

Keys to Successful Civil Servant Performance in the Digital Era: Explaining the Role of Visionary-Participative Leadership and Digital Technology Literacy

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Keys to Successful Civil Servant Performance in the Digital Era: Explaining the Role of Visionary-Participative Leadership and Digital Technology Literacy

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Abstract : This study investigates the correlation between visionary-participative leadership style, digital technology literacy, employee involvement, and civil servant performance within the digital transformation context of the Semarang City Regional Revenue Agency. Employing a ³⁹ quantitative methodology, a survey of 105 staff members is conducted. The investigation in this research utilized Structural Equation Modeling methodologies employing the Partial Least Squares (PLS-SEM) framework. This study underscores the significance of adopting a holistic method toward advancing human capital by combining the improvement of digital competencies with tactics to enhance employee involvement. Study findings indicate that digital technology literacy skills substantially and constructively influence employee engagement and performance. Visionary-participative leadership positively impacts employee engagement, yet its direct effect on performance is deemed ³ significant. Employee involvement is demonstrated to have a significant and favorable impact on performance. Theoretical and practical implications emphasize the necessity of crafting a more tailored digital transformation framework for the public sector and the importance of revamping leadership development initiatives to address the intricacies of bureaucracy in the digital age.

Keywords: Civil servant performance, Visionary-participative leadership, Digital technology literacy, Employee Engagement

1. INTRODUCTION

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The Industrial Revolution 4.0 era brought significant changes in the management of government organizations, including providing public services and managing regional revenues. Integrating ¹⁰ digital technologies such as IoT, big data, and AI in government operations demands rapid adaptation from civil servants (Yaqub & Alsabban, 2023; Phan et al., 2023). Although digital transformation in government has become a national priority in Indonesia, its implementation still needs to improve, especially regarding human resource readiness. The Semarang City Regional Revenue Agency faces significant challenges adapting to digital technology. This digital literacy gap directly impacts the efficiency of revenue management, with the realization of regional tax revenues only ⁴⁶ reaching 85% of the set target. Similar problems also occur in other areas, such as in **BPKAD Serang City**, where the implementation of e-government is hampered by inadequate human resources and internet network problems (Inayah, 2023). A study of the Local Government Transaction Electronification program in Soppeng Regency also

highlights the importance of addressing internal and external factors to ensure effective digitalization (Burhan & Gunadi, 2023).

Digital technology literacy is crucial in improving employee performance in the digital era because this proficiency allows employees to utilize technology to carry out tasks more efficiently and increase productivity. A study (Putra et al., 2023) at the Department of Population and Civil Registration of Padang City revealed that digital literacy and transformational leadership significantly influence innovative work behavior, positively impacting performance. Research on SMEs in Bekasi, West Java, shows that digital literacy, technology, and marketing significantly influence SME performance (Patria et al., 2023).

In the context of organizational change, employees' level of digital technology literacy positively impacts their readiness to change, with resistance to change as a mediating factor. Higher digital literacy can facilitate smoother transitions in the workplace. Increasing internet penetration and changing lifestyles also underscore the need for proficient digital literacy, including understanding digital ethics and security (Khassawneh & Elrehail, 2022).

Research in the Portuguese IT sector reveals that participative leadership directly and positively influences employees' innovative work behavior (Mata et al., 2023). Study (Erni et al., 2023) at PT. Indomarco Prismatama in Sidoarjo shows that participative leadership, incentives, and loyalty significantly improve employee performance. The visionary-participative leadership style has significantly influenced employee engagement and performance. Participative leadership, which involves employees in decision-making and problem-solving processes, fosters a positive work environment and promotes innovative work behavior. However, the complexity of institutional theory can moderate this relationship, as seen in a study from the UAE (Bartolović et al., 2022). In the European context, participative leadership is associated with higher levels of employee involvement in decision-making, which is critical for organizational flexibility and crisis management. Likewise, a study of manufacturing SMEs in Nairobi County, Kenya, found that participative leadership significantly improved organizational performance (Ochieng et al., 2023).

This research explores and analyzes the relationship between visionary-participative leadership style, digital technology literacy, employee involvement, and employee performance at the Semarang City Regional Revenue Agency in the context of digital transformation. This study will investigate how a visionary-participative leadership

style and digital technology literacy influence employee engagement, as well as the impact of this engagement on employee performance. This research will also examine the mediating role of employee involvement in the relationship between visionary-participative leadership style and digital technology literacy and employee performance. Understanding these dynamics is hoped to provide valuable insights for optimizing digital transformation in government institutions.

2 Theoretical Model and Research Hypotheses

Employee Performance

The State Civil Service's (SCS) performance is a multifaceted concept with various parameters. Work quality and skills are critical, as highlighted by a study by the Serdang Bedagai District Regional Secretariat, which emphasized the importance of work performance, skills, behavior, and leadership in achieving good performance results (Windy et al., 2023). The amount of work and timeliness are also significant, with organizational commitment and discipline playing an essential role in improving these aspects. Cost-effectiveness and the need for supervision are influenced by the human resources dimension, which is internal to CSC and necessary for enhancing performance and career development, as noted in studies on the role of human resources in public organizations (Ohoiwutun, 2023). In addition, the individual assessment process, including tests such as Realistic - Investigative - Artistic - Social - Enterprising - Conventional (RIASEC), helps map competencies and align them with career interests, thereby optimizing performance and reducing the need for supervision (Pau & Syarifah, 2023). Collectively, these studies illustrate that SCS performance is a complex interaction of various factors, including work quality, quantity, timeliness, cost-effectiveness, supervisory needs, and interpersonal skills, all influenced by organizational commitment, human resources, and ongoing competency development.

9 Employee Engagement

Employee engagement is an essential aspect of human resource management, which includes various dimensions such as emotional, cognitive, and behavioral engagement. It refers to employees believing in an organization's mission, goals, and values and demonstrating commitment through actions and attitudes toward employers and customers (Priya & Malarkodi, 2023). This involvement is multifaceted, involving dedication to the work role, a willingness to give one's best, and an emotional commitment

to the organization and its mission (Markos & Sridevi, 2010). The importance of employee engagement is underscored by numerous studies highlighting its significant impact on organizational success, including increased productivity, profitability, customer satisfaction, and overall competitive advantage. Engaged employees are more likely to be motivated and committed, leading to lower turnover rates and higher levels of dedication and performance.

Research (Punj, 2023) shows that employee engagement is essential for effective management, as it significantly impacts employee retention, performance, and dedication to organizational goals. Human Resource Management practices play a vital role in this process by involving employees in decision-making, offering career development opportunities, managing employment relationships effectively, and promoting diversity and inclusion. These practices increase employee engagement and help develop a positive organizational culture, making employees more loyal and respectful of organizational values and goals (Ploscaru et al., 2023). Empirical studies have shown that HRM practices directly influence employee engagement, empower employees to perform better in their roles, and contribute to the long-term success of organizations (Kavyashree et al., 2023).
H1: Employee involvement has a positive and significant effect on employee performance.

Visionary-Participative Leadership Style

The visionary-participative leadership style effectively combines the attributes of visionary leadership, which involves creating and communicating a strategic vision. Participative leadership emphasizes collaboration and involvement in the decision-making process, characterized by the ability to predict future trends, formulate and realize a vision, and inspire others to achieve goals through innovative and holistic thinking (Firdaus et al., 2023). This integration of leadership styles ensures that leaders are not only forward-thinking and strategic but also inclusive and collaborative, leading to more sustainable and effective outcomes. This combined approach is critical to fostering commitment, efficiency, and a sense of shared purpose among all members of an organization, ultimately driving success and innovation (Amos et al., 2022).

Various studies have proven that visionary leadership is essential in increasing employee engagement and performance. Leaders who demonstrate visionary behavior, projecting future-oriented mental simulations and socialized vision orientation, significantly influence the team's collective role performance (Kim et al., 2023). This visionary approach fosters a sense of direction and purpose and increases job satisfaction,

an essential determinant of employee performance (Hayati, 2020). Additionally, visionary leadership has been shown to positively impact employee voice behavior, with self-efficacy as a mediating factor, encouraging employees to express their ideas and concerns more freely.

Additionally, the integration of workplace spirituality, which includes feelings of compassion, connectedness, and meaningful work, alongside dimensions of employee engagement such as passion, dedication, and absorption, has significantly improved employee performance (Wufron et al., 2022). Visionary leadership and a supportive organizational culture create an environment where employees feel valued and motivated, increasing job satisfaction and performance (Yulius, 2022). In short, by fostering a forward-thinking and inclusive work environment, visionary leadership significantly increases employee engagement and performance through increased job satisfaction, employee self-efficacy, and a supportive organizational culture.

H2: Visionary-participative leadership style has a positive effect on employee engagement.

H3: The visionary-participative leadership style positively affects the performance of civil servants.

Digital technology literacy

Digital technology literacy, the ability to discover, assess, generate, and communicate information using digital technology, enhances bureaucratic competence by equipping individuals with the skills to navigate and utilize digital tools effectively (Thapliyal, 2023). In bureaucratic functions, digital literacy enables better information management, efficient communication, and efficient decision-making processes. The ability to effectively find, evaluate, and use information through digital technology is essential for bureaucrats to carry out their duties efficiently in the digital era (Iqbal et al., 2023). Moreover, digital literacy is not just about technical skills but also involves understanding the ideological practices embedded in digital interactions, which is critical for bureaucrats to engage in informed policymaking and governance (Weninger, 2023).

Anthropological perspectives on digital literacy highlight the importance of affective and moral personality configurations, which can influence bureaucratic roles and responsibilities, encouraging more empathetic and responsive administration (Hockly, 2012). The accessibility of digital resources and platforms also facilitates the sharing best practices and collaborative problem-solving among bureaucrats, increasing their overall

competency and effectiveness (Thapliyal, 2023). Therefore, digital literacy is indispensable for modern bureaucracy, as it improves individual competence and contributes to government institutions' overall efficiency and responsiveness.

Digital technology literacy positively affects employee engagement and performance, as evidenced by (Salju et al., 2023). Research conducted on employees at Indonesian universities found that IT training and digital infrastructure significantly increased digital literacy, positively influencing employee performance by fostering a sense of belonging and commitment in the organization. Likewise, a study (Putra et al., 2023) revealed that digital literacy directly impacts innovative work behavior, indirectly improving employee performance. Additionally, research on the broader impact of digital technology on organizational performance finds that digital transformation increases employee productivity, efficiency, and flexibility. However, effective change management strategies are required to help employees adapt to new technology (Kahfi, 2022).

H4: Digital technology literacy has a positive effect on employee engagement.

H5: Digital technology literacy has a positive effect on the performance of civil servants.

Research methods

This study employs a quantitative methodology to thoroughly comprehend the correlation between visionary-participative leadership style, digital technology literacy, employee involvement, and employee performance at the Semarang City Regional Revenue Agency (Creswell, 2016). The quantitative dimension of the study encompassed a survey of 105 public officials chosen through simple random sampling methods (Hair et al., 2017). The survey utilized a structured questionnaire to assess the research variables: visionary-participative leadership style (Mata et al., 2023), digital technology literacy (Putra et al., 2023; Thapliyal, 2023), employee involvement (Markos & Sridevi, 2010; Punj, 2023), and employee performance (Ohoiwutun, 2023). The data underwent analysis utilizing Partial Least Squares Structural Equation Modeling (PLS-SEM) via SmartPLS software. This choice was made due to its capability to manage intricate models with relatively limited sample sizes (Hair et al., 2017).

2. RESULT

Respondent characteristics

The profile of this study's respondents shows diverse demographic characteristics and backgrounds. Of the 105 respondents, there was a gender balance with 52 men (49.5%) and 53 women (50.5%). Most respondents had an economics/accounting educational background (74.3%) and a bachelor's degree (56.2%). Most respondents (88.6%) held positions other than managerial positions. Regarding work experience, 43.8% had worked for 21 years or more. The largest age group is 41-50 years (40.0%). This profile reflects an experienced workforce with a relevant educational background, indicating potential professional maturity within the organization. This diversity provides a rich perspective for research on leadership, digital literacy, engagement, and employee performance in the digital transformation era.

21 Validity and reliability

To ensure the quality and reliability of the research instruments, validity and reliability analyses were carried out on four main concepts: Visionary-Participatory Leadership, Digital Technology Literacy, Employee Engagement, and Civil Servant Performance. Table 1 below presents the test results, which include 7 factor loadings, Cronbach's Alpha, Average Variance Extracted (AVE), and Composite Reliability for each concept and indicator.

Table 1. Validity and reliability criteria for each construct

Concept	Indicator	Item	Loadings	Cronbach's Alpha	AVE	Composite reliability
Visionary-Participative Leadership	Communicate clear vision	CCV	0,833	0,841	0,676	0,893
	Encourage creative thinking	ECT	0,808			
	Involve in Decisions	ID	0,845			
	Guide problem resolution	GPB	0,803			
Digital Technology Literacy	Know computer basics	KCB	0,832	0,871	0,658	0,906
	Use software proficiently	USP	0,827			
	Utilize digital technology	UDT	0,813			
	Improve tech skills	ITS	0,827			
	Ensure website security	EWS	0,754			
Employee Engagement	Facework challenges	FWC	0,924	0,906	0,842	0,941
	Feel empowered and capable.	FEC	0,919			
	Concentrate while working	CWW	0,910			
Civil Servant Performance	Complete tasks properly	CTP	0,806	0,858	0,700	0,903
	Meet quality standards	MQS	0,823			
	Provide the best service.	PBS	0,845			
	Accept feedback openly	AFO	0,871			

The analysis results in Table 1, validity and reliability for the four main concepts in this research, show excellent measurement quality. Convergent validity is proven by factor loadings above 0.7 for all items and Average Variance Extracted (AVE) values exceeding 0.5 for all concepts (Hair et al., 2017). Internal reliability was confirmed through Cronbach's Alpha above 0.8 and Composite Reliability above 0.8 for all concepts (Nunnally & Bernstein, 1994). Visionary-Participative Leadership shows good internal consistency ($\alpha = 0.841$) and convergent solid validity (AVE = 0.676). Digital Technology Literacy has reliability ($\alpha = 0.871$) and adequate convergent validity (AVE = 0.658). Employee Engagement recorded the highest AVE (0.842), indicating excellent convergent validity, with the highest internal reliability ($\alpha = 0.906$). Employee performance also shows good reliability and validity ($\alpha = 0.858$, AVE = 0.700). Composite Reliability for all concepts is above 0.8, with Employee Engagement reaching the highest value (0.941),

followed by Digital Technology Literacy (0.906), Employee Performance (0.903), and Visionary-Participatory Leadership (0.893). Overall, these results meet the criteria established by Fornell and Larcker for discriminant validity and confirm the robust quality of the measurement instrument, providing a solid foundation for further analysis in this study.

Table 2. Fornell-Lacker Criteria

	Civil Servant Performance	Digital Technology Literacy	Employee Engagement	Visionary-Participative Leadership
Civil Servant Performance	0,837			
Digital Technology Literacy	0,458	0,811		
Employee Engagement	0,415	0,309	0,917	
Visionary-Participative Leadership	0,280	0,140	0,305	0,822

***Fornell-Larcker Criteria should be more than the correlation value of that construct to

The results of processing the Fornell-Larcker Criterion data show good discriminant validity between variables. The diagonal value (AVE root) of each variable is higher than its correlation with other variables, indicating the uniqueness of each construct. Civil Servant Performance has the highest AVE root (0.837) and shows a moderate correlation with Digital Technology Literacy (0.458) and Employee Engagement (0.415), as well as a weak correlation with Visionary-Participative Leadership (0.280). Digital Technology Literacy has an AVE root of 0.811 and a weak to moderate correlation with other variables, with the highest correlation to Civil Servant Performance (0.458). Employee Engagement has the highest AVE root among all variables (0.917), indicating excellent discriminant validity. The correlation with other variables tends to be weak to moderate, with the highest correlation to Civil Servant Performance (0.415). Visionary-Participative Leadership has an AVE root of 0.822 and shows a relatively weak correlation with other variables, with the highest correlation to Employee Engagement (0.305). Overall, these results confirm good discriminant validity between the variables, with each construct showing apparent uniqueness compared to other constructs in the research model.

Inner Model Assessment

In the present study, the focal points of investigation are the endogenous variables of employee engagement and performance. A statistical method examination assessed the degree of association between exogenous and endogenous variables. The study's findings reveal distinct R-square values assigned to individual endogenous variables.

Tabel 3. r-square, f-square, Q and q-square

Construct	r-square*)
Employee Engagement	0,413
Civil Servant Performance	0,365

This study's r-square (R^2) analysis results provide essential insights into the model's predictive power. R^2 is a measure that shows how well the independent variable can explain variations in the dependent variable (Hair et al., 2017). For the Employee Engagement construct, the R^2 value of 0.413 indicates that 41.3% of the variation in employee engagement can be explained by the independent variables in the model, namely visionary-participative leadership and digital technology literacy. Chin (1998) states that an R^2 value above 0.33 can have a moderate effect. Therefore, this model has quite good predictive power to explain employee engagement.

For the Civil Servant Performance construct, an R^2 value of 0.365 indicates that 36.5% of the variation in employee performance can be explained by the variables in the model, including visionary-participative leadership, digital technology literacy, and employee involvement. Hair et al. (2017) suggest that R^2 values above 0.33 can be considered a moderate effect. Thus, this model has strong predictive power to explain civil servant performance. In the employee engagement variable, although the model explains almost half of the variation in employee engagement, 58.7% is still not explained. This indicates that other factors outside the model also contribute to employee engagement. Bakker (2023) states that job characteristics, organizational support, and individual factors can influence employee engagement.

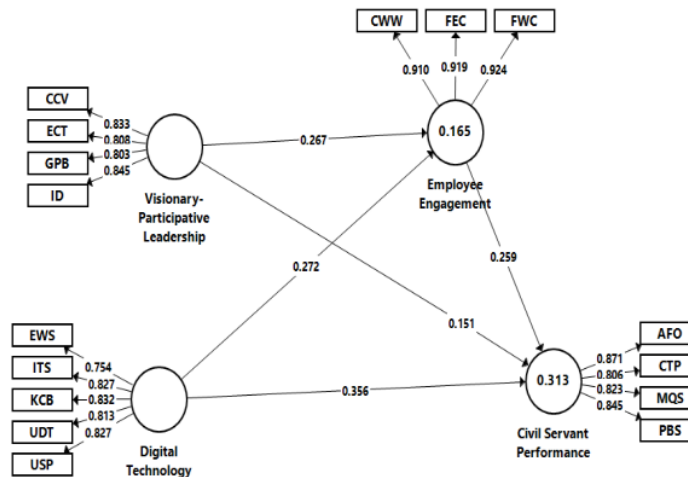
Meanwhile, civil servant performance explains most of the variation in employee performance (36.5%), indicating that the selected variables have high relevance. However, 63.5% of unexplained variation is still influenced by organizational policies, reward systems, or external factors. Research shows that motivation is essential in producing high performance in organizations, but age and gender do not significantly influence work motivation and performance among public sector employees (Hendrawijaya et al., 2019).

Pay variation across positions and ranks also plays a role, especially in low-income countries where it negatively correlates with government performance, suggesting that fair pay structures are critical for optimal performance (Han et al., 2023).

Additionally, the quality of public services could be improved by adequate competence, professionalism, and ethical standards among bureaucratic personnel, which undermines public trust and causes inefficiency and public dissatisfaction (Wawointana et al., 2019). Therefore, addressing unexplained variations in civil service performance requires a multifaceted approach that considers the interaction of intrinsic motivation, equitable reward systems, organizational policies, and the broader socio-political context. This comprehensive understanding can help design interventions that improve public service delivery's effectiveness and efficiency.

Hypothesis test

Path analysis was used to test this study's causal relationship between variables. This method allows the evaluation of direct and indirect influences between variables, providing a comprehensive picture of the dynamics of factors influencing civil servant performance. The following is an interpretation of the results of hypothesis testing based on the path coefficient (beta), t-value, and p-value obtained.



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Figure 1. Path diagram and loading factor values

Tabel 4. Path beta, t-value, and P-value

Path	Path beta	t-value	P-value	Result
Digital Technology Literacy → Civil Servant Performance	0,356	3,633	0,000	Accepted
Digital Technology Literacy → Employee Engagement	0,272	2,852	0,005	Accepted
Employee Engagement → Civil Servant Performance	0,269	2,705	0,033	Accepted
Visionary-Participative Leadership → Civil Servant Performance	0,151	1,310	0,191	Not Accepted
Visionary-Participative Leadership → Employee Engagement	0,267	2,880	0,004	Accepted

The research results in Table 4 show the critical role of digital technology literacy and employee engagement in improving the performance of civil servants. Digital technology literacy has a significant favorable influence on employee performance ($\beta=0.356$, $p<0.001$) and employee engagement ($\beta=0.272$, $p=0.005$). This finding aligns with previous research on the importance of digital competence in the digital transformation era. Employee engagement positively affects performance ($\beta=0.269$, $p=0.033$), supporting previous research on the engagement-performance relationship. Even though the effect is smaller than digital technology literacy, employee engagement is crucial in improving employee performance. Visionary-participative leadership significantly influences employee engagement ($\beta = 0.267$, $p = 0.004$), but its direct effect on employee performance is insignificant ($\beta = 0.151$, $p = 0.191$). This indicates the possible mediating role of employee engagement in the relationship between visionary-participative leadership and employee performance. These findings emphasize the importance of a holistic approach to improving the performance of civil servants. The main focus should be developing digital technology literacy, which has the most substantial direct effect on performance. Apart from that, efforts to increase employee engagement and implement visionary-participative leadership are also important, considering their significant role in this model. Overall, the results of this study provide valuable insights into the factors that influence civil servant performance in the context of digital transformation, emphasizing the importance of technological literacy, employee engagement, and effective leadership styles.

11 3. DISCUSSION

The Influence of Visionary-Participative Leadership Style on Employee Engagement and Performance

This research examines the complex interaction between visionary-participative leadership, employee engagement, and government officials' effectiveness in digital evolution in the public domain. The findings indicate that visionary-participative leadership significantly impacts employee engagement, underscoring its efficacy in inspiring and involving employees. The findings align with prior studies conducted by (Enright, 2018) , emphasizing the importance of a leadership style that combines a forward-thinking vision with a collaborative methodology to tackle digital transformation obstacles. Leaders who adopt a visionary-participative style tend to create a supportive workplace atmosphere that fosters active engagement, empowering staff to partake in decision-making procedures and strategy development. This validates the findings of research conducted by (Bhatti et al., 2019), illustrating that participative leadership has the potential to augment employee creativity and innovation, two crucial components of digital transformation.

Interestingly, the direct influence of this leadership style on civil servant performance is not significant. This insignificance indicates a full mediation effect through employee engagement, where leadership indirectly influences performance by increasing employee engagement. These findings strengthen the argument (Enright, 2018) about the mediating role of employee engagement in the relationship between leadership and organizational performance. The complexity of the public sector also plays a role in this dynamic. The performance of civil servants is often more influenced by structural and systemic factors such as regulations and bureaucratic procedures. Digital transformation in bureaucracies faces challenges that are only sometimes present in the private sector, including the need to maintain public accountability and navigate established hierarchical structures.

The impact of visionary-participative leadership on performance may take longer to become apparent, especially if significant organizational culture change is involved. (Park, 2019) successful organizational transformation often requires time and consistency, especially in complex public organizations. Contextual factors such as organizational size, organizational culture, and technology readiness level can moderate the relationship between leadership and performance (Pawar, 2023). In digital transformation, an organization's readiness to adopt new technologies and the ability to manage change are

essential factors influencing leadership effectiveness. The visionary-participative leadership style acts as a catalyst that creates favorable conditions for increased performance through higher employee involvement. Therefore, to improve civil servants' performance in the digital era, it is essential to consider a visionary-participative leadership style as part of a broader strategy. This strategy includes increasing digital technology literacy and focusing on employee engagement. A holistic approach considering the complex interactions between leadership, engagement, and other organizational factors is more likely to produce sustainable performance improvements in a dynamic and complex public sector context.

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The Effect of Digital Technology Literacy on Employee Engagement and Performance

The research findings suggest that the mastery of digital technology significantly and effectively improves employee involvement and productivity. The outcomes underscore the vital significance of digital competencies in the modern workplace, especially in the public sector, which is transitioning towards digital transformation. Proficiency in digital technology, characterized by adept utilization, comprehension, and engagement with information and communication technology, has emerged as an essential competency in the contemporary digital age (Fasy et al., 2023). Within public administration, digital literacy entails possessing technical proficiencies and a grasp of how technology can enhance public service efficiency, transparency, and quality (Kahfi, 2022).

The strong influence of digital technology literacy on employee engagement can be explained through several mechanisms. Employees with high digital literacy tend to feel more confident and competent in carrying out their duties, especially those involving the use of technology. Utilizing digital tools for communication and collaboration can increase the sense of connectedness and involvement in work. Employees with good digital literacy can better adapt to technological changes and new work processes, which are often a source of stress and resistance in organizations (Hooi & Chan, 2023). This adaptability can reduce anxiety related to technological change and increase engagement in digital transformation initiatives.

The direct influence of digital technology literacy on employee performance is also significant, although more muscular than the influence on employee engagement. This can be explained from several perspectives. First, digital literacy allows employees to work

more efficiently and effectively, utilizing digital tools to optimize work processes and decision-making. Employees with high digital literacy can better access, analyze, and use information relevant to their work, improving the quality of work output. In addition, digital literacy also allows employees to be more innovative in their approach to problem-solving and service provision. The ability to identify and utilize new technology solutions can result in increased efficiency and effectiveness in public services. However, the relationship between digital literacy and performance may only sometimes be linear. Factors such as the suitability of technology to the task, organizational support, and work culture also play an essential role in determining the extent to which digital literacy can translate into improved performance (Wang et al., 2023).

11 **The Effect of Engagement on Employee Performance**

The outcomes of the hypothesis test demonstrate that employee participation exerts a noteworthy positive impact on the efficiency of government officials. These results validate the pivotal significance of employee involvement in enhancing institutional performance, particularly within the governmental domain. Employee involvement, defined by enthusiasm, commitment, and complete task immersion, has been widely acknowledged as a crucial element in enhancing institutional performance (Punj, 2023). Within the governmental framework, employee involvement becomes progressively vital due to the distinctive obstacles encountered, such as the demand to enhance the effectiveness and efficiency of public services amidst constrained resources (Han et al., 2023).

The positive influence of employee involvement on performance can be explained through several mechanisms, that involved employees tend to be more proactive and innovative in their approach to work (Markos & Sridevi, 2010; Wufron et al., 2022). They are more likely to seek new ways to improve work processes and service quality, contributing to overall organizational performance. Employee engagement is closely related to intrinsic motivation. Employees who are emotionally and cognitively engaged with their work tend to be more motivated to do their best, even in the face of challenges or resource limitations that often characterize the public sector. Further employee engagement contributes to a positive and collaborative work climate. Engaged employees are more likely to collaborate with coworkers, share knowledge, and support each other, improving overall team and organizational performance.

The discoveries⁴⁰ of this study hold significant implications for the management of human resources within the public sector. Organizations must prioritize implementing strategies to enhance⁵³ employee engagement and improve overall performance. Such a strategy may encompass implementing leadership development initiatives, enhancing internal communication channels, delegating greater autonomy to employees, and establishing a supportive work atmosphere. Nevertheless, the correlation between employee engagement and performance could exhibit varying degrees of linearity or simplicity. Various contextual elements such as organizational culture, structure, and job nature might moderate this relationship (Han et al., 2023).¹⁴ As a result, organizations are advised to adopt a customized approach to boosting employee engagement, considering the distinct characteristics of their work environment.

4. CONCLUSION

This research reveals several essential findings regarding digital transformation in the Indonesian public sector, especially in the Semarang City Regional Revenue Agency. Digital technology literacy has been proven to have a crucial role in increasing the engagement and performance⁴³ of civil servants. The ability to understand and utilize digital technology not only improves work efficiency but also encourages innovation in public services. These findings emphasize the importance of continued investment in developing civil servants' digital competencies. Interestingly, this research reveals the complexity of the influence of visionary-participative leadership in a bureaucratic context. This leadership style has proven effective in increasing employee engagement, but its direct effect on performance is insignificant.² This suggests that the impact of leadership on performance is likely to be fully mediated by employee engagement.⁵ These findings highlight the importance of understanding leadership dynamics in bureaucratic contexts, where structural and systemic factors can moderate the effectiveness of specific leadership styles.

Employee engagement has been identified as a crucial driver of performance within the parameters of this particular investigation. Establishing a conducive work setting that fosters employee passion, commitment, and deep involvement in their tasks has been underscored as significantly pivotal⁴⁸ in enhancing efficiency and elevating the standard of public services. Within the public sector domain, employee participation not only improves performance outcomes but also holds the capacity to fortify the internalization of values related to public service. The findings of this investigation underscore the

pressing need for a comprehensive approach to advancing human resources within the public sector. A judicious equilibrium must be struck between enhancing technical proficiencies, such as proficiency in digital technologies, cultivating interpersonal skills, such as leadership abilities, and implementing strategies to amplify employee engagement. This necessitates a restructuring of employee development initiatives to integrate these multifaceted elements.

This research also reveals unique challenges in implementing digital transformation in a bureaucratic environment. In contrast to the private sector, transformation in the public sector must consider factors such as strict regulations, an established hierarchical structure, and the need to maintain public accountability. This highlights the need for digital transformation strategies explicitly tailored to the government context.

²⁸ This research contributes significantly to our understanding of the dynamics of digital transformation in the public sector, especially in the context of the Indonesian bureaucracy. Theoretically, these findings enrich the literature on public management and digital transformation with several important implications. The research results strengthen and expand the understanding of the relationship between digital literacy and employee performance in the public sector context, providing an empirical foundation for developing a more comprehensive theoretical model. Findings about the indirect effects of visionary-participative leadership on performance through employee engagement challenge simple assumptions about the effectiveness of leadership styles in bureaucratic contexts, encouraging the development of more nuanced leadership theories for the public sector. The research results also confirm the importance of employee engagement as a critical variable in understanding public sector performance, encouraging further integration of employee engagement theory into public sector performance models. Furthermore, this research highlights the need for a more contextualized theory of digital transformation for the public sector, which considers the unique characteristics of bureaucracies and the specific challenges faced in implementing digital technologies.

From a managerial standpoint, this study presents numerous significant practical ramifications. Public sector entities must prioritize training and development initiatives that enhance employee digital literacy. These initiatives should encompass structured educational programs, mentorship schemes, and project-oriented learning. Management must embrace a comprehensive human resources development approach that emphasizes technical competencies and emphasizes soft skills like leadership and adaptability to

change. Revisions are necessary for the performance evaluation system to integrate novel metrics such as employee engagement, creativity, and proficiency in utilizing digital tools. Leadership training schemes should be tailored to acknowledge the intricacies and distinctive attributes of the public sector, with a focus on navigating digital transformation. Furthermore, organizations should formulate precise plans to elevate employee commitment through schemes like acknowledgment programs, avenues for career advancement, and fostering a supportive organizational climate.

Although this research provides valuable insights, several recommendations exist to overcome its weaknesses in further studies. For example, expanding geographical coverage to various regions in Indonesia could provide a more comprehensive picture. Longitudinal studies can better understand how relationships between variables evolve. Future research could explore potential moderator variables such as organizational culture, bureaucratic structure, or other contextual factors. Comparative studies between the public and private sectors can provide a better understanding of the uniqueness of digital transformation in the public sector. Developing and using more comprehensive and objective performance measures could increase the validity of the findings. Given the hierarchical structure of government organizations, multilevel analysis can provide a more nuanced understanding of how factors at different organizational levels interact.

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