

The Influence of Employee Involvement on Innovative Work Behavior with Workforce Agility as a Mediator

Deno Hadiarti^{*1}, Yunizar¹, Wa Ode Zusnita Muizu¹
Universitas Padjadjaran, Indonesia¹

^{*}Corresponding email: deno24001@mail.unpad.ac.id

Abstract: Innovative work behavior has become an essential requirement for public sector organizations in responding to increasingly dynamic workplace changes. However, at the Center for Competency Development of Bina Marga, employees' innovative work behavior has not developed optimally despite their participation in competency development programs. This condition is presumed to be associated with employee involvement and employees' ability to adapt to changes in the workplace. This study aims to examine the relationship between employee involvement and innovative work behavior through workforce agility as a mediating variable. The study employed a quantitative approach using descriptive and explanatory research methods. The research population consisted of 831 training program alumni from the Center for Competency Development of Bina Marga, with the sample selected using proportionate stratified random sampling. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results indicate that employee involvement is positively associated with workforce agility, workforce agility is positively associated with innovative work behavior, employee involvement is positively associated with innovative work behavior, and workforce agility significantly mediates the relationship between employee involvement and innovative work behavior. These findings suggest that fostering innovative work behavior is associated with strengthening employee involvement and workforce agility alongside competency development initiatives.

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INTRODUCTION

West Java Province plays a vital role in achieving the strategic targets of the Ministry of Public Works and Housing (PUPR) for 2025–2026. As one of the national food granaries, West Java's success in maintaining commodity supply stability heavily depends on the effective execution of land infrastructure projects. However, West Java faces significant challenges as the province with the highest frequency of hydrometeorological disasters in Indonesia. The total disruption of the Sukabumi–Palabuhanratu National Road access in December 2024 due to landslides and flash floods underscores this. The complete disruption of Sukabumi–Palabuhanratu national road followong landslides and flash floods in December 2024 illustrates that infrastructure resilience depends not only on physical construction, but also on the capacity of public employees to respond rapidly and effectively to unexpected situations.



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Under such conditions, employees are expected to develop innovative solutions while maintaining compliance with technical standards.

Innovative work behavior refers to employees' intentional generation, promotion, and implementation of new ideas to improve organizational effectiveness (West & Farr, 1990). Janssen (2000) conceptualizes innovative work behavior as comprising three interrelated dimensions: idea generation, idea promotion, and idea realization. Within the Center for Competency Development of Bina Marga, innovation has been promoted through competency development programs requiring participants to develop workplace innovation projects. According to the Post-Training Monitoring Report issued by the Center for Competency Development of Bina Marga, the sustainability of innovation projects was evaluated six months after training completion among 2024 training alumni. The evaluation found that approximately 40% of the innovation projects were no longer sustained, while organizational culture (38%) and insufficient supervisory support (25%) were identified as the most frequently reported barriers (Center for Competency Development of Bina Marga [Pusbangkom], 2024). These findings indicate that technical competency alone does not necessarily conditions appear to influence whether employees are able to maintain innovation after completing competency development programs. This observation is consistent with Scott and Bruce (1994), who argued that organizational climates characterized by limited support discourage innovative work behavior.

One organizational capability that may explain this phenomenon is workforce agility. Workforce agility refers to employees' ability to respond rapidly, adapt effectively, and maintain performance under changing work conditions (Sherehiy & Karwowski, 2014). In the context of infrastructure development, workforce agility enables employees to adjust to unexpected technical, organizational, and environmental challenges without compromising work performance. Internal human resource evaluation reports further indicate that a considerable proportions outside their areas of professional expertise during the 2024 evaluation period (Pusbangkom, 2024). Such reassignment potentially limits employee opportunities to utilize their specialized competencies and may reduce their adaptability and responsiveness in performing their duties. If official information on specialist employees cannot be documented, this sentence should instead be presented qualitatively without reporting percentages.

Previous studies suggest that workforce agility does not emerge independently but develops through supportive organizational practice, particularly employee involvement. Employee involvement reflects management's practice that encourages employees to participate in organizational decision-making, receive adequate information, express opinions, and exercise appropriate discretion in carrying out their responsibilities (Heckscher, 1994). Employees who are actively involved are more likely to demonstrate proactive behavior, adaptability, and resilience when facing organizational change, all of which are essential characteristics of workforce agility.

Although previous research has established positive relationships between employee involvement and workforce agility (Natapoera & Mangundjaya, 2020) and between workforce agility and innovative work behavior (Franco & Landini, 2022; Petermann & Zacher, 2022), empirical evidence integrating these three constructs within a single mediation model remains limited. Existing mediation studies have primarily examined workforce agility as a mechanism linking human resource management practice to organizational outcomes, such as organizational performance or employee adaptability (Alviani et al., 2024), rather than examining how workforce agility explains the relationship between employee involvement and innovative work behavior. Furthermore, most existing studies have been conducted in private-sector organizations, whereas evidence from public-sector organizations characterized by formal bureaucratic structures and regulatory constraints remains scarce.

Accordingly, this study addresses three research gaps. First, it responds to the empirical contradiction between high levels of competency development and the relatively low sustainability of workplace innovation among training alumni. Second, it extends the literature by examining workforce agility as a mediating mechanism linking employee involvement and innovative work behavior. Third, it contributes contextual evidence from Indonesia's public sector, specifically the Center for Competency Development of Bina Marga within the Ministry of Public Works and Housing, where innovation is expected to occur within highly regulated and operationally complex environments. Therefore, this study examines the relationship between employee involvement and innovative work behavior through workforce agility among alumni of competency development programs at the Center for Competency Development of Bina Marga.

LITERATURE REVIEW

Employee Involvement

Employee involvement is a management philosophy rooted in industrial democracy theory and strategic human resource management that emphasizes employees' participation in organizational decision-making. Unlike employee empowerment, which focuses on delegating authority, or employee voice, which emphasizes employees' opportunities to express opinions, employee involvement encompasses broader organizational practices that promote information sharing, consultation, and participation between management and employees (Heckscher, 1994). Heckscher (1994) identifies three dimensions of employee involvement: informative, referring to information openness and two-way communication; consultative, involving employees in discussions before decisions are made; and discretion and participation, granting employees autonomy and authority to perform their work. Sumukadas and Sawhney (2004) further distinguish low-level involvement, where employees have limited authority, from high-level involvement, where employees are entrusted with greater responsibility and decision-making authority.

Recent studies suggest that employee involvement enhances employees' adaptability to organizational change. Natapoera and Mangundjaya (2020) found that participative management practices encourage proactive behavior and collaborative problem-solving, while Alqumairah and Purba (2024) reported that employee involvement strengthens employees' readiness to adapt to dynamic work environments. Accordingly, informative practices improve employees' awareness of organizational changes, consultative practices enhance collaborative problem-solving, and discretion and participation enable employees to respond independently and quickly to workplace challenges, thereby fostering workforce agility.

Workforce Agility

Workforce agility refers to employees' ability to respond quickly and adapt effectively to dynamic and unpredictable work environments (Sherehiy & Karwowski, 2014). Mohamad (2024) describes workforce agility as a set of planned behavioral characteristics that enable employees to adapt to change while maintaining performance and supporting innovation. Sherehiy and Karwowski (2014) conceptualize workforce agility through three dimensions: proactive, reflecting employees' initiative in anticipating challenges; adaptable, referring to flexibility in adjusting work methods and roles; and resilient, representing the ability to maintain performance under pressure and recover from disruptions.

Recent empirical studies have demonstrated that workforce agility is an important antecedent of innovative work behavior. Franco and Landini (2022) found that agile employees are more capable of recognizing opportunities, responding to environmental changes, and implementing new ideas. Similarly, Petermann and Zacher (2022) reported

that employees with higher agility exhibit greater innovative behavior because they can adapt quickly to changing work demands. Accordingly, proactive behavior facilitates idea generation, adaptability supports idea implementation, and resilience enables employees to sustain innovation despite organizational challenges.

Innovative Work Behavior

Innovative work behavior refers to employees' intentional generation, promotion, and implementation of new ideas that improve individual or organizational performance (Janssen, 2000). It comprises three dimensions: idea generation, involving the identification of problems and development of new solutions; idea promotion, referring to gaining support for proposed ideas; and idea realization, involving the implementation of ideas into practical work processes. These dimensions emphasize that innovation extends beyond creativity to include the successful execution of new ideas.

Recent studies continue to identify innovative work behavior as a critical factor in enhancing organizational adaptability and performance. Bakker et al. (2023) highlighted that employees who actively generate, promote, and implement ideas contribute to continuous organizational improvement. Likewise, Choi et al. (2021) found that supportive organizational environments encourage employees to translate creative ideas into practical innovations. Therefore, innovative work behavior represents employees' ability not only to develop new ideas but also to implement them effectively in achieving organizational objectives.

Hypothesis Development

Social Exchange Theory (Blau, 1964) explains that employees tend to respond positively when they perceive support and fair treatment from their organization. Employee involvement provides employees with access to information, opportunities to participate in decision-making, and greater autonomy in carrying out their work. In return, employees are more likely to adapt to changing work demands and respond proactively, strengthening workforce agility. Greater agility also enables employees to generate, promote, and implement new ideas more effectively. Therefore, Social Exchange Theory offers a theoretical foundation for understanding the relationships among employee involvement, workforce agility, and innovative work behavior. Drawing on social exchange theory and prior empirical evidence, the hypotheses propose that greater involvement fosters reciprocal adaptive and innovative behavior:

H1: Employee involvement positively affects workforce agility.

H2: Workforce agility positively affects innovative work behavior.

H3: Employee involvement positively affects innovative work behavior.

H4: Workforce agility mediates the relationship between employee involvement and innovative work behavior.

METHODS

This study employed a quantitative cross-sectional design to examine the relationships among employee involvement, workforce agility, and innovative work behavior. The population comprised 831 alumni of technical training programs at the Bina Marga Competency Development Center, Ministry of Public Works and Housing (PUPR), across three technical fields: Road and Bridge Construction ($n = 404$), Road and Bridge Preservation ($n = 179$), and Geotechnics, Laboratory, and Engineering Guidance ($n = 248$). A proportionate stratified random sampling technique was used to obtain 180 respondents, consisting of 88, 39, and 53 respondents from each field, respectively, following the minimum sample recommendation for PLS-SEM (Hair et al., 2010). Please add the sampling period, number of questionnaires distributed, response rate, and any excluded responses.

Data were collected using a structured questionnaire with a six-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). Employee involvement was measured using Heckscher's (1994) dimensions, workforce agility using Sherehiy and Karwowski's (2014) dimensions, and innovative work behavior using Janssen's (2000) dimensions. Please specify the number of items for each construct, questionnaire administration mode, and data collection period.

Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) in SmartPLS (specify version). The measurement model was evaluated through indicator reliability, convergent validity, discriminant validity, and internal consistency reliability. The structural model was assessed using R^2 , effect size (f^2), collinearity (VIF), and hypothesis testing through two-tailed bootstrapping with 5,000 resamples at a 5% significance level.

RESULTS AND DISCUSSION

Descriptive Analysis

The respondents consisted of alumni of technical training programs at the Bina Marga Competency Development Center. Most respondents had 5–10 years of work experience (63.8%) and held staff-level positions (74.4%), indicating that the sample was dominated by employees with operational responsibilities.

Table 1. Descriptive Statistics of Research Variables

Variable	Total Score	Category
Employee Involvement	9,351	Quite Low
Workforce Agility	11,031	Quite Low
Innovative Work Behavior	10,698	Quite Low

Source: Primary data processed (2026)

Descriptive statistics were used to describe respondents' perceptions of employee involvement, workforce agility, and innovative work behavior. The variable categories were determined using the continuum line method, with possible scores ranging from 3,240 to 19,440. Scores between 8,641 and 11,340 were classified as Quite Low.

Based on Table 1, Employee Involvement obtained a total score of 9,351, Workforce Agility scored 11,031, and Innovative Work Behavior scored 10,698. According to the continuum classification, all three variables were categorized as Quite Low, indicating that respondents perceived employee involvement, workforce agility, and innovative work behavior to be relatively low.

Measurement Model Evaluation

The measurement model was evaluated in terms of convergent validity, discriminant validity, and internal consistency reliability. All indicators had outer loadings above 0.70, while the AVE values ranged from 0.580 to 0.608, exceeding the recommended threshold of 0.50. Discriminant validity was supported by the Fornell–Larcker criterion, cross-loadings, and HTMT values below 0.85. Cronbach's alpha, ρ_A , and composite reliability also exceeded the recommended thresholds, indicating satisfactory internal consistency reliability. Although Cronbach's alpha and composite reliability were above 0.95, suggesting potential item redundancy, all indicators were retained because they were adapted from established measurement scales and represented theoretically distinct dimensions of each construct.

Table 2. Measurement Model Assessment

Construct	Cronbach's Employee Involvement	Composite Reliability (rho_c)	Pronouncement
Employee Involvement	0,957	0,961	Reliable
Workforce Agility	0,953	0,958	Reliable
Innovative Work Behavior	0,960	0,963	Reliable

Source: Primary data processed (2026)

As shown in Table 2, all constructs demonstrated satisfactory reliability and convergent validity. Although Cronbach's alpha and composite reliability exceeded 0.95, suggesting potential item redundancy, the indicators were retained because they were adapted from established scales and represented theoretically distinct dimensions.

Structural Model Evaluation

The inner model evaluation showed R^2 values of 0.354 for Workforce Agility (moderate) and 0.466 for Innovative Work Behavior (moderate SRMR = 0.047 (< 0.08) and NFI = 0.817 (> 0.80).

Table 3. Path Coefficients and Hypothesis Testing

Hypothesis	Relationship	β	f^2	Effect Size	Result
H1	EI $\rightarrow$ WA	0.595***	0.547	Large	Supported
H2	WA $\rightarrow$ IWB	0.418***	0.212	Medium-Large	Supported
H3	EI $\rightarrow$ IWB	0.345***	0.144	Medium	Supported

Source: Primary data processed (2026)

Based on Table 3, Employee Involvement was positively associated with Workforce Agility ($\beta = 0.595$, $f^2 = 0.547$), supporting H1. Workforce Agility was positively associated with Innovative Work Behavior ($\beta = 0.418$, $f^2 = 0.212$), supporting H2. Employee Involvement also showed a positive association with Innovative Work Behavior ($\beta = 0.345$, $f^2 = 0.144$), supporting H3.

Table 4. Mediation Analysis

Path	Direct Effect	Indirect Effect	Total Effect	Mediation Type
EI $\rightarrow$ WA $\rightarrow$ IWB	0.345***	0.249***	0.594***	Partial Mediation

Source: Primary data processed (2026)

Based on Table 4, Workforce Agility significantly mediated the relationship between Employee Involvement and Innovative Work Behavior, with an indirect effect of 0.249. Because both the direct and indirect effects were significant, Workforce Agility functioned as a partial mediator.

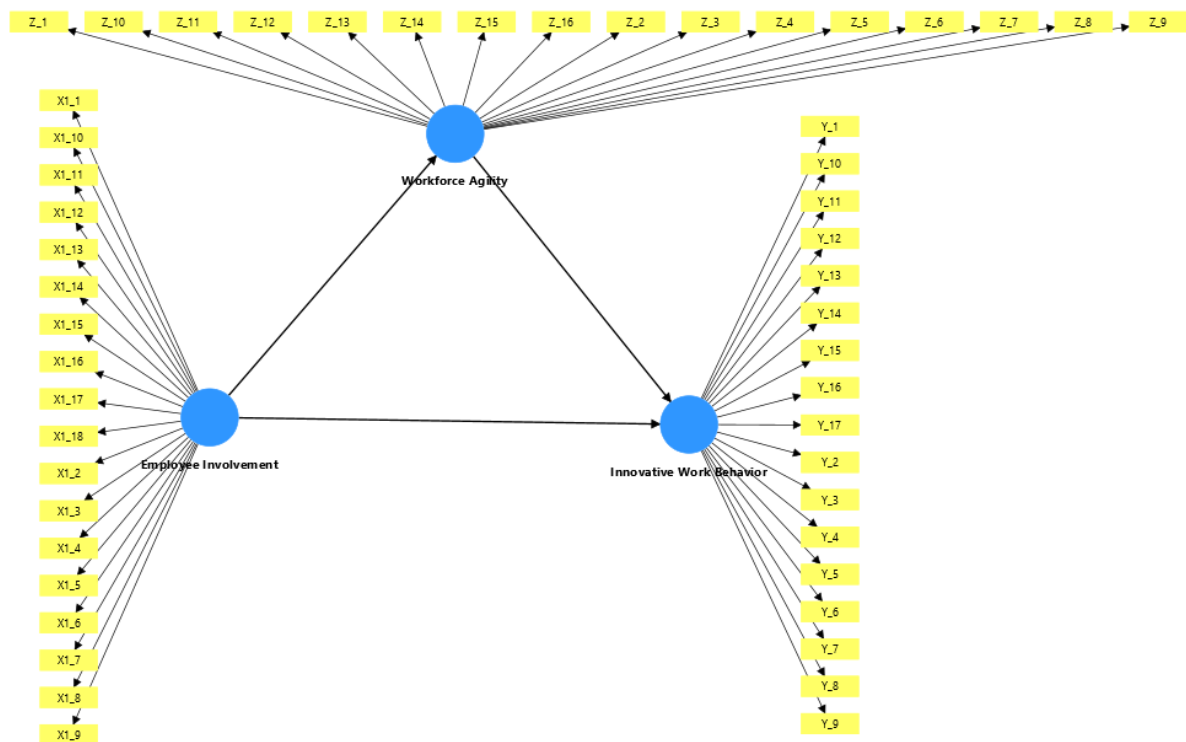


Figure 1. Research Model with Path Coefficients

Source: Primary data processed (2026)

Figure 1 presents the structural model and the standardized path coefficients estimated using PLS-SEM. The model illustrates the direct relationships between Employee Involvement, Workforce Agility, and Innovative Work Behavior, as well as the indirect relationship of Employee Involvement with Innovative Work Behavior through Workforce Agility. All hypothesized relationships are positive, indicating that higher employee involvement is associated with greater workforce agility and innovative work behavior, while workforce agility also contributes positively to innovative work behavior. The detailed interpretation of these relationships is presented in the following discussion.

Employee involvement was positively associated with workforce agility. Employees who perceived greater access to information, opportunities to participate in decision-making, and autonomy in their work also reported higher levels of workforce agility. This finding is consistent with Alqumairah and Purba (2024), who found that participative management practices strengthen employees' adaptive capabilities.

Workforce agility was also positively associated with innovative work behavior. Employees who were more proactive, adaptable, and resilient tended to report higher innovative work behavior, suggesting that agility helps employees respond to changing work demands while generating and implementing new ideas. This finding supports previous studies by AlAbood and Manakkattil MohammedIsmail (2023), Mohamad (2024), and Petermann and Zacher (2022).

Employee involvement was further found to be positively associated with innovative work behavior, both directly and indirectly through workforce agility. This suggests that employee involvement contributes to innovation not only by encouraging employees to participate more actively in their work but also by strengthening their ability to adapt to workplace changes. This finding is consistent with the reciprocal mechanism proposed by Social Exchange Theory (Blau, 1964).

The descriptive findings showed that employee involvement, workforce agility, and innovative work behavior were all perceived at relatively low levels. One possible interpretation is that employees may have sufficient autonomy in carrying out operational tasks but limited opportunities to participate in broader organizational decision-making. Although this interpretation is consistent with Heckscher's (1994) employee involvement framework, it was not directly examined in the present study and therefore should be interpreted with caution.

Similarly, the reported mismatch between employees' expertise and job assignments may provide contextual insight into the relatively low adaptability reported by respondents. However, because this factor was not included in the structural model, it should be viewed as organizational context rather than an empirically tested explanation. Future studies could examine job–expertise alignment as a potential antecedent of workforce agility and innovative work behavior.

CONCLUSION

This study suggests that employee involvement is associated with innovative work behavior both directly and through workforce agility. Employees who are provided with access to information, opportunities to participate in decision-making, and greater autonomy tend to be more adaptive in responding to changing work demands, which may support innovative work behavior. These findings highlight the importance of combining participative management practices with efforts to strengthen employees' adaptive capabilities in public sector organizations. However, the findings should be interpreted within the context of the Bina Marga Competency Development Center and may not be directly generalizable to other public organizations with different organizational characteristics. Future research could examine this model in other public sector settings, employ longitudinal designs to better understand changes over time, and consider additional organizational factors, such as leadership or organizational culture, that may further explain innovative work behavior.

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