

AMBIDEXTROUS LEADERSHIP AND INNOVATIVE WORK BEHAVIOUR: A SERIAL MEDIATION MODEL OF CREATIVE SELF-EFFICACY AND WORK ENGAGEMENT AMONG IT PROFESSIONALS

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Abstract: This study focuses on IT professionals who are working in the firms, located along the Special Economic Zone (SEZ) in Old Mahabalipuram Road (OMR) IT corridor in Chennai, India. It is intended to explain the influence of ambidextrous leadership (AL) on innovative work behaviour (IWB), and to analyse the mediating mechanisms of creative self-efficacy (CSE) and work engagement (WE) between these two. A time bound survey method was conducted by sending questionnaires to all ELCOT and SIPCOT zone employees resulting in 407 usable responses from the questionnaires. The conceptual model proposed was then validated by applying the structural equation modelling (SEM) technique in the software SmartPLS. The results show that AL has a significant direct positive impact on IWB ($\beta = 0.308$, $t = 5.622$) and CSE ($\beta = 0.710$, $t = 21.507$). CSE, in turn, significantly enhances IWB ($\beta = 0.210$, $t = 3.507$) and WE ($\beta = 0.297$, $t = 4.607$). AL also positively influences WE ($\beta = 0.212$, $t = 3.341$), which subsequently strengthens IWB ($\beta = 0.282$, $t = 5.745$). Additionally, CSE and WE jointly demonstrate partial serial mediation between AL and IWB ($\beta = 0.059$, $t = 3.449^*$). Overall, the findings indicate that AL promotes IWB both directly and indirectly by boosting employees' creative self-efficacy and enhancing their work engagement.

Keywords: Ambidextrous leadership; Creative self-efficacy; Work engagement; Innovative work behaviour; Serial mediation

1. INTRODUCTION

In the intensifying business landscape and technological uncertainty, employees' innovative work behaviours (IWB) drastically change the market competition between industry players (Yu et al., 2020; Colombo et al., 2019).



With this context, industries seeking and depending on flexible, adaptive leadership style to stimulate employees' innovative consciousness (Rubera and Kirca, 2012; Lee et al., 2019; Martínez-Climent et al., 2019; Hunter et al., 2017). Sound leadership practices have the potential to enhance workers' pursuit of IWB (Uppathampracha and Liu, 2022). Thus, ambidextrous leadership (AL) encompass the dual capacity to shift between opening and closing leadership which nurtures IWB (Tuan, 2017). AL is the capacity to assess the suitability of leadership behaviour across situations and to demonstrate complementary leadership behaviour, a capacity which is important in IWB (Kusumah and Setiawan, 2025; Schuckert et al., 2018). Particularly in facing the disagreement of innovation, AL can find out the gap more effectively without losing the organisational goals (Kao et al., 2015).

However, innovation is characterised by many factors, such as corporate policies, leadership styles and creative resources (Arundele et al., 2019). In which, most of the IWB of the employees driven by creative self-efficacy (CSE) which promotes employee's creativity which are more aligned with complex task (Yidong and Xinxin, 2013; Carmeli and Schaubroeck, 2007). Supportive leadership behaviours have consistently been found to shape SE, which in turn predicts employees' CSE and innovative performance (Tierney and Farmer, 2002). Along with CSE, work engagement (WE), a psychological state related to work which impacts the employee outcomes. Bakker et al. (2010), argued that adequate job resources and supportive landscape lead to improve employee well-being. In addition, several researchers (Han et al., 2016; Jia et al., 2024; Luo et al., 2016) has examined the effects of AL on fostering IWB and SE. However, there is a dearth in literature support about this serial mediation of CSE and WE between AL and IWB. Prior studies (Uppathampracha and Liu, 2022, Usman et al., 2022, Guo et al., 2025) found that the sequential mediation pathways (from leadership to innovation via other mediators, such as self-efficacy, engagement, and passion) explain more than single mediator models. Taking this forward in the view of another dimension, to fill these research gaps, this study aims to investigate how ambidextrous leadership (AL) influences innovative work behaviour (IWB), and to determine whether creative self-efficacy (CSE) and work engagement (WE) individually and sequentially mediate this relationship with the research question:

RQ1: To what extent is AL positively related to IWB among employees?

RQ2: Does CSE mediate the relationship between AL and IWB?

RQ3: Do WE mediate the relationship between AL and IWB?

RQ4: Do CSE and WE act as serial mediators in the relationship between AL and IWB?

2. BACKGROUND THEORY:

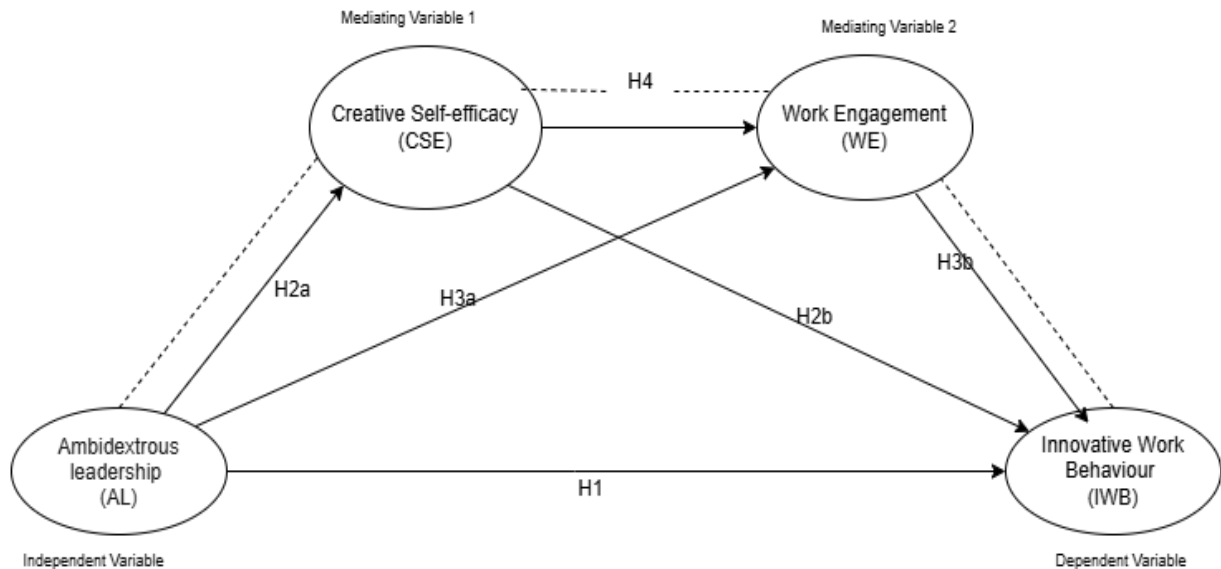
Based on the above research question, AL rooted in transformational–transactional theory, (Bass, 1990; Rosing et al., 2011) whereas CSE dealt with Social Cognitive Theory (SCT) (Bandura, 1986) a cognitive pathway that boosts employees' confidence in innovation (Tierney and Farmer, 2002). Complementing this, the Job Demands–Resources (JD-R) model (Bakker and Demerouti, 2007) suggests that leadership can be viewed as a resource that facilitates WE which will drive employees to give efforts to achieve innovative results. These theories indicate that AL has a cognitive and motivational result on IWB and provide the foundation for the proposed mediation hypothesis and the serial mediation hypothesis.

Leadership being such a crucial element in an organisation, AL highlights the leader's ability to balance exploration through vision and inspiration with exploitation through structure and control which can be best understood through the transformational–transactional leadership framework (Bass, 1990; Rosing et al., 2011) and enables leaders to be more efficient in creating innovation. To explain these psychological mechanisms the study also seeks an attention towards SCT (Bandura, 1986), which emphasizes the role of CSE in shaping behaviour and acts as a cognitive pathway through which AL enhances employees' confidence in their ability to generate novel ideas, ultimately fostering IWB (Tierney and Farmer, 2002). Complementing this, the JD-R model (Bakker and Demerouti, 2007) provides a motivational perspective, suggesting that leadership functions as a critical resource that strengthens WE and energizes employees to invest effort in innovation.

Proposed Hypothetical Model:

Thereby supporting the proposed mediation and serial mediation hypotheses depicts in Figure 1.

Figure 1: Hypothetical model



Note: —→ direct effect; - - - - -→ indirect effect

Formulation of hypotheses:

Ambidextrous leadership (AL) and innovative work behaviour (IWB):

Duncan (1976), coined AL as the duality of the individual i.e., opening and closing are compliment and align with innovation. The organisation could use the resources through exploration and exploitation to achieve the future opportunities as it combines the opening and closing behaviours (March, 1991; O'Reilly III, 1996). With this note, Rosing et al. (2011) proposes that AL has three core elements: opening behaviours, which drives exploration; closing behaviours, which endorse exploitation; and temporal flexibility, which enables leaders to shift between these approaches as situational demands arise.

Further, the sustainability of the organisation foster by continuous innovation and consistent adaptability to the outside environment (Kuvaas et al., 2012; Tian et al., 2018). Therefore, IWB encompasses employee actions aimed at identifying and implementing novel opportunities and solutions in the workplace, including idea generation, securing support, advancing initiatives, and testing feasibility (Scott and Bruce, 1994). Thus, the study seeks how AL plays the crucial role to engage in IWB (Wen et al., 2021). Evidence from empirical studies (Wang et al., 2026) demonstrate AL positively influences team performance can also be conducive to innovation among employees. Hence, ambidextrous leadership equips leaders to simultaneously stimulate creativity and maintain performance standards, fostering an organizational environment where employee innovation behaviour thrives (Elsaied, 2026; N. Li, 2026; Wang et al., 2026). Taken this empirical evidence, the present study formulates the hypothesis as:

H1: AL positively related to IWB

Ambidextrous leadership (AL) and creative self-efficacy (CSE)

CSE refers to individual's confidence in loyally exploring new features for innovation (Oborn et al., 2013), rooted in the broader notion of self-capacity belief as the skill, knowledge, and ability needed to perform creative acts practically with available resource and tools (Farjoun, 2010), making it a key element of workplace creativity that

reinforces employees' participation in creative behaviour (Gibson & Birkinshaw, 2004). When the leaders exhibit transactional aspects of ambidextrous, they are encouraged to work efficiently in resolving complex tasks (Rosing et al., 2011). In such conditions, leaders monitor employees' faults, irregularities, and deviations, directing them toward greater risk aversion and performance orientation, thereby achieving results in shorter timeframes and at reduced costs (Kark et al., 2015). Also, transformational perspective of AL, can often act as a mentor to bring out new ideas during uncertain situation. These ideas are believed as employees' CSE. Higher the CSE have strong sense of managing the complex task in different environment (Gong et al., 2009; Prussia et al., 1998). A contemporary atmosphere can be created by ambidextrous leaders who often engage in creative ideas to improve the productivity (Walumbwa and Schaubroeck, 2009; Walumbwa et al., 2011) Therefore, we test the hypothesis as:

H2a: AL positively related to CSE

Creative self-efficacy (CSE) and innovative work behaviour (IWB)

SCT (Bandura, 1997) suggests that self-efficacy beliefs influence the amount of effort and persistence people put into a task; people will readily engage in activities for which they believe they have the skills, and avoid activities in which they believe they lack the skills. Individuals who are creative self-efficacious feel confident in their ability to come up with new and valuable results, which encourages them to develop, promote and apply new ideas despite the uncertainty and opposition that innovation often brings (Tierney and Farmer, 2002; Gong et al., 2009). This connection can be supported by some empirical studies: The confidence in one's creative ability has been shown to significantly predict innovative work behaviour across contexts, where the more confident employees are in their capacity to be creative, they are more willing to take risks in championing and implementing new ideas (Newman, et al., 2018; Afsar and Masood, 2018; Javed et al., 2018; Bozdoğan, 2023). Considering these literatures, the hypothesis:

H2b: CSE positively related to IWB

Ambidextrous leadership (AL) and work engagement (WE)

WE featured by positive, fulfilling, and job-related characteristics followed by vigor, absorption and dedication. It is a motivational factor of employees which is eternal and does not depend on specific situation (Uppathampracha and Liu, 2022). While AL has been shown to positively impact work engagement and performance, its effectiveness can be inclined by contextual factors such as organizational climate and cultural cognition. These factors can moderate the relationship between AL and WE, suggesting that the implementation of AL should be tailored to the specific organizational context to maximize its benefits (Muhammad et al., 2025; Javeid, 2025). Additionally, the role of intellectual capital and environmental dynamics as moderators indicates that AL's impact may vary across different sectors and organizational settings (Shalahuddin, 2025). Based on these supporting literatures, the study postulates the hypothesis as:

H3a: AL positively related to WE

Work Engagement (WE) and Innovative Work Behaviour (IWB)

Job resources positively impact both WE and IWB, suggesting that supportive work environments enhance employee innovation (Rahma et al., 2025). In Indonesian startups, WE fully mediate the negative effects of job demands on IWB, emphasizing the need for resource management to foster innovation (Rahma et al., 2025; Satrianto et al., 2026). The link between decent work and IWB is articulated through a chain of mediation model with intrinsic motivation and WE. The study also uncovered that an organizational innovation climate not only enhances the IWB level directly, but also fortifies the link between decent work and innovative outcomes (Yan, 2026). Moral identity was also found to moderate the relationship between leadership and IWB, suggesting that employees with high moral identities are more responsive to these leadership's engagement-enhancing effects (Elsaied, 2026; Al-Qatawneh and Abutayeh, 2026; Blasco-Giner et al., 2026).). A similar pattern was observed for trust in leaders in the public hospital context, as it was found to boost innovative behaviors partly via increased employee engagement, though with the caveat that sometimes-high-performance work systems (HPWS) undermined the link between employee engagement and innovative behaviors (Jatoi & Channar, 2026). Thus, the study testing the hypothesis as:

H3b: WE positively related to IWB

The serial mediation role of CSE and WE

In addition to its direct impacts on employees' CSE and their IWB, CSE is hypothesized to be the psychological process through which AL manifests itself in IWB. Leader behaviours do not directly cause the consequences of followers, but rather through their positive or negative self-referential beliefs (Bandura, 1997). Autonomy-granting behaviours followed by corrective behaviours to close the session can foster followers' confidence in their creative ability, which in turn can ignite followers to generate and implement new ideas, (Gong et al., 2009). Likewise, Yasmeen and Ajmal (2024) demonstrated that the self-belief employees have in their creative ability is strengthened by AL, which boosts employee creativity. Additionally, Kyaw and Soe (2024) confirmed that AL greatly increases the self-efficacy of employees, which in turn directly influences their IWB in the software development industry. This evidence suggests that ambidextrous leadership is not a factor on its own in innovativeness outcomes, but rather, it is through the confidence it creates in the creative competence of employees. It is confirmed through the literature evidence (Zahra et al., 2017) that AL is influenced to IWB via the mediation variable CSE.

WE act as a crucial psychological process between AL and IWB. Thus, ambidextrous leaders help to foster employees' engagement by balancing the balance of their exploratory and exploitative behaviors, which consequently stimulates their intellectual ability and motivation to contribute extra energy and creativity into the job (Jadu et al., 2026). This is like the related leadership types, as servant and virtuous leadership have been found to positively influence IWB indirectly through levels of employee engagement (Hu & Thien, 2026; Elsaied, 2026), and entrepreneurial leadership positively influences IWB through the intervening role of employee engagement as well (Singh et al., 2026). When taken together, this evidence indicates that ambidextrous leadership has a relationship to innovation outcomes through boosting employees' psychological investment in their work, a connection which is mediated by employee engagement.

CSE and WE can also act as a second step process between AL and IWB. In line with the findings of SCT (Bandura, 1997), ambidextrous leaders' complementary opening and closing behaviours enhance employees' self-efficacy regarding their creative capability, which in turn becomes a personal resource, in line with the findings of JD-R (Bakker and Demerouti, 2007), leading to higher levels of psychological investment in the job and subsequently work engagement, which is followed by sustained innovative effort. This staged, cognitive to motivational pathway is consistent with the findings that showed that serial mediation models can better explain the innovation outcomes than the single mediator models (Uppathampracha & Liu, 2022; Usman et al., 2022; Guo et al., 2025). For this reason, it has been suggested that the following hypothesis be tested:

H4: Self-efficacy and work engagement serially mediate ambidextrous leadership and innovative work behaviour

3. METHODOLOGY

Research design and approach

This research adopted a quantitative, descriptive design to explore the relations among the variables under investigation. Data were gathered from employees by means of a cross-sectional survey, and the proposed associations were tested empirically through structural equation modelling (SEM).

Sample and data collection

The population comprised IT professionals employed in SEZ companies along the OMR IT corridor in Chennai, India, drawn from the ELCOT and SIPCOT zones. Following Krejcie and Morgan's (1970) guidelines for a population exceeding one million, a minimum sample of 384 was required; the target was set at 450 to accommodate non-response. Respondents were selected using dis-proportionate Stratified Random Sampling Method, and respondents within companies were drawn on a non-proportionate basis, with approximately 50 responses targeted per firm across nine SEZ companies (five in ELCOT, four in SIPCOT). Of 450 questionnaires distributed, 428 were returned (241

from ELCOT, 187 from SIPCOT). After multivariate outlier screening using Mahalanobis distance ($p < 0.001$), 21 cases were removed, yielding a final usable sample of 407.

The study maintained the anonymity and confidentiality strictly. No potential conflict of interest was reported by the authors. Moreover, there is no external funding for this research.

Common method bias, Normality and multi collinearity

The study has performed diagnostic checks for common method bias, multicollinearity and normality to ensure the accuracy and robustness of the dataset used for hypothesis testing. To determine Potential Common Method Bias, Harman's single factor test was performed and the results revealed that the first factor captured only a small portion of the variance, thus not being the predominant factor in the data. Multicollinearity was checked by the tolerance values and the Variance Inflation Factor (VIF) values, which was within the recommended limits by Hair et al., (2010) indicating that there was no high correlation between the predictor variables. Skewness and kurtosis statistics were used to assess normality of the data with all values being within suggested boundaries (Kline, 2011), indicating that data had an approximately normal distribution and were suitable for further multivariate analysis.

Measures and their dimensions

The survey instrument used for data collection included a demographic section along with validated scales established through prior empirical research. Most constructs were assessed on a five-point Likert scale (1 = “strongly disagree/never” to 5 = “strongly agree/always”), whereas work engagement (WE) was assessed on a seven-point frequency scale ranging from 0 = “never” to 6 = “always”.

The measurement model comprises six latent constructs, each operationalized through multiple reflective indicators. AL is captured through two first-order dimensions — Open Leadership Behaviour (OLB), measured using seven items (OLB1–OLB7), and Closed Leadership Behaviour (CLB), measured using seven items (CLB1–CLB7). CSE is measured as a unidimensional construct with six items (CSE1–CSE6). WE have three sub-dimensions — Vigor (VG) with four items (VG1–VG4), Dedication (DN) with four items (DN1–DN4), and Absorption (AN) with three items (AN1–AN3). Finally, IWB the key outcome variable, is measured using nine items (IWB1–IWB9).

Table 1 Summarises the constructs, item counts, and sources

Table 1. Measures and sources

Construct	No. of items	Source
Ambidextrous leadership (opening 7; closing 7)	14	Rosing, Frese and Bausch (2011)
Creative self-efficacy	6	Karwowski et al. (2018)
Work engagement (vigor 4; dedication 4; absorption 3)	11	Schaufeli et al., (2006)
Innovative work behaviour	9	Janssen (2000)

Data analysis method

Data were analysed using SPSS 23.0 and SmartPLS. Descriptive and frequency analyses were conducted to profile the sample, while SEM was employed to examine the hypothesised direct and serial mediation effects. Bootstrapping procedures were used to estimate the significance of indirect effects.

Table 2: Demographic attributes of the Respondents

Attributes	Grouping	Occurrence (N=407)	Percentage

Gender	Male	230	56.5
	Female	177	43.5
Age Group	Upto 25 years	109	26.8
	25–35 years	124	30.5
	35–45 years	97	23.8
	Above 45 years	77	18.9
Education	Bachelor's degree	293	72.0
	Master's degree	114	28.0
Experience	1–5 years	199	48.9
	6–10 years	127	31.2
	More than 10 years	81	19.9
Job Level	Entry-level	202	49.6
	Mid-level	124	30.5
	Senior-level	81	19.9
Department	Administration Department	32	7.9
	Human Resource Development	81	19.9
	Finance Department	57	14.0
	Cybersecurity	36	8.8
	Networking/Infrastructure	39	9.6
	IT Support/Help Desk	29	7.1
	Software Development/Engineering	38	9.3
	Data & Analytics	32	7.9
	Project Management/PMO	30	7.4
	Sales & Marketing (Tech-oriented)	33	8.1
Annual Salary (LPA)	Less than 5 Lakhs	133	32.7
	5–10 Lakhs	109	26.8
	10–15 Lakhs	89	21.9
	More than 15 Lakhs	76	18.7

The sample comprised 407 IT professionals, the majority of which were male (50.5%) but represented a good balance of sex across the sample. Most respondents were young working professionals and mostly below the age of

35 years. They were a relatively early career workforce, with a large proportion having a Bachelor's degree and almost half with 1-5 years of experience.

On the job hierarchy, entry level jobs were the largest, followed by mid-level jobs. Most respondents came from various technical and support functions, including Human Resource Development, Finance, Software Development, Networking, and Data & Analytics.

Distribution of salary showed that almost one in three earns less than 5 LPA indicating a mixture of early career and mid-career professionals.

4. RESULTS

Assessment of Model Fit

Model fit was assessed to evaluate the adequacy of the specified structural model in reproducing the observed data, following the fit criteria recommended for variance-based structural equation modelling (Henseler et al., 2016). As shown in the model fit table, the Standardized Root Mean Square Residual (SRMR) values for the saturated model (0.070) and the estimated model (0.072) both fell below the recommended threshold of 0.08 (Hu and Bentler, 1999; Henseler et al., 2016), indicating an acceptable degree of correspondence between the observed and model-implied correlation matrices. The Normed Fit Index (NFI) values of 0.912 for the saturated model and 0.910 for the estimated model closely met the acceptable benchmark of above 0.91 (Bentler and Bonett, 1980), further supporting the model's adequacy. Additionally, the squared Euclidean distance (d_ULS) values of 10.443 and 11.022, along with the chi-square-based exact fit statistics of 2.782 and 2.753 for the saturated and estimated models respectively, showed minimal divergence between the two models (Dijkstra and Henseler, 2015; Lohmöller, 1989), indicating that the estimated model closely approximates the theoretical saturated model. Collectively, the fit indices indicate that the proposed structural model achieves an acceptable and robust alignment with the data, thereby strengthening confidence in the validity of the hypothesised associations examined in this study.

Table 3. Results of the Measurement Model (Outer Model)

Construct	Item	Factor Loading	Cronbach's Alpha	CR	AVE
Opening Leadership Behaviour (OLB)	OLB1	0.769	0.872	0.901	0.566
	OLB2	0.761			
	OLB3	0.731			
	OLB4	0.762			
	OLB5	0.719			
	OLB6	0.788			
	OLB7	0.734			
Closing Leadership Behaviour (CLB)	CLB1	0.826	0.910	0.929	0.650
	CLB2	0.806			
	CLB3	0.816			

	CLB4	0.772			
	CLB5	0.778			
	CLB6	0.831			
	CLB7	0.812			
Creative Self-Efficacy (CSE)	CSE1	0.794	0.904	0.926	0.676
	CSE2	0.814			
	CSE3	0.840			
	CSE4	0.831			
	CSE5	0.829			
	CSE6	0.825			
Vigor (VG)	VG1	0.815	0.821	0.882	0.651
	VG2	0.784			
	VG3	0.813			
	VG4	0.814			
Dedication (DN)	DN1	0.843	0.853	0.900	0.693
	DN2	0.820			
	DN3	0.838			
	DN4	0.829			
Absorption (AN)	AN1	0.825	0.764	0.864	0.679
	AN2	0.815			
	AN3	0.833			
Innovative Work Behaviour (IWB)	IWB1	0.821	0.936	0.947	0.663
	IWB2	0.769			
	IWB3	0.851			
	IWB4	0.827			
	IWB5	0.831			
	IWB6	0.819			
	IWB7	0.768			
	IWB8	0.824			
	IWB9	0.818			

All factor loadings exceeded the recommended threshold of 0.70 (Hair et al., 2019), and all Cronbach's alpha and composite reliability values exceeded 0.70, while AVE values exceeded the 0.50 threshold (Fornell and Larcker, 1981), confirming adequate internal consistency and convergent validity for all constructs (table 3).

Discriminant Validity

The discriminant validity of the structural equation modelling (SEM) approach was tested through the procedure recommended by Fornell and Larcker (1981): the square root of the AVE values was compared to the values of the correlation coefficient in the corresponding rows and columns.

Table 4. Discriminant validity

<i>Construct</i>	<i>OLB</i>	<i>CLB</i>	<i>CSE</i>	<i>VG</i>	<i>DN</i>	<i>AN</i>	<i>IWB</i>
<i>Fornell and Larcker Criterion</i>							
OLB	0.852						
CLB	0.706	0.811					
CSE	0.650	0.653	0.822				
VG	0.343	0.237	0.378	0.807			
DN	0.387	0.384	0.423	0.721	0.833		
AN	0.419	0.378	0.401	0.672	0.708	0.824	
IWB	0.521	0.543	0.554	0.461	0.452	0.443	0.815
<i>HTMT Criterion</i>							
OLB							
CLB	0.792						
CSE	0.733	0.729					
VG	0.406	0.266	0.439				
DN	0.449	0.424	0.481	0.850			
AN	0.514	0.452	0.484	0.847	0.845		
IWB	0.575	0.586	0.600	0.849	0.504	0.524	

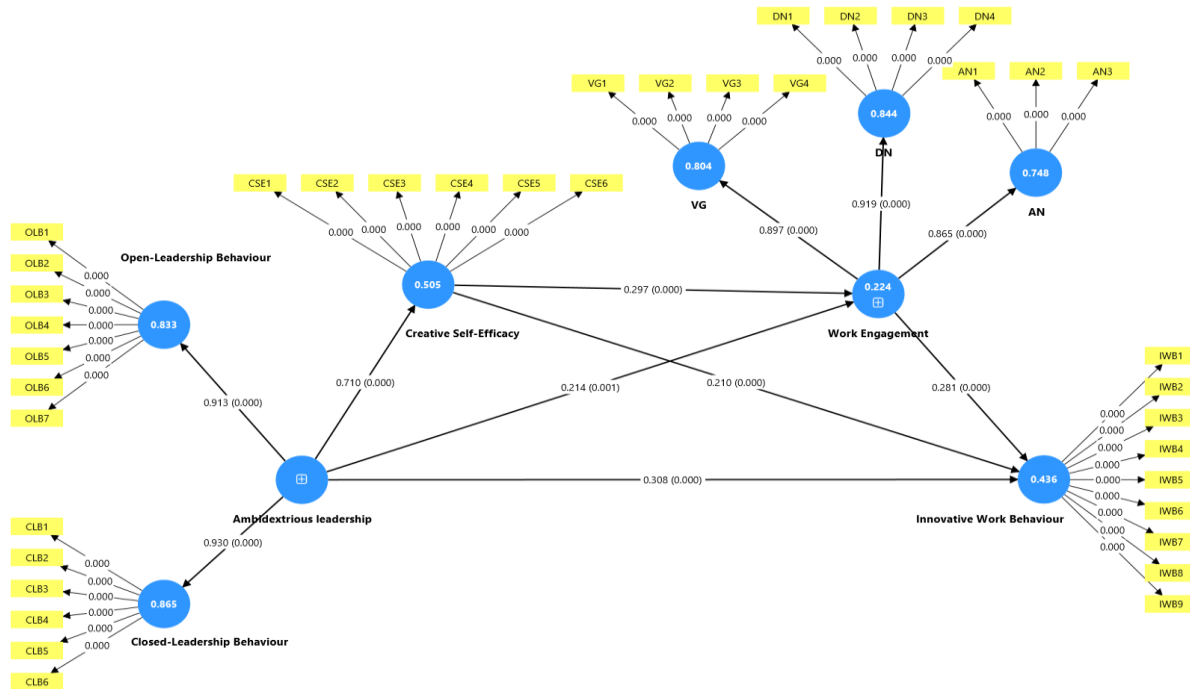
Note(s): Diagonal values in the Fornell–Larcker section (in bold) represent the square root of the Average Variance Extracted ($\sqrt{AVE}$); off–diagonal values represent inter–construct correlations. In the HTMT section, only the lower–triangle HTMT ratios are reported.

The results of discriminant validity testing, based on the HTMT and Fornell-Larcker approaches, are presented in Table 4. Since all inter-construct correlations are lower than the square roots of their respective AVE values, discriminant validity is satisfactorily supported. Furthermore, the supporting evidence for discriminant validity is that all the constructs' HTMT ratios are below the recommended threshold of 0.90, particularly for the constructs' sub-dimensions of work engagement (Vigor, Dedication and Absorption) which are conceptually expected to have higher-order constructs due to the shared scale.

Assessment of structural model:

Bootstrapping in SmartPLS is used for structural model analysis, which shows that the six assumed direct relationships have strong empirical support. Ambidextrous leadership (AL) had a significant positive impact on innovative work behaviour (IWB) ($\beta = 0.308$, $t = 5.622$, $p < 0.001$); thus, it was confirmed that leaders who have the balance between exploring and exploiting new ideas directly influence employees to behave innovatively (H1 supported). The ambidextrous leadership had the highest relationship with creative self-efficacy (CSE) ($\beta = 0.710$, $t = 21.507$, $p < 0.001$), which indicates that ambidextrous leadership greatly boosted employees' self-confidence in their creative skills (H2 supported). CSE in turn had a significant positive impact on IWB ($\beta = 0.210$, $t = 3.507$, $p < 0.001$), thus suggesting that the employees who are confident about their creative ability are more likely to participate in innovative behaviour (H3 supported).

Figure 2: Measurement model



Moreover, AL also positively influenced work engagement (WE) ($\beta = 0.212$, $t = 3.341$, $p < 0.001$), which is important because it indicates that AL energizes employees' vigor, dedication and absorption (H4 supported). In this case, WE itself was found to be a significant predictor of IWB ($\beta = 0.282$, $t = 5.745$, $p < 0.001$), which confirms that employees that are engaged are more likely to exhibit innovative behaviors (H5 supported). Furthermore, CSE was a significant predictor of WE ($\beta = 0.297$, $t = 4.607$, $p < 0.001$), which means that employees who had a high creative confidence also had a high WE (H6 supported).

Table 5: Direct Effects

<i>Hypothesis</i>	<i>Path</i>	<i>β (Beta)</i>	<i>SD</i>	<i>T-value</i>	<i>P-value</i>	<i>Result</i>
H1	AL → IWB	0.308	0.055	5.622	<0.001**	Supported
H2	AL → CSE	0.710	0.033	21.507	<0.001**	Supported
H3	CSE → IWB	0.210	0.060	3.507	<0.001**	Supported
H4	AL → WE	0.212	0.064	3.341	<0.001**	Supported
H5	WE → IWB	0.282	0.049	5.745	<0.001**	Supported

H6	CSE → WE	0.297	0.064	4.607	<0.001**	Supported
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**Note: *p < 0.01 level of significance (bootstrapping procedure, SmartPLS)*

Table 6: Indirect Effects

<i>Path</i>	<i>β (Beta)</i>	<i>SD</i>	<i>T-value</i>	<i>P-value</i>	<i>Result</i>
AL → CSE → IWB	0.149	0.043	3.444	0.001**	Full mediation
AL → WE → IWB	0.059	0.020	3.033	0.002**	Full mediation
AL → CSE → WE → IWB (serial)	0.059	0.017	3.449	0.001**	Full serial mediation

**Note: *p < 0.01 level of significance*

In addition to these direct effects, mediation analysis indicated that both CSE and WE partially mediated these effects. The indirect path through CSE (AL → CSE → IWB: $\beta = 0.149$, $p = 0.001$) and through WE (AL → WE → IWB: $\beta = 0.059$, $p = 0.002$) were statistically significant, as was the serial mediation pathway (AL → CSE → WE → IWB: $\beta = 0.059$, $p = 0.001$). Despite these indirect pathways, the direct pathway of AL to IWB was still significant, suggesting partial mediation. This is the direct and indirect, sequential and sequential drive of IWB by AL. Together, these results support the soundness of the theoretical model, and highlight the importance of psychological and motivational mechanisms as key determinants of the association between leadership style and workplace innovation.

5. DISCUSSION

The findings of this study provide robust empirical support for all eight hypothesized relationships among all the constructs reinforcing the theoretical foundations drawn from transformational–transactional leadership theory (Bass, 1990; Rosing et al., 2011), Social Cognitive Theory (Bandura, 1986, 1997), and the Job Demands–Resources model (Bakker and Demerouti, 2007).

The significant positive path from AL to IWB ($\beta = 0.308$, $p < 0.001$) confirms that leaders who balance opening and closing behaviours directly stimulate employees' innovative actions, consistent with Rosing et al. (2011) and empirical evidence from Wang et al. (2026), Elsaied (2026), N. Li (2026), Kusumah and Setiawan (2025), and Schuckert et al. (2018) (H1). AL also exerted the strongest effect observed in the model on CSE ($\beta = 0.710$, $p < 0.001$), mirroring Rosing et al. (2011) and Kark et al. (2015) on the joint monitoring-and-mentoring functions of ambidextrous leaders, and resounding Walumbwa and Schaubroeck (2009) and Walumbwa et al. (2011) (H2).

CSE, in turn, significantly predicted IWB ($\beta = 0.210$, $p < 0.001$), supporting Bandura's (1997) Social Cognitive Theory and aligning with Tierney and Farmer (2002), Gong et al. (2009), Newman et al. (2018), Afsar and Masood (2018), Javed et al. (2018), and Bozdoğan (2023) (H3). Beyond these direct effects, CSE significantly mediated the AL–IWB relationship ($\beta = 0.149$, $p = 0.001$), confirming Bandura's (1997) contention that leader behaviours operate through self-referential beliefs, and corroborating Yasmeen and Ajmal (2024), Kyaw and Soe (2024), and Zahra et al. (2017) (H4).

AL was also found to significantly enhance WE ($\beta = 0.212$, $p < 0.001$), in line with the JD-R model (Bakker and Demerouti, 2007) and consistent with Muhammad et al. (2025), Javeid (2025), and Shalahuddin (2025) on the contextual strengthening of leadership's motivational effects (H5). WE significantly predicted IWB ($\beta = 0.282$, $p < 0.001$), paralleling Rahma et al. (2025), Satrianto et al. (2026), and Yan (2026), and consistent with Elsaied (2026),

Al-Qatawneh and Abutayeh (2026), Blasco-Giner et al. (2026), and Jatoi and Channar (2026) on engagement-driven innovation pathways (H6).

WE also significantly mediated the AL–IWB relationship ($\beta = 0.059$, $p = 0.002$), consistent with Jadu et al. (2026) and mirroring findings on servant and virtuous leadership (Hu and Thien, 2026; Elsaied, 2026) and entrepreneurial leadership (Singh et al., 2026), all of which influence IWB indirectly through engagement (H7). Finally, the serial mediation pathway through CSE and WE ($\beta = 0.059$, $p = 0.001$) was significant, indicating that AL first strengthens creative self-efficacy, which subsequently deepens engagement and sustains innovative effort, consistent with the joint predictions of Social Cognitive Theory (Bandura, 1997) and the JD-R model (Bakker and Demerouti, 2007), and corroborating prior evidence that serial mediation models explain innovation outcomes more comprehensively than single-mediator models (Uppathampracha and Liu, 2022; Usman et al., 2022; Guo et al., 2025) (H8). Since the direct effect of AL on IWB remained significant alongside these indirect paths, the results indicate partial mediation, extending the leadership literature by demonstrating that ambidextrous leadership operates through complementary cognitive (CSE) and motivational (WE) pathways to shape innovative work behaviour, and offering practical support for organisations seeking to boost innovation by developing leaders' ambidextrous capabilities while nurturing employees' creative confidence and engagement.

6. CONCLUSION

This research findings show that innovative work behaviour is not the sole result of factors but a complex and dynamic interaction between leadership behaviors, psychological state of employees and their level of engagement in the workplace. Ambidextrous leadership is a key factor, with a balance between openness and flexibility, and structure and control, which ensures a space for both idea generation and implementation. Creative self-efficacy builds up employees' confidence in being creative and work engagement makes them feel ready psychologically and drives them towards creative behaviour. This brings an affirmation that good leadership is not enough if employee empowerment and engagement are not implemented to significant effect to achieve positive outcomes.

Thus, for organisations in the IT industry, there is a need to spend resources on building adaptive and balanced leadership development programmes that can help their leaders become agents of experimentation and yet remain accountable. Creative skill building workshops, mentorship and participative involvement programs should be put in place to reinforce employees' confidence/engagement in structured HR programs. Organizational policies, resources and reward systems should be developed at the organizational level to support innovation. There should be an on-going process of learning and active involvement in innovation processes, carried out by employees themselves.

7. LIMITATIONS AND RECOMMENDATION

As the study employed a cross-sectional design, causal inferences cannot be drawn. The emphasis on IT workers in SEZ firms in the OMR corridor in Chennai makes it difficult to extrapolate findings from the present study to other sectors or regions. Self-reported assessments can also be subject to bias. These limitations can be overcome in future studies using longer time frames to examine changes over time, include other mediators (e.g., psychological empowerment, job satisfaction), and examine moderators (e.g., age, organizational culture). Analyses comparing between sectors or countries would also help to enlarge the understanding of the relationships between leadership, employee confidence and employee engagement leading to innovation.

8. THEORETICAL IMPLICATIONS

Taken together, the findings carry both theoretical and practical significance for understanding innovation-driven leadership in the IT sector. Theoretically, the study validates ambidextrous leadership as a higher-order construct that integrates flexibility and control, establishes creative self-efficacy and work engagement as key psychological and behavioural mediating mechanisms, and lends further support to social cognitive theory by confirming that employees' belief in their creative abilities significantly shapes their engagement and innovative

output, thereby offering a comprehensive mediation-based framework that enriches leadership and innovation literature.

9. PRACTICAL IMPLICATIONS

Practically, since all hypothesized relationships were found significant, organizational leaders and top management are encouraged to develop adaptive leadership styles that simultaneously encourage idea generation and experimentation while maintaining structure, monitoring, and accountability; HR managers should design training programs, skill-building workshops, and innovation labs to strengthen employees' creative confidence alongside engagement strategies such as feedback systems, rewards, and participative decision-making; team leaders and supervisors must build employees' creative self-efficacy and foster emotional and cognitive engagement through open communication and constructive feedback; and employees themselves should be encouraged to participate actively in decision-making, build confidence in their creative abilities, and engage deeply in their roles. As ambidextrous leadership emerged as the strongest driver, creative self-efficacy as the psychological enabler, work engagement as the behavioural driver, and innovation as the ultimate outcome, organizations are advised to adopt a multi-level strategy that aligns leadership, psychological empowerment, and engagement initiatives, supported by suggestions such as balanced leadership training, innovation-supportive policies and reward systems, mentorship and coaching programs, continuous employee learning and collaboration, and the strategic alignment of leadership practices with long-term innovation goals to sustain innovative work behaviour.

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