

Investigating transformational leadership's contribution to innovative work behavior through organizational culture and knowledge sharing

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Article History

Received : 2026-01-16

Revised : 2026-03-29

Accepted : 2026-04-08

Published : 2026-07-24

Keywords:

Transformational leadership;
innovative work behavior;
organizational culture; knowledge
sharing; innovative.

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DOI:

[10.20885/AMBR.vol6.iss2.art10](https://doi.org/10.20885/AMBR.vol6.iss2.art10)

Abstract

This study investigates the impact of transformational leadership on innovative work behavior, examining organizational culture and knowledge sharing as potential mediators. Employing a quantitative research design, survey data were collected from 145 employees across 17 unit offices at PDAM Tirta Sembada Sleman. Data were gathered using a six-point Likert scale and were analyzed using structural equation modeling–partial least squares (SEM-PLS) with SmartPLS software. The results indicated that transformational leadership does not directly influence innovative work behavior. While organizational culture exhibits a positive effect, this effect is not statistically significant, and organizational culture does not mediate the relationship between transformational leadership and innovative work behavior. Conversely, knowledge sharing demonstrates a positive and significant influence on innovative work behavior, effectively mediating the relationship between transformational leadership and innovative work behavior. These findings suggest that transformational leadership alone is insufficient to stimulate innovation without effective knowledge-sharing. This study contributes to both theory and practice by underscoring the critical role of knowledge sharing as a mechanism connecting transformational leadership to innovation within public sector organizations. Limitations include the focus on a single organization and a relatively small sample size. The findings further emphasize the need to systematically and strategically integrate knowledge sharing into leadership and innovation initiatives.

Introduction

In today's dynamic business environment, driven by rapid technological development, organizations can no longer rely on traditional leadership approaches, which often lack the influence and adaptability to effectively guide employees (Ma et al., 2025). Effective leaders formulate a clear vision, establish strategic direction, and foster coordination, enabling individuals to work toward organizational goals. Leadership involves not only decision-making but also increasing employee motivation, commitment, and productivity, allowing their contributions to provide a competitive advantage. Bratton et al. (2021) state that utilizing employee capabilities is important for maintaining a competitive advantage amid increasingly complex competition. Effective leaders also create a conducive work environment, strengthen interpersonal relationships, and build open communication, encouraging employees to produce better work and adapt to change.

Transformational leadership is a powerful and effective approach for modern organizations, as it motivates and influences employees by articulating a compelling vision, inspiring shared commitment, and modeling exemplary behavior, ultimately uniting teams around a common purpose (Bagga et al., 2023; Tjahjono et al., 2018; Asif et al., 2025). By motivating followers to be more creative and productive, transformational leadership plays a crucial role in organizational success (Huynh et al., 2024), as it shapes employee behaviors, fosters a shared sense

of purpose, and encourages individuals to reach their full potential in alignment with the company's goals. Leaders who serve as role models significantly influence employee behavior and performance because of their authority in evaluating and providing career development opportunities (Lai et al., 2020). Transformational leadership fosters resilience and adaptability in the face of uncertainty, thereby playing a strategic role in promoting innovative work behavior (IWB).

Innovative work behavior involves an individual's efforts to initiate, develop, and implement new ideas that benefit their work or organization (Jong & Hartog, 2008). This behavior reflects an employee's ability to innovate, reject routine thinking, and adapt to the dynamics of a rapidly changing work environment (AlEssa & Durugbo, 2022). Akram et al. (2020) state that transformational leaders encourage employees to continually challenge assumptions, explore alternative solutions, and foster creativity through intellectual stimulation. Transformational leaders encourage innovative behavior through intellectual stimulation and by creating a safe space for employees to express their ideas (Hubbart, 2024).

Organizational culture, along with leadership, is central to fostering innovative capabilities. Transformational leaders instill a shared vision, increase motivation, and act as role models, influencing organizational values, norms, and behaviors (Bass & Riggio, 2006). When employees genuinely adopt these values, they are motivated to achieve superior performance and believe their contributions are meaningful (Balaji et al., 2020). Furthermore, knowledge-sharing practices are important for developing innovation by encouraging collaboration and creative solutions that strengthen competitive advantage (Azeem et al., 2021; Singh et al., 2021). Therefore, transformational leadership is a relevant strategy for creating a work ecosystem that supports innovation and encourages teamwork, information exchange, and skills development to address complex challenges (Kim & Park, 2020; Rafique et al., 2022; Zhang & Choi, 2024).

Bak et al. (2022) suggests transformational leadership promotes innovative work behavior (IWB), but research remains limited within public-sector utility organizations, especially regional water companies (PDAM). As public service organizations operating in bureaucratic structures that can hinder employee initiative and innovation, PDAM Tirta Sembada Sleman could particularly benefit from transformational leadership that encourages employees to challenge established routines and generate novel ideas. Prior research indicates that transformational leadership can foster IWB by cultivating supportive organizational conditions, such as a positive organizational culture and robust knowledge sharing (Rafique et al., 2022; Khan et al., 2020). Transformational leadership fosters employee innovation by creating a positive and participatory work climate and by reshaping employee values, beliefs, and motivations to be more innovation-oriented (Karimi et al., 2023). However, the specific mechanisms through which transformational leadership influences innovative work behavior, especially organizational culture and knowledge sharing, remain underexplored in public-sector service organizations. Therefore, this study empirically examines the impact of transformational leadership on employee IWB within PDAM Tirta Sembada Sleman, investigating the mediating roles of organizational culture and knowledge sharing. The findings are expected to provide valuable insights into how leadership practices can stimulate innovation within public-sector organizations.

Literature Review and Hypotheses Development

Social exchange theory

Social exchange theory is considered one of the most influential frameworks for explaining workplace behavior, particularly in understanding leader–follower relationships (Madison et al., 2025). First introduced by Homans (1958), the theory has since become a cornerstone in the study of social interaction and human behavior (Blau, 1964). Social exchange theory posits that individuals engage in social interactions and relationships based on their evaluation of the perceived benefits and drawbacks, with these reciprocal exchanges shaping community dynamics and influencing outcomes such as technology acceptance and use (Hashem, 2025). According to Nong et al. (2024), social exchange theory explains that individuals seek to maximize rewards and minimize costs in social interactions, evaluate relationship outcomes based on personal comparison levels and available

alternatives, strive for equity and fairness, and rely on trust and commitment. All of these factors influence relationship satisfaction and stability or lead to dissatisfaction and dissolution.

Transformational leadership

Transformational leadership is a widely studied leadership style due to its effectiveness in improving organizational success. Bagga et al. (2023) emphasize that transformational leadership is the most influential style for supporting organizational performance in today's global work environment. By building strong interpersonal relationships through personal support, appreciation, and attention to employee needs, transformational leaders positively impact career development and performance improvement (Lee et al., 2023). In addition, transformational leaders foster innovation among their subordinates by shifting mindsets toward the organization's vision and goals, which ultimately increases employees' sense of involvement and responsibility in their work (Palupi, 2020).

Innovative work behavior

Innovative work behavior is a deliberate, multidimensional process where employees generate, introduce, and implement new ideas to solve problems and improve performance, thereby creating value and ensuring organizational sustainability (AlEssa & Durugbo, 2022). An organization's capacity to innovate is largely shaped by employees' creativity and motivation, which makes a positive attitude toward innovation an increasingly valued trait in the workplace (Edgar et al., 2025). Innovative work behavior is also understood as a series of actions that identify, design, implement, and evaluate new ideas to improve work effectiveness in achieving organizational goals (Palumian et al., 2021). Furthermore, this behavior develops through incremental activities that improve work processes and employee performance (Priyadi et al., 2023). In an uncertain business environment, innovative work behavior is crucial for creating new solutions and maintaining an organization's competitive advantage (Susanti, 2023).

Organizational culture

Organizational culture encompasses the beliefs, values, and norms shared by most members of an organization as a guide for addressing external challenges and fostering internal integration (Kim & Park, 2021). This culture shapes individuals' perceptions, cognitive processes, and behavior in the workplace (Ipinazar et al., 2021). It also comprises the characteristics, lifestyle patterns, social habits, and shared knowledge that develop among an organization's members (Abane et al., 2022). An effective culture communicates values and behavioral standards, ensuring employees understand organizational expectations, are motivated to improve performance, and are confident their contributions will be valued when aligned with organizational values (Balaji et al., 2020).

Knowledge sharing

Knowledge sharing refers to the process in which employees exchange ideas, expertise, and experiences to facilitate both individual and collective learning (Sebetci et al., 2025). This strategy encourages innovation, collaboration, and creativity, which collectively improve productivity and accelerate the process of developing new ideas (Ratulian et al., 2024). Knowledge sharing is also a collective and iterative activity that enriches ideas and experiences, thus improving the quality of thinking (Afdhal & Pradana, 2022). Knowledge sharing is crucial in the modern economy because it increases creativity, accelerates innovation, and expands business opportunities through information transfer, problem-solving, and the development of new working methods (Azeem et al., 2021). Furthermore, knowledge sharing is a strategic instrument that enables access to internal and external organizational knowledge (Rindyani & Mansyur, 2024).

Transformational leadership on innovative work behavior

Transformational leadership has been recognized as a key factor that can foster the development of innovative work behavior within an organizational environment (Jadmiko et al., 2026).

Transformational leaders serve as idealized role models, stimulate innovative work, provide inspirational motivation, and actively support followers in pursuing the organization's shared vision (Afsar & Umrani, 2020). By cultivating a flexible organizational climate, they motivate followers to generate and disseminate innovative ideas, challenging conventional thinking and encouraging the pursuit of creative solutions (Karimi et al., 2023). To foster innovative work, transformational leaders offer intellectual stimulation, encouraging critical thinking and proactive implementation of novel ideas to address work-related challenges (Bak et al., 2022). Their inspirational behavior strengthens employees' sense of work meaning, competence, and self-determination (Pham et al., 2024).

H1: Transformational leadership has a positive effect on innovative work behavior.

Transformational leadership on organizational culture

Founders shape the organisation in ways that reflect their underlying values and beliefs, and these cultural foundations are typically upheld by subsequent leaders, as long as they remain committed to maintaining the organisation's established culture (Nguyen et al., 2023). From the perspective of transformational leadership, leaders play a key role in developing a supportive and flexible organizational culture that strengthens employee motivation, engagement, and a collective commitment to public sector objectives (Iddrisu & Mohammed, 2024). Through their actions, transformational leaders shape the tone, direction, and identity of institutional culture, aligning their behaviors and interactions with subordinates in accordance with prevailing organizational norms and values (Opolot et al., 2025). Given leaders' strong influence in shaping organizational culture, employees tend to model their behavior on that of their leaders (Bagga et al., 2023).

H2: Transformational leadership has a positive effect on organizational culture.

Organizational culture on innovative work behavior

Organizational culture is a critical driving force, fostering innovative work behavior, individual creativity, and enhanced organizational productivity when strong and well-internalized (Sofiyani et al., 2022). A well-established culture fosters positive motivation and shapes behavior toward organizational norms, encouraging innovations that improve overall performance (Cardina et al., 2022). Individual innovative behavior is the foundation for a high-performance organization; therefore, executives should strategically utilize organizational culture to mobilize and motivate members to behave creatively and innovatively, especially to produce new products, concepts, and services (Susanti, 2023). Given its significant role in enhancing employees' innovative work behavior, organizational culture warrants maintenance and further strengthening (Priyadi et al., 2023).

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

Transformational leadership on knowledge sharing

Transformational leadership fosters knowledge sharing within organizations by influencing individuals and the organization as a whole. Leadership behaviors act as social mechanisms, aligning employee attitudes and interactions to promote knowledge exchange (Hussain et al., 2021). By increasing the frequency and intensity of knowledge-sharing activities, transformational leaders can foster innovation (Afdhal & Pradana, 2022). Supporting creative ideas and open communication channels, transformational leadership significantly contributes to developing and sustaining knowledge-sharing practices (Chaar & Easa, 2021).

H4: Transformational leadership has a positive effect on knowledge sharing.

Knowledge sharing on innovative work behavior

Knowledge sharing describes the process through which individual knowledge is exchanged and integrated within the organization, supporting the organization's ability to gain and sustain competitive advantage (Usmani, 2024). Additionally, it mitigates the negative effects of unfavorable work environments and fosters innovative work behavior (Akram et al., 2020). Both knowledge donating and knowledge collecting significantly enhance innovative work behavior, supporting continuous improvement and the effective use of human capital (Palumian et al., 2021). Employees

should actively engage in knowledge sharing to support innovation, including the generation, development, and refinement of ideas. Through knowledge dissemination among employees, individuals contribute to the learning of others while also improving their own visibility within the organization, which can foster a greater sense of accomplishment (Capatina et al., 2024).

H5: Knowledge sharing has a positive effect on innovative work behavior.

Mediating role of organizational culture

Organizational culture aligns employees with institutional systems and promotes innovative work behavior, a process reinforced by transformational leaders who create a supportive environment conducive to collective idea generation (Khan et al., 2020). Because organizational culture is unique to each organization, it necessitates influencing members' behaviors and attitudes through models aligned with the organization's objectives, beliefs, and capabilities (Ipinazar et al., 2021). Transformational leadership plays a crucial role in shaping organizational culture, which in turn has significant potential to act as a catalyst for behavioral change (Joly et al., 2026), particularly in fostering innovative work behavior among employees. A strong organizational culture also fosters positive motivation and shapes members' behavior to align with organizational norms and regulations, thereby encouraging innovative actions that enhance overall organizational performance (Cardina et al., 2022).

H6: Organizational culture mediates the relationship between transformational leadership and innovative work behavior.

Mediating role of knowledge sharing

Transformational leadership is crucial for innovation and knowledge management systems. It enables organizations to mobilize knowledge, expedite problem-solving, facilitate timely corrective actions in dynamic environments, and strengthen productivity and long-term competitive sustainability (Rafique et al., 2022). Transformational leadership, by cultivating a supportive work environment and providing sufficient resources, can promote knowledge sharing among employees, which in turn may function as an effective coping strategy that enhances individuals' confidence in addressing challenging, risky, and uncertain situations through creative problem-solving (Khan et al., 2023). Knowledge sharing serves as an important mechanism for enhancing employee competencies, reinforcing knowledge management practices, and ultimately supporting improved performance and the emergence of innovative behaviors (Sayegh et al., 2024).

H7: Knowledge sharing mediates the relationship between transformational leadership and innovative work behavior.

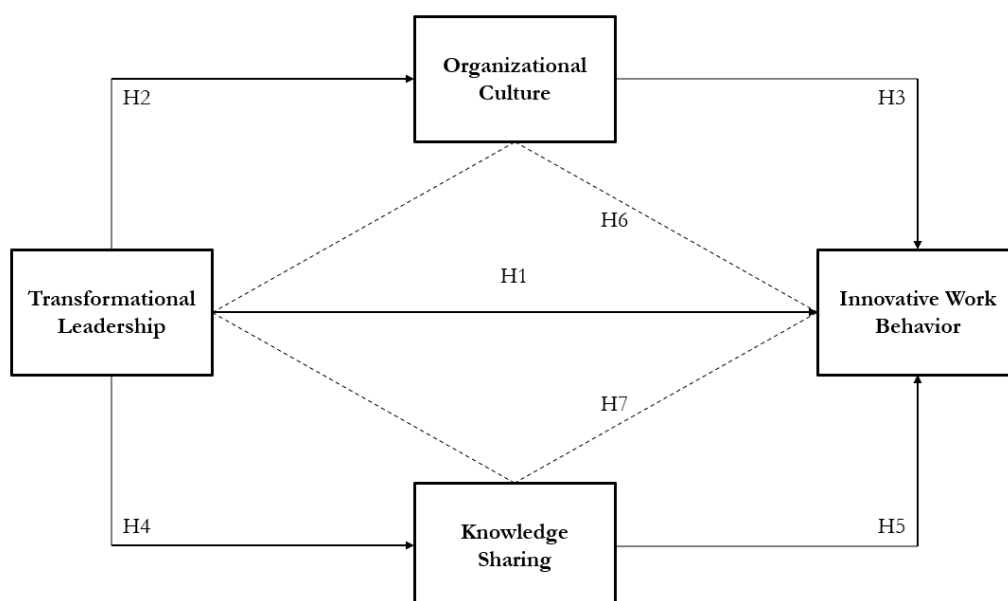


Figure 1. Research Framework

Research Methods

This study employs a quantitative approach, collecting and processing numerical data to systematically examine the relationship between variables. Based on objectivity and rigorous measurement, the data were analyzed using statistical methods. The population consisted of 145 employees from 17 PDAM Tirta Sembada Sleman unit offices, all of whom were included in the study using a census (total sampling) approach. The questionnaire was distributed via a Google Forms link shared on online platforms, allowing the researchers to efficiently reach participants and collect responses in a structured, digital format. Researchers used a 6-point Likert scale to eliminate neutral options (Chomeya, 2010), encouraging respondents to give clearer preferences and producing more informative data for decision-making. By removing the neutral midpoint, researchers aimed to minimize non-committal responses and maximize the contribution of responses to the analysis. To mitigate common method bias, several procedural remedies were applied, including neutral and non-leading statements, different referent objects across sections, clear separation of variables, and a well-structured dimensional arrangement of the constructs within the questionnaire.

Transformational leadership was measured by five indicators adapted from McCarley et al. (2014). These includes idealized attributes, idealized behavior, inspirational motivation, intellectual stimulation, and individual consideration. Furthermore, innovative work behavior was measured by four indicators adapted from Jong and Hartog (2010). These includes idea exploration, idea generation, idea championing, and idea implementation. Additionally, organizational culture was measured from Chang and Lin (2007). These includes cooperativeness, innovativeness, consistency, and effectiveness. Finally, knowledge sharing was measured by two indicators adapted from Lin (2007). The includes knowledge donating and knowledge collecting.

Results and Discussion

Based on Table 1, the majority of respondents were male (84.8%), indicating gender dominance within the organization. In terms of age, the 31–40 age group constituted the largest proportion (37.93%), followed by the 21–30 age group (34.48%) and those over 40 (27.59%), reflecting a relatively productive workforce with considerable experience. The division distribution shows that most respondents came from transmission and distribution (31.03%) and production (27.59%), indicating the organization's main focus on core operational functions. In addition, most respondents were permanent employees (77.9%), with the dominant lengths of service being 2–5 years (40%) and more than 10 years (38.62%), which indicates a fairly strong level of employment stability and substantial work experience.

Table 1. Demographic and Respondents

Characteristics	Categories	Frequency (n=145)	Percentage (%)
Gender	Male	123	84.8
	Female	22	15.2
Age (years old)	21–30	50	34.48
	31–40	55	37.93
	> 40	40	27.59
Division	Administration	25	17.24
	Customer relation	35	24.14
	Transmission and distribution	45	31.03
	Production	40	27.59
Employment status	Permanent employee	113	77.9
	Contract-based employee	32	22.1
Length of employment (years)	2–5	58	40
	6–10	31	21.38
	> 10	56	38.62

Source: Processed data, 2025

Outer model analysis

This study uses partial least squares structural equation modeling (PLS-SEM) analysis in SmartPLS software. The first stage of PLS analysis evaluates the measurement model (outer model) to ensure data quality and the accuracy of instruments in measuring research constructs. This evaluation tests convergent validity, construct reliability, and discriminant validity. The analysis begins by testing convergent validity to assess the suitability of research indicators, based on factor loading values for each indicator, with an acceptable value above 0.5 and a recommended value above 0.7 (Hair et al., 2021).

Table 2. Measurement, Loadings, CR, and AVE

No	Questionnaire Statements	Indicators	Outer Loading	CR	AVE
<i>Transformational Leadership</i>					
1	I feel proud of my boss's behavior and actions.	Idealized attributes	0.987	0.994	0.935
2	My boss consistently goes beyond what is expected in the interest of the team.		0.990		
3	I respect my boss because of his/her actions.		0.976		
4	My boss demonstrates confidence and authority in his/her leadership.		0.980		
5	My boss communicates important values and beliefs.	Idealized behavior	0.987		
6	My boss is able to articulate a clear objective.		0.989		
7	My boss considers the moral and ethical implications of a decision.		0.974		
8	My boss sets and communicates a clear mission.		0.978		
9	My boss speaks positively about the future.	Inspirational motivation	0.987		
10	My boss is enthusiastic about the tasks at hand.		0.980		
11	My boss gives a clear picture of the future.		0.984		
12	My boss checks the accuracy of assumptions that arise.	Intellectual stimulation	0.974		
13	My boss looks for different perspectives when solving problems.		0.979		
14	My boss suggests new ways to complete tasks.		0.985		
15	My boss takes time to teach and train employees.		0.974		
16	My supervisor understands that each individual has different needs.	Individual consideration	0.974		
17	My supervisor helps others develop their abilities.		0.992		
<i>Innovative Work Behavior</i>					
18	I pay attention to problems that are not part of my daily work.	Idea exploration	0.923	0.982	0.837
19	I am often curious about how things can be improved.		0.952		
20	I like to look for new methods, techniques, or tools to solve problems.	Idea generation	0.987		
21	I create new solutions to problems.		0.986		
22	I encourage others in the organization to be enthusiastic about new ideas.	Idea championing	0.990		
23	I try to convince others to support innovative ideas.		0.991		
24	I introduce new ideas into work practices in a systematic way.	Idea implementation	0.989		
25	I contribute to implementing new ideas.		0.988		
<i>Organizational Culture</i>					
26	I have loyalty and mutual trust with others.	Cooperativeness	0.732	0.954	0.972
27	The organization encourages employees to actively participate in company activities and events.		0.857		

28	I am trusted by my boss and can take part in decision-making.		0.814		
29	Relationships among employees are harmonious, and the organization feels like a big family.		0.798		
30	The organization pays attention to employee development, work spirit, and teamwork.		0.799		
31	My boss is willing to innovate and take risks.	Innovativeness	0.906		
32	My boss actively encourages staff to grow and innovate.		0.897		
33	I face challenges at work and learn and grow from them.		0.756		
34	The organization is ambitious, energetic, and willing to take risks.		0.843		
35	I am willing to work in this organization for a long time.	Consistency	0.724		
36	The organization has formal and strict rules that I must follow.		0.865		
37	The organization focuses on efficiency and performance to achieve its goals.		0.909		
38	The organization is stable, and I do not worry about losing my job.		0.721		
39	The organization is well-structured, with clear roles and procedures that are easy to follow.		0.883		
40	My boss emphasizes efficiency and works effectively.	Effectiveness	0.898		
41	My boss focuses on achieving goals without being influenced by personal feelings.		0.871		
42	Organizational success depends on good productivity.		0.784		
43	The organization improves efficiency through competition among divisions and employees.		0.823		
44	The organization strives to stay competitive.		0.891		
<i>Knowledge Sharing</i>					
45	When I learn something new, I share it with my colleagues.	Knowledge Donating	0.930	0.967	0.931
46	When my colleagues learn something new, they share it with me.		0.942		
47	Sharing knowledge among colleagues is common in my organization.		0.922		
48	I share information with colleagues when they ask for it.	Knowledge Collecting	0.938		
49	I share my skills with colleagues when they ask for them.		0.968		
50	Colleagues in my organization share knowledge with me when I ask.		0.971		
51	Colleagues in my organization share their skills with me when I ask.		0.972		

Source: SmartPLS output, 2025

Based on the results in Table 2, all constructs demonstrated excellent measurement quality. Specifically, high outer loading values for all indicators (≥ 0.879) met the criteria for convergent validity. The constructs also exhibited strong reliability, with Cronbach's alpha values ranging from 0.931 to 0.993 and composite reliability ranging from 0.954 to 0.994, indicating excellent internal consistency. Furthermore, high average variance extracted (AVE) values for all variables (0.837–0.972) indicate that each construct explains a substantial portion of the variance in its indicators. Overall, these findings confirm that the research instrument meets strict validity and reliability standards, making the measurement model suitable for the structural analysis stage. To further

strengthen the discriminant validity test results, the Fornell-Larcker criterion was applied. This test assesses discriminant validity by comparing each construct's average variance extracted (AVE) square root with its correlations to other constructs in the model.

Table 3. Fornell-Larcker Criterion

	Transformational Leadership	Innovative Work Behavior	Organizational Culture	Knowledge Sharing
Transformational Leadership	0.986			
Innovative Work Behavior	0.264	0.965		
Organizational Culture	0.606	0.457	0.915	
Knowledge Sharing	0.242	0.619	0.555	0.967

Source: SmartPLS output, 2025

The Fornell–Larcker criterion for discriminant validity was met, as each construct's average variance extracted (AVE) square root exceeded its correlation with other constructs, as shown by the dominant diagonal values. For example, transformational leadership (0.986), innovative work behavior (0.965), organizational culture (0.915), and knowledge sharing (0.967) all demonstrate this. Although correlations exist between constructs, such as between organizational culture and transformational leadership (0.606) and between knowledge sharing and innovative work behavior (0.619), these values are lower than the AVE square root of each construct. Thus, the measurement model demonstrates adequate discriminant validity, allowing for the conceptual and empirical distinction of each latent variable.

Inner model analysis

The inner model, also known as the structural model, is a part of PLS-SEM that explains the relationships between latent variables. It describes how variables influence each other, both correlationally and causally. Inner model analysis includes the R-square test, F-square test, and predictive relevance test.

R-square

Table 4. R-Square Test Result

Variables	R-Square	R-Square Adjusted
Innovative Work Behavior	0.403	0.391
Organizational Culture	0.367	0.362
Knowledge Sharing	0.059	0.052

Source: SmartPLS output, 2025

The R-square results show that the structural model has the strongest explanatory power for innovative work behavior, with an R-square value of 0.403, indicating that some of the variation in innovative work behavior can be adequately explained by the model. Organizational culture shows a moderate level of explanation (R-square = 0.367), indicating that the constructs in the model play a significant role in shaping organizational culture. In contrast, knowledge sharing has a relatively low R-square value of 0.059, suggesting that knowledge sharing behavior is still predominantly influenced by factors outside the research model.

F-square

Table 5. F-Square Test Result

Variables	Innovative Work Behavior
Transformational Leadership	0.004
Organizational Culture	0.012
Knowledge Sharing	0.326

Source: SmartPLS output, 2025

The F-square test results show that transformational leadership (0.004) and organizational culture (0.012) have a very small effect on innovative work behavior, so their contribution is not yet significant in practical terms. In contrast, knowledge sharing has an F-square value of 0.326, which indicates a strong and substantive influence in encouraging innovative work behavior. These findings suggest that increasing employee innovation work behavior is more effectively achieved through strengthening knowledge sharing practices.

Predictive relevance

Table 6. Predictive Relevance Test Result

Variables	Q ² (=1-SSE/SSO)
Innovative Work Behavior	0.366
Organizational Culture	0.298
Knowledge Sharing	0.053

Source: SmartPLS output, 2025

The predictive relevance (Q²) test results indicate that the model has good predictive ability for innovative work behavior (0.366) and organizational culture (0.298), suggesting the constructs adequately explain data variation. While the Q² value for knowledge sharing (0.053) is above zero, it indicates relatively weak predictive relevance. Overall, these findings confirm the research model is suitable for predictive purposes, particularly for innovative work behavior.

Hypothesis testing

Table 7. Relationship Between Variables

Hypotheses	Relations Between Variables	Original Sample (O)	T-Statistics	P-Value	Conclusion
H1	Transformational leadership → innovative work behavior	0.060	0.656	0.512	Not Supported
H2	Transformational leadership → organizational culture	0.606	9.847	0.000	Supported
H3	Organizational culture → innovative work behavior	0.123	1.042	0.298	Not Supported
H4	Transformational leadership → knowledge sharing	0.242	2.647	0.008	Supported
H5	Knowledge sharing → innovative work behavior	0.536	6.169	0.000	Supported
H6	Transformational leadership → organizational culture → innovative work behavior	0.075	1.009	0.314	Not Supported
H7	Transformational leadership → knowledge sharing → innovative work behavior	0.130	2.408	0.016	Supported

Source: SmartPLS output, 2025

Transformational leadership → innovative work behavior

The empirical analysis reveals that transformational leadership does not significantly contribute to the enhancement of innovative work behavior. These results indicate that the role of leaders is not yet fully capable of encouraging innovative behavior in employees. This condition shows that the drive to innovate is not solely determined by leadership style, but may be influenced by other factors such as organizational culture, internal motivation, and opportunities for innovation provided by the organization.

Karimi et al. (2023) propose that transformational leadership provides an initial impetus, boosting employee motivation and self-confidence. However, they contend that appropriate psychological and structural conditions are necessary to translate this motivation into actual

innovative behavior. While leaders can inspire, organizational support such as role clarity, opportunities for experimentation, and recognition of initiative is crucial for implementation. Similarly, Jun and Lee (2023) found that transformational leadership promotes innovative behavior by fostering commitment to change. By instilling confidence and a willingness to adapt, transformational leaders encourage employees to engage creatively with organizational dynamics. This commitment then motivates employees to actively contribute to solutions and continuously improve their work, going beyond simply following instructions.

While leaders at each PDAM Tirta Sembada Sleman unit office have guided and motivated employees, innovative behavior remains low. This is largely because employees focus solely on their assigned tasks, limiting their exploration of issues in other divisions. Additionally, many unit heads lack initiative and fail to provide strategic support for technological advancements, resulting in low subordinate participation in generating innovative ideas and adopting relevant technologies for operational development and modernization.

Transformational leadership → organizational culture

The empirical results reveal that transformational leadership positively and significantly contributes to the enhancement of organizational culture. This indicates that the higher the application of transformational leadership, the stronger the organizational culture formed at the organization. This finding reinforces the assumption that a leadership style oriented towards vision, inspiration, and motivation is capable of shaping values, norms, and collective behavior that support the sustainable effectiveness of the organization.

Employees led by transformational supervisors are more likely to perceive their organization's culture as adaptive, inclusive, well-integrated, and mission-driven. Such leaders actively shape and guide organizations toward transformational cultural characteristics, indicating transformational leadership's direct influence on organizational culture. Employees led by transformational supervisors are more likely to perceive their organization's culture as adaptive, inclusive, well-integrated, and mission-driven. Such leaders actively shape and guide organizations toward transformational cultural characteristics, indicating transformational leadership's direct influence on organizational culture (Nguyen et al., 2023). Transformational leaders strive for new learning facilities that simplify work processes, while organizational culture helps employees understand the organization's core values and develop a shared understanding of its processes and goals (Azeem et al., 2021).

At PDAM Tirta Sembada Sleman, most unit heads effectively communicate organizational goals, directly support employees, and involve team members in decision-making. Employees find their unit heads approachable and attentive to individual development and team cohesion. This leadership fosters an open, respectful work environment with a strong sense of shared responsibility, increasing employee commitment to organizational values and willingness to collaborate across departments.

Organizational culture → innovative work behavior

Empirical results reveal that organizational culture does not significantly enhance innovative work behavior. Rather, innovative thinking flourishes when coaching is continuously maintained, such as by creating an environment conducive to integrating scientific and technological advances, thereby influencing employees' innovative work behavior (Kholifah et al., 2024). However, a lack of resources, time, or formal rewards for innovation can demotivate employees, and organizations that strongly adhere to traditional ways will find it difficult to encourage innovative work behavior.

According to Fang et al. (2024), a long-term oriented organizational culture encourages companies to have higher and more sustainable innovation capabilities. Member involvement and program development are important for an organization to continue generating new ideas and remain competitive (Mohammadian et al., 2023). Fostering employees' innovative work behavior is important, as organizational innovation improves adaptability and efficiency and contributes to enhanced financial performance (Zhang et al., 2025). When trust-based relationships are the foundation of innovation-oriented organizations, employees can more effectively implement their creative ideas and innovative behaviors to achieve organizational goals (Abun et al., 2023).

PDAM Tirta Sembada Sleman's organizational culture demonstrates a lack of adaptability, especially in adopting information technology, modernizing operations, and developing efficient, data-driven work methods. This directly limits the organization's ability to encourage innovative work behavior. An organizational culture unresponsive to change fosters routine and procedural work patterns. Employees maintain existing practices rather than explore new ideas or propose technology-based improvements, thus limiting the generation, promotion, and implementation of new ideas.

Transformational leadership → knowledge sharing

The empirical results reveal that transformational leadership positively and significantly contributes to the enhancement of knowledge sharing. By inspiring employees, setting an example, and cultivating trust and openness, these leaders increase employee motivation to exchange information and experiences, thereby supporting organizational performance by building trust and fostering a collaborative culture. Advanced knowledge enhances the novelty and authenticity of design concepts (Ma et al., 2022). By providing vision, encouragement, and individualized support, transformational leaders inspire followers to exceed minimum organizational requirements, fostering a sense of obligation to reciprocate through stronger commitment and meaningful contributions (Matsuo, 2025). Therefore, transformational leadership in knowledge sharing can increase project success (Raziq et al., 2025) and organization performance (Arsawan et al., 2020).

Knowledge sharing → innovative work behavior

The empirical results reveal that knowledge sharing positively and significantly contributes to the enhancement of innovative work behavior. When employees openly and continuously exchange information and experiences, they encourage creative ideas and apply innovative solutions in their daily work. This reflects that a work culture supporting openness and collaboration is an important factor in fostering innovative work behavior within an organization. When employees feel they have the opportunity and space to share knowledge freely, organizational learning improves.

Knowledge sharing acts as a key mechanism that facilitates the creation and exchange of knowledge among employees, expanding their knowledge base and enhancing their innovative capabilities (Yasir et al., 2021). Cognitive abilities, personality, knowledge, internal motivation, and social networks influence personal innovation. Employee interactions that encourage knowledge exchange play an important role in enhancing individuals' innovative work behavior (Usmanova et al., 2020). This process increases employees' capacity to identify opportunities, creatively solve problems, and produce innovations that support work effectiveness and organizational performance.

Knowledge sharing's positive impact on innovative work behavior at PDAM Tirta Sembada Sleman is also evident in the development of shared ownership of knowledge within each unit. Knowledge sharing not only transfers information but also builds collective awareness of the importance of innovation for the sustainability of clean water services. Through these interactions, employees exchange experiences and develop a shared understanding of the organization's values, challenges, and opportunities. By enabling individuals to contribute contextually appropriate solutions to operational challenges, knowledge sharing fosters a sense of personal responsibility for innovation, making every employee feel part of a shared learning process that drives improvements in efficiency and service quality.

The mediating role of organizational culture

The findings indicate that organizational culture does not significantly mediate the influence of transformational leadership on innovative work behavior. This suggests that established workplace values and practices may not fully support the application of transformational leadership styles in fostering innovative attitudes and actions among employees. In hierarchical organizations, innovation often creates tension, as new ideas must be introduced within strict rules and formalized procedures (Al-Swidi et al., 2021). These findings contrast with Khan et al. (2020), who found that organizational culture positively mediates the relationship between transformational leadership and

innovative work behavior. Organizational culture should influence employees' behaviors (Liu et al., 2021) especially their innovative work behavior. These findings align with (Purnomo et al., 2022) whose study suggests that leaders' perceptions of encouraging organizational cultural change through vision, motivation, or exemplary behavior may not be consistently shared by other members of the organization.

This suggests that a conservative risk culture tends to reduce risk-taking behavior, encouraging organizations to adopt a more rigid and tightly controlled management structure (Virgiawan et al., 2021). Unit heads at the PDAM Tirta Sembada Sleman often lack awareness of the evolving technological landscape, hindering their ability to anticipate organizational innovation initiatives and effectively allocate resources to support them. Additionally, a lack of resources, time, or recognition for innovation can demotivate employees, and organizations resistant to change will likely struggle to foster innovative work behavior.

The mediating role of knowledge sharing

These findings indicate that transformational leadership significantly influences innovative work behavior through knowledge sharing. Thus, transformational leadership's role in fostering trust, collaboration, and the exchange of ideas is crucial in shaping sustainable innovative behavior. Sharif et al. (2021) explains that knowledge sharing is a more constructive mediator than leader-member exchange (LMX) in the relationship between transformational leadership and innovative work behavior. This is likely because LMX focuses on individual relationships rather than on groups or teams and therefore does not always result in widespread knowledge dissemination. Transformational leaders encourage innovation through a mutually beneficial culture of knowledge sharing and collaborative learning.

Knowledge sharing encourages the creation of dynamic knowledge, a strategic resource that strengthens an organization's capacity to achieve and maintain a competitive advantage (Rafique et al., 2022). Knowledge sharing benefits both the recipient and the giver, increasing innovation and problem-solving skills that contribute to a sense of accomplishment and satisfaction (Wang, 2025). Therefore, transformational leaders should encourage knowledge sharing to spark innovative ideas (Agaoglu et al., 2025).

Unit heads at PDAM Tirta Sembada Sleman view meetings as more than formal forums, seeing them as opportunities for constructive dialogue, idea exchange, and broadening shared perspectives to improve organizational performance. Supervisors also invite senior employees to assist and mentor new employees in completing tasks. Junior employees readily ask questions and engage in discussions when facing difficulties, while senior employees offer support and share their experiences, strategies, and practical solutions. This demonstrates that knowledge-sharing streamlines daily work and encourages employees to proactively drive improvements and innovations.

Conclusion and Implications

This study highlights the role of transformational leadership in influencing innovative work behavior, with organizational culture and knowledge sharing as mediators. Uniquely, this study found that transformational leadership can have a positive impact on organizational culture and knowledge sharing but does not have a strong enough influence to affect innovative work behavior. Among the two mediating effects, only knowledge sharing positively mediates the relationship between transformational leadership and innovative work behavior. Organizations need to ensure that leaders have sufficient time, capacity, and competence to guide subordinates. Leaders need to improve knowledge-sharing practices to manage employee intellectual capital, support skill growth, encourage intelligence as a driver of innovation and professional development, and build mutual trust to minimize knowledge-hoarding behavior.

Mentoring facilitates individual development through consistent guidance, planned interaction, in-depth reflection, and a systematically structured learning sequence. Thus, establishing a supportive empowerment system is crucial because such a system can strengthen

employees' innovative work behavior, improving individual performance and contributing to organizational success. Additionally, organizations that demonstrate cultural adaptability, uphold consistent values, involve employees, and adopt a shared mission tend to be more proactive in identifying emerging issues, seeking cost-reduction opportunities, and anticipating future developments. Although contributing to the field, this research has several limitations. Respondent availability posed challenges during data collection. The majority of respondents had busy work schedules and completed the questionnaire under less-than-ideal conditions, such as when tired, rushed, or in an unfavorable emotional state.

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