Journal of Management Practices, Humanities and Social Sciences

Vol 10 Issue 6 pp. 1006-1016

https://doi.org/10.33152/jmphss-10.6.9



ORIGINAL CONTRIBUTION

From Organizational Culture to Innovative Work Behavior: Employee Engagement as a Psychological Bridge in the Indian Banking Sector

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Abstract— Innovative work behavior is one of the critical success factors for banks and has become increasingly important in the competitive banking industry. However, the role of psychological and cultural work environments, which motivate and encourage innovative work behavior in banks, is not well established. The current research aims to explore the influence of organizational culture on innovative work behavior through employee engagement in the Indian banking sector. This study is based on the theoretical background of the Job Demands-Resources Theory and the Social Exchange theory. The research employed a quantitative research design with a cross-sectional survey method. The samples are drawn from both public and private banks. The data were analyzed using Hayes' PROCESS Macro with the bootstrapping technique, which is a regression-based mediation analysis method. The results indicated that organizational culture significantly predicted employee engagement, which in turn significantly predicted innovative work behavior. However, there was no statistically significant effect for organizational culture's direct influence on innovative work behavior, but its indirect effect via employee engagement was significant. This suggests an indirect-only mediation model. In the highly regulated Indian banking setting, organizational culture appears to impact innovative work behavior only through employee engagement, which serves as an important psychological bridge between the two. Hence, bank managers who want to foster innovation should leverage organizational culture to develop engagement among employees, instead of depending on cultural change alone.

Index Terms— Employee engagement, Indian banking, Innovative work behavior, Organizational culture

Received: 27 June 2026; **Accepted:** 7 October 2026; **Published:** 17 November 2026



Introduction

Innovation has become a survival skill for banks due to technological disruption, competition from fintechs, and the challenge of Non-Performing Assets (NPAs). The banks' response to these challenges is the need for Innovative Work Behavior (IWB) among employees. West and Farr (1990) define IWB as innovation aimed at improving the work environment that is initiated by the individual and implemented at work. The individual and situational factors influencing IWB are not well established in the literature. Kwon and Kim (2020) argue, based on the JD-R model, that general job resources, including training and organizational support, are the main sources of IWB independently of the work environment. However, Hakro et al. (2023) demonstrate that employee engagement is the intervening variable between regulatory compliance and IWB.

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Organizational culture and employee engagement are the variables with the most evidence on their relationship with IWB. Organizational culture is a set of shared values, beliefs, assumptions, and behavioral patterns that characterize a particular organization (Schein, 2010). It has been positively associated with innovation (Akpa et al., 2021; Alateeg & Alhammadi, 2024; Jankelová et al., 2021). Employee engagement is the individual's involvement in work, which manifests in enthusiasm and willingness to invest effort (Schaufeli et al., 2002). Rhee and Choi (2017) and Hong and Zainal (2022) examined the role of organizational culture in IWB in the manufacturing and service sectors, respectively. In both studies, organizational culture directly predicted innovative work behavior. However, none of the studies used a context of regulatory compliance, which is a characteristic of the banking sector that constrains organizational and employee discretion.

This study aims to address this limitation by investigating the organizational culture-IWB relationship in the Indian banking sector. The Reserve Bank of India (RBI) implements policies that limit the discretion of commercial banks (Gauba, 2012; Manikyam, 2014). This is especially the case for public sector banks due to their concentrated ownership and the threat of NPAs (Gauba, 2012; Manikyam, 2014). Thus, the context of the study differentiates it from the prior research on organizational culture and IWB conducted in the manufacturing and service sectors. Moreover, while Hakro et al. (2023) use the example of the banking sector, their study only includes one type of commercial bank. This study includes public and private commercial banks. Finally, none of the aforementioned studies examines whether organizational culture directly influences IWB. In other words, all studies assume that the influence of organizational culture on IWB is direct and positive. However, based on the JD-R model and social exchange theory, described in detail in section (Theoretical background and conceptual framework), organizational culture may influence IWB indirectly through employee engagement. Thus, this study aims to test this theoretical framework.

The research questions of this study are as follows:

1. What is the relationship between organizational culture and IWB among employees of Indian commercial banks?
2. Is employee engagement among employees of Indian commercial banks an intervening variable in the relationship between organizational culture and IWB?

Research Background and Hypothesis Development

Organizational culture and employee engagement

Organizational culture consists of the collective values, assumptions, and behavioral norms that guide employee behavior and define an organization's overall character (Schein, 2010). Organizational culture model of Denison (1990) identifies four key traits - involvement, consistency, adaptability, and mission - each linked to performance outcomes, including innovation and employee motivation. Within banking, cultures that emphasize transparency, collaboration, and psychological safety are associated with higher employee motivation and dedication (Al-Faihani & Al-Alawi, 2020; Belias & Koustelios, 2014). Also, supportive ties found within company cultures help boost worker involvement and loyalty specifically inside India (Balachandar & Gurusamy, 2026).

Employee engagement may be defined as an enjoyable, motivating psychological state associated with work, involving high levels of energy, involvement, and focus (Schaufeli et al., 2002). According to the seminal work of Kahn (1990) identifies engagement as the use of one's cognitive, emotional, and physical self in performing one's role, contingent on psychological meaningfulness, safety, and availability. Job design, leadership, career development opportunities, and organizational communication are recognised antecedents of engagement (Bakker & Demerouti, 2007; Macey & Schneider, 2008).

Culture affects engagement through several routes: Open, participatory cultures signal that effort is valued and motivate employees to reciprocate through their roles (Blau, 2017), whereas hierarchical, non-appreciative cultures inhibit engagement and performance (Febrian & Solihin, 2024; Vandenberghe et al., 2017).

H1: Organizational culture has a significant positive effect on employee engagement.

Employee engagement and innovative work behavior

Innovative behavior unfolds across three sequential stages: idea generation, idea promotion, and idea realization (Amabile, 1996; West & Farr, 1990). The JD-R model suggests that engagement facilitates these stages: vigor enables employees to exert effort under ambiguity, dedication sustains the motivational investment needed to promote ideas, and absorption supports sustained engagement with problem-solving (Bakker & Demerouti, 2007). Engaged employees tend to be more motivated, resilient, and proactive because these psychological resources reduce the perceived risk of introducing unconventional ideas (Bakker & Demerouti, 2008; Kwon & Kim, 2020).

Recent studies have consistently demonstrated a positive engagement-IWB relationship while also providing evidence that different mechanisms may be at play. Ali et al. (2022) identified psychological empowerment as the intervening variable among senior Chinese employees. Ghani et al. (2023) argued that psychological capital and organizational resources are moderators among Pakistani manufacturing workers. Elamin et al. (2024) found that knowledge-sharing behavior mediated the link between engagement and innovative work behavior among Emirati service sector employees. None of the studies investigated the role of the regulatory context. Hakro et al. (2023) are an exception, showing that, for private banks in Pakistan, engagement was associated with lower tension between regulatory compliance and innovative behaviors. The inconsistency in

findings, as well as the lack of evidence from the banking sector in India, provide justification for further examining the role of engagement by investigating its role as a mediator in public and private sector banks in India.

H2: Employee engagement has a positive effect on innovative work behavior.

Organizational culture and innovative work behavior

Organizational culture shapes IWB by creating a normative environment that either supports or suppresses innovation. Cultures that tolerate experimentation and failure, and that foster cross-departmental communication, create an enabling environment for creativity and innovation (Jankelová et al., 2021; Maseko, 2017). Leadership support for innovative initiatives is a further strong indicator of organizational culture's influence (Alateeg & Alhammadi, 2024; Sardar & Mahdi, 2020). In banking specifically, innovation-oriented cultures aimed at improving customer service have been associated with greater innovation (Asaah et al., 2020).

Taken together, however, these studies report a consistent positive direct effect of culture on IWB only in manufacturing and service settings; none examines a context in which regulatory compliance constrains discretionary behavior. This is a meaningful inconsistency for theory: If culture promotes innovation partly by legitimizing risk-taking, a regulatory regime that already prescribes acceptable risk levels should narrow the room for culture to exert an independent, direct effect on IWB, even as culture continues to shape innovation indirectly through psychological states such as engagement. This reasoning - grounded in JD-R theory's distinction between resources that act directly on outcomes and resources that act through motivational states (Bakker & Demerouti, 2007) - underlies the expectation, developed further in Section (The mediating effect of employee engagement), that H3 below may not be supported in the Indian banking context even though H1, H2, and H4 are expected to hold.

H3: Organizational culture has a significant positive influence on innovative work behavior.

The mediating effect of employee engagement

The mediation process is understood here through Social Exchange Theory (Blau, 2017). Employees who experience an organizational culture built on trust, autonomy, and recognition respond with greater engagement, which represents the underlying mechanism through which culture motivates employees. According to Vandenberghe et al. (2017), engaged employees act as an important intermediary between organizational culture and innovation-related behaviors.

Empirical evidence supports this proposed mediating process. Rhee and Choi (2017), for instance, found partial mediation of engagement between culture and creativity in manufacturing organizations, and Hong and Zainal (2022) reported similar results in a service setting. The JD-R model Bakker and Demerouti (2007) proposes that employees draw on cultural resources such as collaboration, flexibility, and psychological safety to offset job demands, generating the vigour, dedication, and absorption that support all stages of IWB. Consistent with this, Ali et al. (2022) and Elamin et al. (2024) emphasise engagement as the crucial intermediary between organizational context and innovation outcomes.

Indirect-only mediation, rather than partial mediation in the strict sense, is anticipated within the Indian banking context. It is argued that the RBI's regulatory framework and the risk-minimising orientation of public sector banks arising from their NPA situation will weaken the direct relationship between organizational culture and innovation by narrowing the behavioral room for proactive innovation. Where the direct link between organizational culture and IWB is constrained by structural mechanisms (for example, formally mandated innovation processes), the indirect route through engagement is expected to carry the relationship instead. This theoretical expectation - that the direct link between organizational culture and IWB in Indian banking firms will be non-significant once engagement is accounted for - is intended as a contribution beyond what has been reported in manufacturing and service contexts to date.

H4: Employee engagement mediates the relationship between organizational culture and innovative work behavior.

Theoretical background and conceptual framework

The present study synthesizes the four theories into the set of causal relationships, where Denison (1990) culture model serves as a resource, JD-R theory (Bakker & Demerouti, 2007, 2017) determines the resource-outcome relationship, Kahn (1990) theory establishes the conditions for such a relationship, and social exchange theory (Blau, 2017) specifies the motivation mechanism which makes the connection plausible. The combination of theoretical perspectives provides the rationale for the formulation of the current research question. It seeks to determine why the relationship between culture and Innovative Work Behavior (IWB) is non-significant, and how it is shaped by the India-specific setting of the banking industry. Primarily, there is a reason to assume that the association between organizational culture and IWB will display a weaker strength of relationship compared to the JD-R findings. Denison (1990) postulates four dimensions of culture, among which involvement predicts innovative performance. However, the resource of culture is deemed to have a direct impact only when it increases employee motivation or self-regulation (Bakker & Demerouti, 2007). In other words, culture is not a resource that affects IWB directly, but rather a predictor of employees' engagement, which serves as a motivator of innovative performance. The attenuation of the direct relationship is explained by the particularities of the Indian banking industry context. The influence of the RBI as a regulator and the conservative nature of public sector banks, motivated by the high level of NPAs, limit the ability of employees to take control. Thus, the best course of action is to channel the energies of employees through engagement to benefit from their cultural capital.

Figure 1 shows the proposed conceptual model. The independent variable is organizational culture, employee engagement is the mediator, and the dependent variable is innovative work behavior (with four paths, H1-H4).

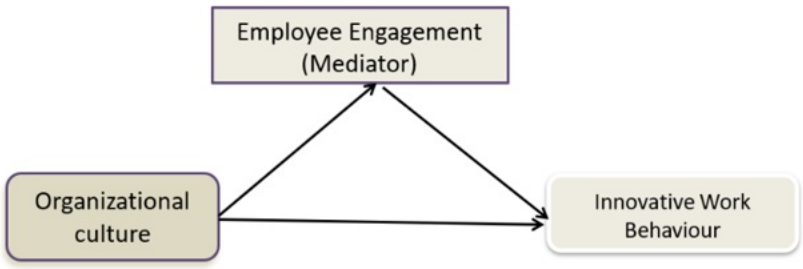


Fig. 1 *Proposed Conceptual Model - indirect-only mediation of employee engagement in the organizational culture-IWB relationship*

Research gap and contribution

Although Rhee and Choi (2017) and Hong and Zainal (2022) established a relationship among the constructs of interest, neither investigated whether this relationship would hold in a highly compliance-driven, institutionally fragmented regulatory environment such as Indian banking. The present study contributes to the literature in three ways: (1) it tests whether the direct organizational culture-IWB relationship is attenuated under the Indian regulatory framework, treating a non-significant H3 as a substantive finding rather than a null result to be explained away; (2) it establishes employee engagement's mediating role using Hayes' Process Model 4 with bootstrapped confidence intervals, and classifies the resulting mediation pattern according to current mediation criteria (Section Hypothesis testing); and (3) it develops managerial implications for Indian banking executives operating under RBI regulations that seek to encourage employee-driven innovation.

Materials and Methodology

Research design

This study uses a quantitative, cross-sectional research design. The philosophical foundation is positivism, and a deductive approach guides the research. The design tests theoretical hypotheses using empirical data collected from a large sample of respondents (Bell et al., 2022; Creswell & Creswell, 2017). There is no formal ethics committee at the researcher's institute that deals with such social science research. Therefore, the study was carried out according to the ethical guidelines laid down in the Declaration of Helsinki and general guidelines on social science research. Participation in the study was voluntary. The participants were made aware of the purpose of the study and the fact that participation was voluntary; they provided informed consent prior to filling out the questionnaire, and they knew that they could withdraw from the study at any point without consequences.

Sampling and data collection

The primary data were obtained using a structured questionnaire. For collecting the respondents, a two-stage, non-random sampling technique was used in which purposeful selection of branches, in addition to the convenient selection of eligible employees in those branches, was done. Selection of the branches was done very strategically, after taking into account the suggestions made by the regional human resource department of the banks, in order to include both urban and semi-urban branches in the sample. A non-probability sampling method was preferred over a probability sampling method. Respondents needed adequate organizational tenure to meaningfully evaluate culture, engagement, and innovation. A probability sampling frame drawn from all bank employees could not guarantee this.

The sample consisted of five public sector banks (State Bank of India, Punjab National Bank, Bank of Baroda, Canara Bank, and Union Bank of India) and five private sector banks (HDFC Bank, ICICI Bank, Axis Bank, Kotak Mahindra Bank, and IndusInd Bank). Both types were chosen due to the segmentation in the structure of the Indian banking industry (Gauba, 2012; Manikyam, 2014). Of 250 distributed questionnaires, 238 were returned (95.2% return rate), and 224 were found to be valid for data analysis (94.1% valid). The questionnaire survey was conducted face-to-face at the bank branches and offices, with the assistance of the branch management staff, using a well-defined methodology, and it took about 15-20 minutes to fill out the questionnaire; participants completed and returned the questionnaire directly to the research team. Among the participants, there were 131 males (58.5%) and 93 females (41.5%). The majority of respondents were in the age range of 21-40 years (75.4%), held at least an undergraduate degree (95.5%) and had nine years or more of banking experience (42.0%).

Measures

Three previously validated scales were adapted for use in the Indian banking context. Adaptation followed Brislin's (1970) recommendations: Items were reviewed for appropriateness to the Indian setting by three academics specializing in organizational behavior and two banking practitioners. The content validity was ensured through the following expert panel reviews. Each item was assessed independently for its relevance and clarity by the five members of the expert panel. An item was retained if four out of five raters felt that it was clear and relevant. Those items that failed to meet the above requirement were rephrased and reviewed again. Only a few items were rephrased due to lack of clarity. No item was dropped. All the items were pilot-tested on 30 people not involved in the main study, and Cronbach's alpha was higher than 0.80 for each scale.

Organizational Culture (OC) was measured with five items based on Denison (1990), addressing cooperation, employee orientation, quality, vision, and adaptability (for example, "Our organizational culture enables easy adaptation to changing conditions").

Employee Engagement (EE) was measured with six items based on Kahn (1990) and Schaufeli et al. (2002), covering cognitive, emotional, and behavioral aspects of engagement (for example, "I work together well with my colleagues for effective accomplishment of my task").

Innovative Work Behavior (IWB) was measured with five items based on West and Farr (1990), covering idea generation, idea promotion, and idea implementation (for example, "I can turn innovative ideas into practical uses").

Measurement validation

Reliability, convergent validity, and discriminant validity were assessed following the criteria of Hair et al. (2010). Internal consistency reliability (Cronbach's α) was OC = 0.843, EE = 0.876, and IWB = 0.841, all exceeding the 0.70 threshold. Convergent validity was supported by factor loadings ranging from 0.70 to 0.875, together with the composite reliability and average variance extracted values reported in Table I.

Construct validity was assessed using Confirmatory Factor Analysis (CFA) to test the three-factor structure. The model showed adequate fit: $\chi^2(116, N = 224) = 221.43$, $\chi^2/df = 1.91$, CFI = 0.961, TLI = 0.954, RMSEA = 0.064 (90% CI [.051, .077]), SRMR = 0.058, all meeting conventional fit criteria ($\chi^2/df < 3$).

Table I

Measurement model: Factor loadings, AVE, and composite reliability

Construct	Item	Statement	Loading	AVE	CR
Organizational Culture	OC1	Cooperation is more valued than competition between teams in our organization	0.814	0.620	0.891
	OC2	Our organization treats its employees as vital customers	0.816		
	OC3	Quality and service are the most important factors in serving clients	0.783		
	OC4	Our organization has a clear vision and mission to which all employees are committed	0.737		
	OC5	The culture of our organization facilitates easy adaptation to new changes	0.784		
Employee Engagement	EE1	I cooperate and coordinate well with colleagues to fulfil my job responsibilities	0.850	0.609	0.903
	EE2	I am enthusiastic about the work I do for the organization	0.804		
	EE3	I feel a strong connection to my organization's goals and values	0.804		
	EE4	I am willing to go beyond my formal duties to help my organization succeed	0.734		
	EE5	I feel proud to work for my organization	0.728		
	EE6	I am fully absorbed in my work and go beyond routine tasks	0.766		
Innovative Work Behavior	IWB1	I encourage important organizational members to support innovative ideas	0.724	0.617	0.889
	IWB2	I suggest innovative ideas to solve problems that arise in my department	0.704		
	IWB3	When an innovative idea is put into practice, I monitor its progress	0.791		
	IWB4	I convert innovative ideas into useful applications	0.875		
	IWB5	I look for opportunities to apply creative solutions to work problems	0.820		

Items EE6 and IWB5 were reworded during scale adaptation to eliminate conceptual overlap identified in expert review (see Section - Measures). Original wordings: EE6 "I am fully absorbed in my work and lose track of time"; IWB5 "I concentrate fully on my work and look for opportunities to innovate."

Discriminant validity was established using the Fornell-Larcker criterion and HTMT ratios (Henseler et al., 2015). The Fornell-Larcker criterion was satisfied: √AVE was 0.787 (OC), 0.781 (EE), and 0.785 (IWB), each exceeding the corresponding inter-construct correlations (Table III). All HTMT ratios fell below the conservative 0.85 threshold (Table IV): OC-EE = 0.561, OC-IWB = 0.411, and EE-IWB = 0.612. The EE-IWB ratio of 0.612, while the highest of the three, still indicates that the constructs are empirically distinct despite their conceptual proximity. Some wording changes were made to items EE6 and IWB5 (see Table I note) prior to data collection in order to reduce this potential source of item-level overlap (Gold et al., 2001). The reason for these changes was to avoid overlap between the items measuring employee engagement and innovative work behavior.

Harman's single-factor test was used to assess common method bias arising from the self-report, single-source design (Podsakoff et al., 2003). An unrotated factor analysis of all 16 items showed that a single factor accounted for only 31.4% of the variance, well below the 50% threshold. Because Harman's test has been criticised as a relatively insensitive diagnostic (Podsakoff et al., 2003), it was supplemented by inspecting the correlation matrix for any pathologically high inter-construct correlations that would signal method contamination; none was observed (all $r \leq$

.568; Table III). These checks do not rule out common method variance entirely, and the single-source, single-time-point design is acknowledged as a limitation in Section (Research limitations and directions for future research).

Analytical approach

The analysis proceeded in three stages. First, Pearson correlations among the variables were computed. Second, simple and multiple regression equations were estimated. Third, the mediation effect was tested using Hayes' PROCESS Macro Model 4 (Hayes, 2013), with 5,000 bootstrap resamples used to obtain 95% bias-corrected confidence intervals for the indirect effect of organizational culture on IWB through employee engagement.

Results

Demographic profile

Table II
Demographic summary of respondents (*N = 224*)

Variable	Category	*n*	%
Gender	Male	131	58.5
	Female	93	41.5
Age group	21-30 years	85	37.9
	31-40 years	84	37.5
	41-50 years	42	18.8
	51 years and above	13	5.8
Education	Diploma	10	4.5
	Undergraduate	114	50.9
	Postgraduate	91	40.6
	Above postgraduate	9	4.0
Work experience	Below 2 years	29	12.9
	3-4 years	39	17.4
	5-6 years	33	14.7
	7-8 years	29	12.9
	9 years and above	94	42.0
Total		224	100.0

The demographic characteristics of the sample are presented in Table II. Respondents are almost equally split between men and women, and consist predominantly of relatively young employees aged 21-40 (75.4%) with undergraduate or higher education (95.5%).

Table III
Descriptive statistics and Pearson correlations (*N = 224)*

Variable	M	SD	1	2	3
1. Organizational Culture (OC)	4.11	0.64	(0.843)		
2. Employee Engagement (EE)	4.12	0.58	0.529***	(0.876)	
3. Innovative Work Behavior (IWB)	3.88	0.75	0.385***	0.568***	(0.841)

Pearson correlations below the diagonal. *** $p < .001$ (two-tailed). Values in parentheses on the diagonal are Cronbach's α reliability coefficients.

Table III reports means, standard deviations, and Pearson correlations. OC (M = 4.11, SD = 0.64), EE (M = 4.12, SD = 0.58), and IWB (M = 3.88, SD = 0.75) were all rated relatively highly. All three constructs were positively and significantly correlated ($p < .001$): OC-EE (r = 0.529), EE-IWB (r = 0.568), and OC-IWB (r = 0.385).

Table IV
Heterotrait-Monotrait (HTMT) ratios for discriminant validity

Construct pair	HTMT ratio	Threshold (0.85)	Assessment
OC-EE	0.561	0.85	Satisfied
OC-IWB	0.411	0.85	Satisfied
EE-IWB	0.612	0.85	Satisfied

HTMT = Heterotrait-Monotrait ratio (Henseler et al., 2015). All values fall below the conservative cut-off of 0.85, supporting discriminant validity for all pairs. The EE-IWB pair, which has the largest bivariate correlation (r = 0.568), also remains below the more stringent cut-off of 0.90.

Mediation analysis

Mediation analysis was performed with PROCESS Macro Model 4, using 5,000 bootstrap samples. Results are shown in Tables V and VI.

Table V
Process macro model 4 path estimates

Path	*B*	SE	*t*	*p*	95% LLCI	95% ULCI	*β*
Mediator model: OC → EE R^2 = 0.280; $F(1,222) = 86.22$, $p < .001$							
Constant	2.164	0.214	10.13	< .001	1.743	2.585	-
OC (path a)	0.477	0.051	9.29	< .001	0.375	0.578	0.529
Outcome model: OC + EE → IWB R^2 = 0.332; $F(2,221) = 54.95$, $p < .001$							
Constant	0.580	0.326	1.78	.077	-0.063	1.223	-
OC (path c', direct)	0.139	0.077	1.82	.070	-0.011	0.290	0.118
EE (path b)	0.661	0.085	7.80	< .001	0.494	0.828	0.505
Total effect model: OC → IWB R^2 = 0.148; $F(1,222) = 38.67$, $p < .001$							
OC (path c, total)	0.454	0.073	6.22	< .001	0.310	0.598	0.385

Organisational culture was a strong predictor of employee engagement (path a: B = 0.477, $p < .001$, 95% CI [0.375, 0.578], β = 0.529) and accounted for 28.0% of variance (f^2=0.39, large effect). Engagement was also a significant predictor of IWB after controlling for culture (path b: B = 0.661, $p < .001$, 95% CI [0.494, 0.828], β = 0.505). Culture on its own had a significant effect on IWB (c: B = 0.454, $p < .001$). However, once engagement was included, the effect was reduced by approximately 69% and was no longer significant (c': B = 0.139, p = .070, 95% CI [-0.011, 0.290]). The variance explained increased to 33.2% from 14.8% (ΔR^2=0.184). This suggests that the majority of culture's effect on IWB is due to the effect it has through engagement. Because p = .070 is close to the conventional threshold, a small residual direct effect cannot be ruled out entirely.

Table VI
Decomposed effects of organizational culture on IWB

Effect	*B*	SE	LLCI	ULCI	*β* cs
Total effect (c): OC → IWB	0.454	0.073	0.310	0.598	0.385
Direct effect (c'): OC → IWB (controlling EE)	0.139	0.077	-0.011	0.290	0.118
Indirect effect (a×b): OC → EE → IWB	0.315	0.077	0.169	0.470	0.267

Bootstrap CIs based on 5,000 samples. *β* cs = completely standardised indirect effect. Significance of the indirect effect is based on whether the 95% bootstrap CI excludes zero; a p-value is not calculated for bootstrapped indirect effects. Confidence intervals for the total and direct effects are regression-based; the confidence interval for the indirect effect is bootstrapped (5,000 samples).

Hypothesis testing

Table VII
Summary of hypothesis testing results

H	Path	*B*	*p*	95% CI	Effect type	Outcome
H1	OC → EE	0.477	< .001	[0.375, 0.578]	Direct	Supported
H2	EE → IWB	0.661	< .001	[0.494, 0.828]	Direct	Supported
H3	OC → IWB (direct)	0.139	.070	[-0.011, 0.290]	Direct	Not supported ($p > .05$)
H4	OC → EE → IWB (indirect)	0.315	-	[0.169, 0.470]	Indirect (indirect-only mediation)	Supported

For H4, the bootstrapped CI is reported; no p-value is produced by PROCESS bootstrapping for indirect effects. H3 is not supported at α = .05; consistent with the theoretical prediction from the Indian regulatory context, the direct OC→IWB path is absorbed through EE.

H1 was supported: organizational culture was a strong predictor of EE (B = 0.477, β = 0.529, $p < .001$), explaining 28.0% of its variance, consistent with prior work based on Social Exchange Theory (Blau, 2017) and studies in banking (Belias & Koustelios, 2014).

H2 was supported: EE was a strong predictor of IWB (B = 0.661, β = 0.505, $p < .001$), consistent with prior studies (Ali et al., 2022; Elamin et al., 2024; Ghani et al., 2023). With a standardized coefficient of 0.505, EE's influence on IWB was greater than that of OC.

H3 was not supported at α = .05 (B = 0.139, p = .070). In line with the theoretical rationale put forth in Section (The mediating effect of employee engagement), this non-significant direct effect is taken to be a meaningful finding rather than a null result. This is in line with the possibility that regulatory pressures and risk aversion in the Indian banking industry due to NPAs could limit the direct manifestation of organizational culture through innovative behavior. Rather, the connection seems to be mediated by employee engagement. Because regulatory pressure and NPA-related risk orientation were not directly measured in this study, however, this remains a plausible theoretical explanation for the observed pattern rather than a tested causal mechanism, and it is presented as such throughout the remainder of the manuscript.

H4 was supported: The indirect effect was B = 0.315 (β = 0.267), with a bootstrapped CI [0.169, 0.470], excluding zero. Following current mediation guidance (Hayes, 2013; Zhao et al., 2010) a non-significant direct effect (c' = 0.139, p = .070) combined with a significant indirect effect classifies this pattern as indirect-only mediation, rather than partial mediation in the strict causal steps sense associated with Baron and Kenny (1986): the data indicate that OC affects IWB only through EE, not through both a direct and an indirect route simultaneously. The overall model accounted for 33.2% of the variance in IWB (R^2 = 0.332).

Discussion

Theoretical implications

This study makes three main contributions. First, it shows that in a strictly regulated setting such as Indian banking, the direct effect of organizational culture on innovative work behavior was not statistically significant (H3; p = .070), while the indirect effect through employee engagement was significant (β = 0.267). This pattern was both theoretically anticipated and empirically observed, and represents indirect-only mediation rather than partial mediation (Section - Hypothesis testing). By contrast, studies in the manufacturing (Rhee & Choi, 2017), and service (Hong & Zainal, 2022) sectors have reported a statistically significant direct relationship between organizational culture and IWB. The pattern observed in Indian banking therefore appears distinct from these other industries.

Organizational culture remains relevant to innovation in this account, but its influence appears to be channeled through the psychological mechanism of engagement rather than expressed directly, plausibly because engagement, as a psychological state, is less constrained by compliance-oriented structures than more direct, structurally visible expressions of culture would be. This interpretation - that compliance obligations constrain the direct influence of OC on IWB while leaving the indirect OC-EE-IWB relationship comparatively unobstructed - is offered as a theoretical account of the observed pattern; as noted in Section - Hypothesis testing, regulatory pressure itself was not measured, so this explanation should be evaluated alongside alternative accounts in future research (Section - Research limitations and directions for future research).

Second, this study extends the JD-R model (Bakker & Demerouti, 2007, 2017) by applying it to Indian banks, treating organizational culture as a distal cultural resource that generates engagement states (vigour, dedication, and absorption) associated with the three stages of IWB. This suggests that JD-R theory remains applicable even where structural mechanisms for innovation are constrained, broadening its applicability beyond its original formulation.

Furthermore, Social Exchange Theory (Blau, 2017) is extended in this study to propose that reciprocal psychological responses are likely to occur in response to the provision of cultural support, employees may reciprocate cultural support with higher levels of engagement, which in turn drives innovative work behavior.

Practical and managerial implications

In relation to innovative work behavior, employee engagement had the strongest direct influence (β = 0.505). Organizational culture predicted innovation indirectly through engagement. Therefore, banks should focus on building employee engagement as a method of influencing innovative work behavior. The indirect role of organizational culture was particularly evident in the case of commercial banks. It implies that for organizations that have a limited ability to drive innovation due to external constraints, employee engagement is the key priority area.

Managers can invest in building employees' engagement by implementing autonomy-supportive styles of leadership, organizational suggestion systems, feedback mechanisms, and opportunities for involvement in decision-making processes. Such practices can increase engagement and innovative work behavior. Employees who are engaged put forth more work into their jobs, leading to better results and helping organizations grow over time (Selvi et al., 2025). Organizational culture is important but should be prioritized as a means to influence employee engagement rather than a direct driver of innovative work behavior. It is possible for banks to assess the levels of organizational culture using such organizational culture assessments as Denison's organizational culture inventory (Denison, 1990). The results can then be used to develop employee engagement initiatives. For public sector organizations, the opportunity to invest in organizational culture is limited compared to that of commercial banks (Manikyam, 2014). Therefore, for managers who work in a highly regulated environment, this study's practical implications are especially relevant.

Research limitations and directions for future research

First, the cross-sectional design cannot establish causality among the variables. A longitudinal design tracking change in culture, engagement, and IWB over time would allow stronger causal inference.

Second, all constructs were measured from a single source at a single point in time using self-report instruments, which limits the ability to establish temporal precedence even where reliability is high.

Third, the reliance on self-reported, single-source data raises the possibility of common method variance, notwithstanding the diagnostic checks reported in Section (Measurement validation) (Harman's single-factor test and inspection of inter-construct correlations); future studies could reduce this risk by collecting supervisor ratings of IWB, or by using time-lagged designs that separate the measurement of predictor and outcome variables.

Fourth, purposive sampling from ten commercial banks limits the generalizability of the findings to the wider Indian banking sector, including cooperative banks, regional rural banks, and small finance banks not represented in this sample; probability-based, stratified sampling would improve generalisability in future work.

Fifth, the study does not examine potential moderating variables, including bank ownership type (public versus private), leadership style, individual psychological capital, and the degree of digitisation, among other factors. Future research could compare public and private sector banks directly - rather than pooling them, as in the present study - and adopt longitudinal or multi-source designs to establish more firmly the temporal and structural boundary conditions of the proposed model.

Conclusion

This study examined the mediating role of employee engagement in the relationship between organizational culture and IWB among employees of Indian banks. The data show a significant indirect effect of organizational culture on IWB through employee engagement, together with a non-significant direct effect of organizational culture on IWB - a pattern classified in this study as indirect-only mediation (Section - Hypothesis testing) rather than partial mediation, and one that is theoretically meaningful rather than a null finding. On this basis, the proximate determinant of IWB was employee engagement, with organizational culture acting as its antecedent.

The JD-R model and Social Exchange Theory jointly help explain this pattern: An organizational culture that fosters engagement produces employees who, through greater vigour, dedication, and absorption, generate, promote, and implement innovations. Within this account, engagement - rather than organizational culture directly - appears to be the more proximate driver of innovation in this regulated banking sector, since psychological engagement is plausibly less constrained by compliance structures than more direct expressions of culture would be; this remains, however, a theoretical interpretation of the observed pattern rather than a directly tested causal claim (Section - Theoretical implications). In practice, this suggests that banks seeking to promote innovation will need to invest in employee engagement specifically, rather than relying on cultural change alone.

Funding statement

This research project was financially supported by Mahasarakham University, Thailand.

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