trust leads to autonomy and effects negatively group effectiveness ([Langfred, 2004](#)), and sometimes negative organizational outcomes. More critically, the overruled trust level of followers on the leader can lead to unintended consequences such as a toxic triangle, where the follower becomes susceptible with a conducive context, and as a result, the leader works on a personal agenda at the cost of followers and organizational resources ([Mackey et al., 2021](#); [Thoroughgood et al., 2016](#)). Therefore, in leadership programs and succession planning, organizations should prioritize sustaining trust levels.

5.3 | Trust and Work Engagement

Based on results from the trust and work engagement relationship, we can infer that the relationship was significant but still comparatively weaker, with a direct effect of TR on WE ($\beta = 0.210^{**}$, $p = 0.021$). The results have been consistent with previous research indicating that trust enhances employees' willingness to invest discretionary effort and remain committed ([Chughtai & Buckley, 2011](#); [Enwereuzor et al., 2018](#); [Kleynhans et al., 2021](#)). The smaller effect size ($f^2 = 0.044$) suggests that while trust is important, its influence on engagement is more supplementary, possibly requiring reinforcement from leadership behaviors and organizational support systems.

The minor effects pattern trust on engagement may reveal the call center's challenging environment, where job demands (e.g., high call volumes, strict performance indicators) can lead to burnout regardless of trust levels. There might be a possible moderating effect of job resources, such as job autonomy or training, which could amplify the positive impact of trust on engagement.

5.4 | The effects of transformational leadership on work engagement through trust in the leader

The mediation effects revealed that the mediation effect of trust in the leader between transformational leadership and work engagement ($\beta = 0.134^*$, $p = 0.030$) establishes that TL not only influences WE directly but also indirectly through building trust. These findings are consistent with the well-known theory of Social

Exchange ([Blau, 1964](#)), which postulates that when leaders exchange material and non-material things with team members in return, it creates a psychological climate where employees feel safe to reciprocate with higher engagement. Still, the mediation process is partial rather than complete, showing that transformational leadership also has a direct impact on work engagement besides the trust path.

Critically, the modest size of the indirect path suggests that cultural and sectoral context, nature of work, measurement, construct overlap, and organizational dynamics play a significant role in leadership and engagement dynamics. In a collectivist culture in call centers like Pakistan, leaders may exert direct influence through personal disposition and leadership styles ([Hofstede, 2011](#)). Other pathways in parallel and unmeasured mediator psychological safety or perceived organizational support may operate in the relationship ([Saks, 2019](#)). In addition, the trust construct is based on individual propensity and varies with individual personality ([Chughtai & Buckley, 2011](#)). One item was deleted from the trust construct following ([Hair et al., 2019](#)) guidelines, which may have reduced the variance explained by trust. Due to these contradictions, still trust in leaders is the main factor translating transformational leadership effects on work engagement in the call center in the telecom sector of Pakistan.

6 | CONCLUSION

In conclusion, the study examined the direct effect of transformational leadership on work engagement. It investigated the trust in the leader as a mediator between leadership and engagement in call center employees in the telecoms sector of Pakistan. The results confirmed the direct effect of transformational leadership on work engagement, and trust was found as a partial mediator between leadership and engagement. Theoretically, the study advanced the Job Demand Resource (JD-R) theory by incorporating trust effects between the links of transformational leadership and work engagement. Practically, recommended to managers and policymakers on transformational leadership development intervention to advance transformational leadership behaviors and harnessing trust in call centers of the telecom sector of Pakistan.

6.1 | Limitations and Future Research

The study has been grounded theoretically and processed through rigorous methodology, but still has methodological and contextual limitations that should be acknowledged.

First, the study was designed cross-sectionally, which limits causal inference. Future research could extend the longitudinal or experimental studies to better establish directionality.

Second, all construct data was collected from a single source, e.g., call center employees, which might lead to common method bias. Still, several remedies and precautions were undertaken to overcome the issue (e.g., anonymity assurance, randomization) and statistical remedies, such as Harman's Single Factor analysis. Future endeavors may be taken to collect data from different sources, more importantly, 360-degree or at least peers and supervisors.

Third, the sample size was decided following the recommended procedure by ([Hair et al., 2019](#); [Memon et al., 2020](#)). However, a large sample size is recommended for stable results. In addition, a pilot study before full-scale data collection can help to counter measurement and procedural issues ([Arain et al., 2010](#)). But the pilot study was not conducted in this case because the study employed well-established instruments previously validated in similar contexts. Therefore, conducting a pilot study and the geographical scope is limited to the

call center telecom sector in Pakistan. Future research could expand the sample across diverse sectors, regions, and cultural contexts and pilot study to test the model's broader applicability. In addition, a pilot study before full-scale data collection can help to counter measurement and procedural issues ([Arain et al., 2010](#)). But the pilot study was not conducted in this case because the study employed well-established instruments previously validated in similar contexts. Future research might comprise a pilot phase when adapting the design to different settings.

Finally, several items were deleted during measurement model assessment to improve the reliability and validity of the lower-order constructs, which may have slightly narrowed construct coverage. The dropping items process followed the standard procedures recommended ([Hair et al., 2019](#)), which states that items loading below the threshold of 0.70 should be dropped from the measurement model when using adopted scales. Future studies could refine measurement instruments to capture a more comprehensive view of the constructs.

6.2 | Theoretical Implications

The research contributes to leadership and engagement literature by extending the Job Demands Resources (JD-R) model and Social Exchange Theory (SET) to the Telecom sector located in a developing economy, e.g., Pakistan. Further, the study emphasizes the mediating effect of trust between the relationship between transformational leadership and work engagement, emphasizing that leadership behaviors can indirectly influence employee engagement through relational mechanisms.

6.3 | Practical Implications

The following are the practical recommendations to telecom call center management and policymakers. Practically, from the results of the direct influence, the human resource department that aims to generate levels of employee engagement in the long term should offer new programs and training workshops that improve transformational leadership behaviors at the workplace ([Nielsen & Munir, 2009](#)). From indirect effects, followers' engagement could be further enhanced through fostering trust in the supervisor through fair communication.

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