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The Effects of Innovative Work Behavior, Knowledge Sharing, and Workload on IT Employee Performance through Work Engagement at Bank Indonesia

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Abstract: This study examines the effects of innovative work behavior, knowledge sharing, and workload on IT employee performance through work engagement at Bank Indonesia. Using a quantitative explanatory design, survey data were collected from 166 IT employees and analyzed using partial least squares structural equation modeling (PLS-SEM). Innovative work behavior had positive and significant effects on both work engagement and IT employee performance. Work engagement also positively and significantly affected performance. Knowledge sharing had no significant direct effect on either work engagement or performance; however, its indirect effect on performance through work engagement was significant based on the directional test. Workload did not directly affect performance, but it positively affected work engagement and indirectly improved performance. Work engagement complementary mediation of the relationship between innovative work behavior and performance and indirect only mediation the relationships of knowledge sharing and workload with performance. These findings indicate that innovative behavior and work engagement are more decisive for IT employee performance than knowledge exchange intensity or job demands alone. The study recommends an integrated people strategy that institutionalizes employee-led innovation, translates knowledge exchange into applied learning, and manages workload as a sustainable challenge demand.

Keywords: Innovative Work Behavior, Knowledge Sharing, Workload, Work Engagement, IT Employee Performance.

INTRODUCTION

Digital transformation has reshaped the capability requirements of financial institutions. In a central-bank setting, the reliability of payment systems, information security, data management, and digital public services depends substantially on the ability of IT employees to perform effectively while adapting to rapid technological change. Bank Indonesia has placed digital transformation and payment-system modernization among its strategic priorities. This agenda elevates the importance of IT employee performance because technology initiatives are

ultimately executed by employees who solve problems, coordinate specialized knowledge, and translate policy direction into resilient digital services.

A preliminary survey conducted among IT employees indicated that the human dimension of digital transformation warrants closer examination. Only 50% of respondents assessed their IT performance as good, while only 33% reported engaging optimally in innovative work behavior. Knowledge sharing was reported by 56% of respondents, whereas work engagement reached 83%. In parallel, budget realization in the IT department increased from 52% in 2023 to 80% in 2025. Although these figures indicate organizational progress, the preliminary evidence suggests that high engagement, organizational support, and work intensity do not necessarily translate into consistently optimal employee performance. This condition highlights the need to examine employee-level mechanisms rather than treating technology investment as a sufficient explanation for digital transformation outcomes.

Innovative work behavior refers to employees' efforts to generate, promote, and implement useful ideas in their work roles. Such behavior enables employees to improve processes and develop solutions, making it particularly relevant for IT employees who work with continuously changing systems and risk-sensitive operations. Previous studies suggest that innovative work behavior contributes positively to employee performance in public and organizational settings (Pham et al., 2024; Srirahayu et al., 2023; Abdallah, 2024). Nevertheless, innovative behavior may influence performance not only through direct improvements in work processes but also through employees' motivational states, particularly their work engagement.

Knowledge sharing is another important resource in knowledge-intensive work. Through knowledge donating and knowledge collecting, employees may reduce duplicated effort, broaden problem-solving alternatives, and accelerate organizational learning. Previous studies generally associate knowledge sharing with employee performance; however, its benefits depend on whether shared knowledge is relevant, absorbed, and applied in work processes (Haas & Hansen, 2007; Hong et al., 2022; Munawir & Suseno, 2024). This issue is particularly relevant in a specialized IT environment, where the exchange of technical information may not automatically be translated into improved task outcomes.

Workload represents the demand side of the work environment. The Job Demands–Resources theory proposes that job resources may stimulate motivation and engagement, whereas job demands may produce strain. However, demands perceived as meaningful and manageable can function as challenge demands that encourage employee involvement and development (Bakker & Demerouti, 2016). In the present context, the average workload of IT units exceeded standard working hours during 2023–2025, indicating sustained work intensity throughout the digital transformation process. Empirical findings concerning workload and performance remain mixed. High workload may undermine well-being and performance, whereas complex and manageable work may foster engagement when employees receive adequate resources and support (Spagnoli et al., 2020; Zacher & Rudolph, 2024).

Work engagement, reflected in vigor, dedication, and absorption, is the motivational mechanism expected to connect these work conditions to performance. Engaged employees invest energy and attention in their tasks and are more likely to sustain adaptive performance in dynamic work environments (Khusanova et al., 2021; Lee & Jo, 2023; Schaufeli, 2021). Although innovative work behavior, knowledge sharing, workload, work engagement, and performance have been examined in prior studies, research testing these three antecedents simultaneously through work engagement remains limited, particularly among IT employees in a central-bank context.

Accordingly, this study examines the direct and indirect effects of innovative work behavior, knowledge sharing, and workload on IT employee performance through work engagement at Bank Indonesia. The study contributes to the literature by clarifying whether

innovative behavior, knowledge sharing, and workload influence performance directly or whether their effects must first be translated into work engagement in the context of public-sector digital transformation.

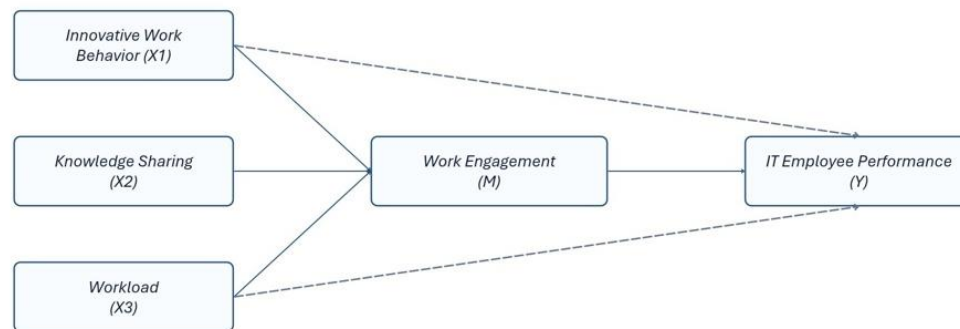


Figure 1. Conceptual framework

Source: Developed from the research model (2026).

METHODS

This study used a quantitative explanatory design to examine the hypothesized structural relationships among innovative work behaviour, knowledge sharing, workload, work engagement, and IT employee performance. The population comprised Bank Indonesia employees assigned to IT units or IT-related functions. Using purposive sampling, the study obtained 166 complete questionnaire responses. Respondents were eligible if they worked in an IT-related function and completed the questionnaire in full. Data were collected through a self-administered questionnaire using a five-point Likert scale.

Table 1 presents the respondent profile. Most respondents were male (65.1%), aged 31–40 years (40.4%), held a bachelor’s degree (69.9%), and had more than ten years of service (50.6%). This profile reflects a sample with substantial professional experience in Bank Indonesia’s IT-related work environment.

All constructs were operationalized as reflective measures. Innovative work behavior comprised idea generation, idea promotion, and idea realization. Knowledge sharing comprised knowledge donating and knowledge collecting. Workload covered mental demand, physical demand, temporal demand, effort, perceived performance, and frustration. Work engagement comprised vigor, dedication, and absorption. IT employee performance comprised task performance, contextual performance, and adaptive performance. The questionnaire items were adapted from established scales and construct definitions used in the thesis. In particular, IT employee performance was measured based on Koopmans et al. (2014), whereas work engagement was measured using the dimensions proposed by Khusanova et al. (2021).

The data were analyzed using SmartPLS 4.1 and the partial least squares structural equation modeling (PLS-SEM) approach. The measurement model was assessed through outer loadings, average variance extracted, the Fornell–Larcker criterion, heterotrait–monotrait ratio, Cronbach’s alpha, and composite reliability. The structural model was assessed through collinearity statistics, coefficients of determination, effect sizes, predictive relevance, model fit, and bootstrapped path coefficients.

Because the proposed hypotheses specified directional relationships, the study applied a one-tailed significance test. A hypothesized effect was considered significant when its *t*-statistic exceeded 1.645, and its *p*-value was below 0.05. Mediation effects were evaluated based on the significance of direct and indirect effects. Following Hair et al. (2022), significant direct and indirect effects in the same direction were classified as complementary mediation, whereas a significant indirect effect accompanied by a non-significant direct effect was classified as indirect-only mediation.

Table 1. Respondent profile

Characteristic	Category	n	%
Gender	Male	108	65.1
Gender	Female	58	34.9
Age	Under 30 years	30	18.1
Age	31–40 years	67	40.4
Age	41–50 years	62	37.3
Age	Over 50 years	7	4.2
Education	Diploma	1	0.6
Education	Bachelor degree	116	69.9
Education	Master degree	49	29.5
Tenure	Under 1 year	3	1.8
Tenure	1–5 years	34	20.5
Tenure	6–10 years	45	27.1
Tenure	Over 10 years	84	50.6

Source: Processed primary data (2026).

RESULTS AND DISCUSSION

Measurement and Structural Model Assessment

The measurement model met the established criteria for reliability and convergent validity. All average variance extracted (AVE) values exceeded the recommended threshold of 0.50, ranging from 0.560 for workload to 0.698 for IT employee performance. Cronbach's alpha values ranged from 0.805 to 0.914, while composite reliability values ranged from 0.864 to 0.933. These results indicate satisfactory internal consistency and convergent validity across all constructs.

Discriminant validity was also established. The square root of each construct's AVE exceeded its correlations with other constructs, and all heterotrait-monotrait ratio values were below 0.90. Therefore, the constructs were empirically distinct and suitable for structural-model assessment.

The structural model showed no problematic collinearity, with variance inflation factor values ranging from 1.223 to 2.313. The model explained 67.0% of the variance in IT employee performance and 56.8% of the variance in work engagement. Predictive relevance was substantial for both endogenous constructs, with Q^2 values of 0.716 for IT employee performance and 0.403 for work engagement. The standardized root mean square residual value of 0.072 was below the recommended threshold of 0.10, indicating acceptable model fit. Innovative work behavior had the largest effect on work engagement ($f^2=0.693$), whereas work engagement had a moderate effect on IT employee performance ($f^2=0.338$).

Table 2. Construct reliability and convergent validity

Construct	AVE	Cronbach's alpha	Composite reliability	Decision
Innovative work behavior	0.648	0.891	0.917	Valid and reliable

Construct	AVE	Cronbach's alpha	Composite reliability	Decision
Knowledge sharing	0.695	0.854	0.901	Valid and reliable
Workload	0.560	0.805	0.864	Valid and reliable
Work engagement	0.659	0.869	0.906	Valid and reliable
IT Employee Performance	0.698	0.914	0.933	Valid and reliable

Source: Processed primary data (2026).

Table 3. Structural model quality

Indicator	IT performance	Work engagement	Interpretation
R square	0.670	0.568	Moderate to strong / moderate
Q2 predictive relevance	0.716	0.403	Strong predictive relevance
SRMR	0.072	-	Model fit acceptable

Source: Processed primary data (2026).

Hypothesis Testing

Table 4 presents the direct-effect results. Four empirical paths were statistically significant. Innovative work behavior positively affected both IT employee performance and work engagement. Work engagement positively affected IT employee performance. Workload also positively affected work engagement; however, this relationship was opposite to the hypothesized negative direction. Knowledge sharing had no significant direct effect on either work engagement or IT employee performance, and workload had no significant direct effect on IT employee performance.

Innovative work behavior positively affected IT employee performance ($\beta=0.308$ \beta = 0.308, $t=4.674$ $t = 4.674$, $p<0.001$ $p < 0.001$). Employees who generate, promote, and implement useful ideas are more likely to achieve timely, accurate, collaborative, and adaptive outcomes in IT-related work. From the Job Demands–Resources perspective, innovative work behavior may function as a personal resource that enables employees to respond to technological and operational demands through improved solutions. This finding is consistent with prior evidence that innovative work behavior strengthens employee performance in public-sector settings (Pham et al., 2024; Srirahayu et al., 2023).

Innovative work behavior also had the strongest direct effect on work engagement ($\beta=0.605$ \beta = 0.605, $t=6.716$ $t = 6.716$, $p<0.001$ $p < 0.001$). IT employees who can contribute ideas and improve work processes are more likely to experience vigor, dedication, and absorption. The indirect effect of innovative work behavior on IT employee performance through work engagement was significant ($\beta=0.307$ \beta = 0.307, $t=3.058$ $t = 3.058$, $p=0.001$ $p = 0.001$). Because both the direct and indirect effects were positive and significant, work engagement demonstrated complementary mediation. Innovative work behavior therefore improves performance directly and indirectly through stronger work engagement.

Knowledge sharing did not significantly affect IT employee performance ($\beta=0.070$ \beta = 0.070, $t=0.934$ $t = 0.934$, $p=0.175$ $p = 0.175$) or work engagement ($\beta=0.110$ \beta = 0.110, $t=1.419$ $t = 1.419$, $p=0.078$ $p = 0.078$). In a specialized IT environment, knowledge exchange alone may not improve performance unless employees can absorb and apply the information in project decisions, problem resolution, and daily work practices. However, the indirect effect of knowledge sharing on IT employee performance through work engagement was significant

under the one-tailed test ($\beta=0.056$ \beta = 0.056, $t=1.670$ $t = 1.670$, $p=0.047$ $p = 0.047$). Because the indirect effect was significant while the direct effect was not, work engagement demonstrated indirect-only mediation. This finding suggests that knowledge sharing contributes to performance when it becomes meaningful enough to increase employees' engagement with their work.

Workload did not directly affect IT employee performance ($\beta=0.057$ \beta = 0.057, $t=0.825$ $t = 0.825$, $p=0.205$ $p = 0.205$). However, workload positively affected work engagement ($\beta=0.196$ \beta = 0.196, $t=2.864$ $t = 2.864$, $p=0.002$ $p = 0.002$). This empirical relationship was statistically significant but opposite to the hypothesized negative direction; therefore, H6 was not supported. The result suggests that employees may perceive their work demands as challenge demands, particularly when demanding IT assignments are accompanied by sufficient capability, organizational support, and role clarity.

The indirect effect of workload on IT employee performance through work engagement was significant ($\beta=0.100$ \beta = 0.100, $t=2.830$ $t = 2.830$, $p=0.002$ $p = 0.002$). Since the direct effect of workload on performance was not significant, work engagement demonstrated indirect-only mediation. This result should not be interpreted as a recommendation to increase workload. Workload may support engagement only while employees have adequate resources, staffing, recovery opportunities, and role clarity. Excessive demands without adequate resources may instead develop into harmful strain (Bakker & Demerouti, 2016; Zacher & Rudolph, 2024).

Finally, work engagement positively affected IT employee performance ($\beta=0.508$ \beta = 0.508, $t=4.316$ $t = 4.316$, $p<0.001$ $p < 0.001$). Employees who demonstrate vigor, dedication, and absorption are better able to sustain their performance amid rapid technological change. The findings demonstrate differentiated mechanisms: innovative work behavior improves performance directly and through work engagement, whereas the effects of knowledge sharing and workload emerge through work engagement.

Table 4. Direct effects and hypothesis decisions

Hypothesis	Relationship	β	t value	p value	Decision
H1	IWB → IT performance	0.308	4.674	<0.001	Supported
H2	Knowledge sharing → IT performance	0.070	0.934	0.175	Not supported
H3	Workload → IT performance	0.057	0.825	0.205	Not supported
H4	IWB → Work engagement	0.605	6.716	<0.001	Supported
H5	Knowledge sharing → Work engagement	0.110	1.419	0.078	Not supported
H6	Workload → Work engagement	0.196	2.864	0.002	Not supported directionally
H7	Work engagement → IT performance	0.508	4.316	<0.001	Supported

Source: Processed primary data (2026).

Innovative work behavior positively affected IT employee performance ($\beta = 0.308$, $t = 4.674$). This result indicates that employees who generate, champion, and implement work-related ideas are better able to achieve timely, accurate, collaborative, and adaptive IT outcomes. According to the Job Demands–Resources perspective, innovative work behavior may function as a personal resource because it helps employees respond to technological and operational demands through improved solutions.

The indirect effect of innovative work behavior on IT employee performance through work engagement was significant ($\beta = 0.307$, $t = 3.058$). Because both the direct and indirect effects were positive and significant, work engagement demonstrated complementary mediation.

Knowledge sharing did not directly influence IT employee performance ($\beta = 0.070$, $t = 0.934$) or work engagement ($\beta = 0.110$, $t = 1.419$). In a highly specialized IT setting, knowledge exchange may be insufficient when the shared content is not integrated into work practices, project decisions, or problem resolution.

Its indirect effect on IT employee performance through work engagement was significant under the one-tailed test ($\beta = 0.056$, $t = 1.670$), whereas its direct effect remained non-significant. Accordingly, work engagement demonstrated indirect-only mediation.

The indirect effect of workload on IT employee performance through work engagement was significant ($\beta = 0.100$, $t = 2.830$), whereas its direct effect was not significant. Therefore, work engagement demonstrated indirect-only mediation.

Finally, work engagement had a strong positive direct effect on IT employee performance ($\beta = 0.508$, $t = 4.316$). Employees who demonstrate vigor, dedication, and focused attention are better positioned to sustain performance in a digital transformation environment.

Table 5. Indirect effects and mediation type

Mediated relationship	Indirect β	t value	p value	Mediation type
Innovative Work Behavior → Work Engagement → IT Employee Performance	0.307	3.058	0.001	Complementary mediation
Knowledge Sharing → Work Engagement → IT Employee Performance	0.056	1.670	0.047	Indirect-only mediation
Workload → Work Engagement → IT Employee Performance	0.100	2.830	0.002	Indirect-only mediation

Source: SmartPLS 4.1 output, processed (2026).

CONCLUSION AND RECOMMENDATIONS

Conclusion

This study indicates that innovative work behavior and work engagement are important predictors of IT employee performance at Bank Indonesia. Innovative work behavior positively influenced performance both directly and indirectly through work engagement. Work engagement also demonstrated indirect-only mediation in the relationships of knowledge sharing and workload with IT employee performance. In contrast, knowledge sharing and workload did not show significant direct effects on performance in this sample. The positive relationship between workload and work engagement suggests that, under the conditions represented in this study, employees may perceive work demands as manageable challenges. However, this interpretation depends on the availability of adequate work resources.

The findings extend the Job Demands–Resources perspective in a public-sector digital transformation context. Knowledge sharing may contribute to performance when it promotes engagement and supports the application of knowledge in work processes. Similarly, workload may support engagement when employees perceive demands as meaningful and manageable rather than excessive. The study highlights differentiated mediation mechanisms: work engagement complements the direct performance effect of innovative work behavior, whereas it represents the primary pathway through which knowledge sharing and workload relate to IT employee performance.

Recommendations

Bank Indonesia may strengthen employee-led innovation through structured idea-submission mechanisms, mentoring, and pilot opportunities for feasible IT improvements. Recognition should value not only idea generation but also successful implementation and documented learning. These initiatives may support the direct and indirect performance benefits associated with innovative work behavior.

Knowledge-sharing initiatives should emphasize applied learning rather than general information exchange. Communities of practice, searchable knowledge repositories, technical case reviews, and post-project lessons learned should be connected to actual work problems and followed by implementation where relevant. Managers may also communicate the strategic relevance of IT projects, provide development and certification opportunities, and recognize team contributions to sustain work engagement.

Workload should be assessed periodically at unit and project levels. Capacity planning, work prioritization, and the automation of repetitive processes may help preserve workload as a manageable challenge while reducing the risk of overload. Future research should use longitudinal or mixed-method designs, include factors such as digital competence, psychological safety, leadership, organizational support, and innovation climate, and test the model in other public institutions or technology-intensive financial organizations.

Limitations

This study focused on IT employees at Bank Indonesia; therefore, the findings should not be generalized uncritically to other organizational contexts. The cross-sectional design does not capture changes over time, and self-reported questionnaire data may involve perceptual bias. In addition, the model did not include other potentially relevant determinants of IT employee performance. Future studies may address these limitations through multi-source, longitudinal, and comparative research designs.

Author Contributions

Candra Tri Surgo: conceptualization, methodology, data collection, formal analysis, interpretation of results, and manuscript preparation. The author reviewed and approved the final manuscript.

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