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Research paper



Impact of Digital Transformation on Human Resource Management: Linking Competency Development To Employee Performance

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Abstract

This study examines the impact of digital transformation on employee performance, with digital-based human resource (HR) competencies serving as a mediating factor in public companies in Indonesia. A quantitative approach was em-ployed, using an online survey adminis-tered to 100 permanent employees who had been actively involved in digitalized HR management systems for at least one year. The study adopted an explanatory research design, and data were ana-lyzed using descriptive statistics, correlation analysis, and multiple linear re-gression. Findings indicate that digital trans-formation significantly enhances employee performance both directly and indirectly through the development of digital HR competencies. Specifically, the adoption of technology-based work systems, digitalization of HR processes, and the establishment of a digital work culture improve employees' digital technical, analytical, adaptive, and collaborative abil-ities, which in turn positively influence productivity, efficiency, and work innovation. The results confirm that digital-based HR competencies partially mediate the relationship between digital transformation and performance, highlighting the importance of employee readiness and skill development in realizing the benefits of technological adoption. The study contributes to the Resource-Based View (RBV) perspective by demonstrating that human capital with advanced digital competencies represents a unique, inimitable resource that creates sustainable competitive advantage. Practically, the findings suggest that organizations should invest in continuous digital competency development, integrate digital technologies into HR strategy, and cultivate a supportive digital work culture to optimize performance outcomes.

Keywords: *Digital Transformation; Human Resource Competencies; Employee Performance; Public Companies; Indonesia; Digital Work Culture.*

1. Introduction

The rapid acceleration of digital technologies has reshaped the contemporary business environment, compelling organizations to funda-mentally rethink how they manage their human resources (HR). Digital transformation entails the strategic integration of digital technolo-gies—such as cloud computing, artificial intelligence (AI), big data analytics, and automated systems—across organizational processes to improve efficiency, agility, and decision making (Vial, 2019; Verhoef et al., 2021). In the context of Human Resource Management (HRM), this transformation is no longer limited to the digitization of administrative tasks but extends to a holistic reconfiguration of HR functions, including recruitment, training and development, performance assessment, and employee engagement (Bondarouk & Ruël, 2009; Strohmeier, 2020).

Digital transformation in HRM has been recognized as a crucial strategic initiative that can potentially elevate HR roles from administrative enablers to proactive partners in organizational strategy (Ulrich, 1997; Marler & Boudreau, 2017). A growing body of literature demon-strates that digital HR systems—such as Human Resource Information Systems (HRIS), e-learning platforms, and analytics tools—signif-icantly enhance operational processes by automating routine tasks, enabling data-driven decisions, and facilitating more agile responses to environmental changes (Marler & Boudreau, 2017; Strohmeier, 2020). As organizations face unprecedented levels of competition and uncertainty, the ability of HR departments to leverage digital tools effectively has become indispensable for sustaining performance and competitive advantage.

Despite the compelling potential of digitalization, realizing meaningful organizational outcomes through digital HRM practices is not automatic. One central mechanism through which digital transformation fosters performance improvement is competency development among HR professionals and employees. Competency development refers to the systematic enhancement of knowledge, skills, and abilities that are crucial for executing digitally oriented HR tasks effectively (Boyatzis, 2008; Becker & Huselid, 2006). The literature increasingly underscores that digital transformation sets higher demands for digital competencies, such as data literacy, technology management skills, and adaptive proficiency, which are essential to exploit digital features and derive strategic value (van Laar et al., 2017; Kane et al., 2015).

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Without these competencies, organizations risk underutilizing digital investments, thereby limiting the transformational impact on HR performance outcomes.

Empirical research highlights a positive relationship between digital competencies and employee performance in digitalized settings. Studies show that digital competence significantly influences performance by enabling employees to use digital tools more efficiently and adapt to evolving job demands (van Laar et al., 2017; Kane et al., 2015). Furthermore, evidence from strategic HRM research indicates that investments in human capital and capability development strengthen the performance effects of organizational initiatives (Becker & Huselid, 2006; Jiang et al., 2012). These findings suggest a mediating role of competency development in the link between digital transformation and performance outcomes, where competency enhancements amplify the beneficial effects of technological adoption on employee performance.

At the theoretical level, the relationship between digital transformation, competency development, and performance can be understood through the lens of Resource-Based View (RBV) and dynamic capabilities theory. According to RBV, sustained organizational advantage stems from resources that are valuable, rare, inimitable, and non-substitutable (Barney, 1991; Wright et al., 1994). In this framing, digital technologies and the associated competencies of HR professionals constitute strategic resources that, when aligned with organizational goals, can generate superior performance outcomes. Dynamic capabilities further extend this view by emphasizing the organization's ability to integrate, build, and reconfigure internal competencies to address rapidly changing environments (Teece et al., 1997; Teece, 2007). Thus, digital transformation initiatives that prioritize competency development enhance an organization's adaptive capacity, allowing HR to respond to technological disruptions and evolving workforce needs more effectively.

Although this manuscript was previously labeled as a "Review," the structure and methodological approach clearly indicate that it constitutes a quantitative empirical study. The research employs hypothesis testing, statistical modeling, and structured data collection to examine the mediating role of competency development in the relationship between digital transformation and HRM performance. Therefore, the classification has been aligned to reflect its empirical nature, ensuring conceptual and methodological consistency.

Despite strong theoretical grounding and empirical indications, the research landscape still exhibits several gaps. While multiple studies have examined digital HR practices in isolation, fewer investigations provide an integrated empirical assessment of how digital transformation influences HR performance through competency development as an intervening mechanism. Most extant research tends to focus on singular dimensions of digital HRM—such as digital recruitment systems, e-performance evaluation platforms, or HR analytics—without fully articulating the interplay between technology adoption, skill enhancement, and performance outcomes (Marler & Boudreau, 2017; Strohmeier, 2020). This leaves an incomplete understanding of the mechanisms that connect digital transformation with performance improvements, particularly in relation to competency pathways.

Moreover, existing research often adopts cross-sectional designs, which constrain causal inference regarding the dynamic effects of digital transformation over time (Jiang et al., 2012). There is a pressing need for empirical models that capture the mediating influence of competency development with greater precision and address how HR competencies evolve alongside digital change processes. Such insights would help bridge a key knowledge gap in both academic scholarship and managerial practice, offering a clearer picture of how investments in digital HR technologies translate into measurable improvements in HR performance.

In summary, while digital transformation holds considerable promise for revitalizing HR functions and enhancing employee performance, the realization of these benefits is contingent upon the organization's ability to develop relevant competencies. Digital tools alone cannot guarantee performance improvements; they must be complemented by strategic HR capability building that enables employees to utilize technology effectively and adapt to evolving job requirements. Consequently, investigating the impact of digital transformation on HRM performance through competency development not only contributes to theoretical advancement but also provides actionable insights for practitioners seeking to orchestrate successful digital transitions. This study therefore positions itself explicitly as a quantitative empirical investigation that tests the mediating role of competency development in explaining how digital transformation affects HRM performance.

2. Theoretical Framework

2.1. Digital transformation in human resource management

Digital transformation refers to the strategic reconfiguration of organizational processes, structures, and value creation logics through the integration of digital technologies (Vial, 2019; Verhoef et al., 2021). Unlike simple digitization, which merely converts analog processes into digital formats, digital transformation implies systemic organizational change that reshapes decision-making structures, coordination mechanisms, and performance metrics. In the context of Human Resource Management (HRM), this transformation goes beyond administrative automation and involves the redesign of recruitment systems, performance management, talent analytics, learning platforms, and employee experience architectures (Bondarouk & Ruël, 2009; Strohmeier, 2020).

Early studies on electronic HRM emphasized efficiency gains and cost reduction (Bondarouk & Ruël, 2009). However, more recent scholarship argues that digital HRM has evolved toward a strategic and data-driven function that enables evidence-based decision-making and predictive workforce analytics (Marler & Boudreau, 2017). For instance, HR analytics allows organizations to link talent metrics with business outcomes, shifting HR from a transactional support unit to a strategic value creator.

Nevertheless, the literature reveals contrasting perspectives. While some studies report significant improvements in agility, transparency, and employee engagement following digital HR implementation (Strohmeier, 2020; Verhoef et al., 2021), others caution that digital transformation may increase work intensification, surveillance, and technostress (Colbert et al., 2016). Reports from the OECD (2019) and the World Bank (2021) further highlight that digital transformation outcomes are highly contingent on institutional readiness, governance capacity, and workforce skills. This divergence indicates that digital transformation is not inherently performance-enhancing; rather, its effectiveness depends on complementary human capital investments and organizational capabilities.

Despite the growing body of research, much of the existing literature remains functionally fragmented—examining digital recruitment, e-learning, or HR analytics independently—without fully theorizing how digital transformation influences employee-level performance outcomes through human capability development mechanisms. This theoretical fragmentation justifies the need for an integrative mediation framework linking digital transformation, competency development, and performance.

2.2. Competency development in the digital era

Competency development refers to the structured enhancement of employees' knowledge, skills, abilities, and behavioral attributes required to perform effectively in evolving environments (Boyatzis, 2008). In the digital era, competencies extend beyond technical proficiency to include data literacy, digital communication, adaptive problem-solving, and continuous learning capacity (van Laar et al., 2017). Digital transformation intensifies competency demands because employees must not only operate digital tools but also interpret analytics outputs, collaborate virtually, and respond to rapid technological shifts. According to OECD (2019), digital skill gaps represent one of the most significant barriers to leveraging digital investments. Similarly, World Bank (2021) findings suggest that digital infrastructure without parallel skill development yields limited productivity gains in emerging economies.

Empirical research supports the argument that digital competencies enhance task efficiency, innovation capability, and organizational adaptability (van Laar et al., 2017; Colbert et al., 2016). However, a critical debate persists regarding whether digital competencies function merely as operational enablers or as higher-order dynamic capabilities that reshape strategic performance outcomes. While some scholars conceptualize digital skills as technical competencies, others argue that adaptive and cognitive digital competencies are more influential under conditions of technological turbulence (Kane et al., 2015).

Moreover, competency development programs vary significantly across organizations. Continuous digital upskilling initiatives, embedded learning systems, and analytics-based training personalization have shown stronger performance effects compared to one-off training interventions (Marler & Boudreau, 2017). This suggests that the effectiveness of digital transformation is contingent not only on the presence of competencies but on the institutionalization of sustained competency development mechanisms.

2.3. Linking competency development to employee performance

Employee performance typically encompasses task performance, contextual performance, productivity, and service quality contributions (Colbert et al., 2016). In digitalized environments, performance increasingly depends on the ability to integrate technological resources into daily workflows.

Empirical findings demonstrate a positive association between digital competence and performance outcomes, particularly when employees exhibit strong adaptive capabilities and data-driven decision skills (van Laar et al., 2017). However, the causal pathways remain debated. Some studies report direct effects of digital competencies on performance, while others indicate indirect mechanisms mediated by employee agility, engagement, or innovation behavior (Kane et al., 2015).

Furthermore, methodological limitations constrain existing conclusions. Many studies rely on cross-sectional designs and self-reported performance measures, limiting causal inference (Colbert et al., 2016). Sector-specific studies—particularly in advanced economies—also reduce generalizability to emerging market contexts. These inconsistencies highlight the necessity of testing competency development explicitly as a mediating mechanism within a structured empirical model rather than assuming a linear digital transformation–performance relationship.

Thus, this study advances the literature by conceptualizing competency development as a critical intervening construct that translates digital transformation initiatives into measurable HRM performance improvements.

2.4. Theoretical perspectives and research gaps

The Resource-Based View (RBV) posits that sustainable competitive advantage arises from resources that are valuable, rare, inimitable, and non-substitutable (Barney, 1991). Digital technologies alone rarely meet these criteria due to widespread accessibility. However, when combined with firm-specific competencies and learning systems, they may form inimitable capability configurations.

Dynamic capabilities theory further refines this perspective by emphasizing an organization's ability to integrate, build, and reconfigure competencies in response to environmental change (Teece et al., 1997). Within this framework, digital competency development can be conceptualized as a dynamic capability that enables organizations to continually realign HR functions with technological evolution.

Despite theoretical support, empirical gaps remain significant. First, few studies empirically test mediation effects linking digital transformation, competency development, and performance within a unified model. Second, longitudinal examinations of competency evolution during digital transitions remain scarce. Third, emerging economy contexts—where institutional and digital maturity levels differ—are underrepresented in high-impact journals (OECD, 2019; World Bank, 2021).

Addressing these gaps, this study empirically investigates the mediating role of competency development in the relationship between digital transformation and HRM performance, thereby contributing theoretically grounded and statistically validated insights to digital HRM scholarship.

3. Research Method

This study employs a quantitative research approach utilizing a survey method to investigate the impact of digital transformation on employee performance, mediated by digital-based human resource (HR) competencies. The research was conducted in several public companies in Indonesia that have implemented digital-based HR management systems. The selection of these companies was based on documented evidence of digital HR system implementation, ensuring contextual relevance for examining the structural relationships among digital transformation, competency development, and employee performance (Verhoef et al., 2021; Strohmeier, 2020).

The study adopted an explanatory research design aimed at testing hypothesized causal relationships among variables (Creswell & Creswell, 2018). The population consisted of permanent employees of the selected companies. The final sample included 100 respondents selected using purposive sampling, with criteria requiring at least one year of employment and active involvement in digitally supported work processes.

Although the sample size (n = 100) is relatively modest, it meets the minimum threshold for regression-based mediation analysis, particularly when the model includes a limited number of predictors (Hair et al., 2022). However, it is acknowledged that a larger sample would increase statistical power and generalizability, especially for detecting indirect effects in mediation models (Kline, 2016).

Data collection was conducted via a closed-ended online questionnaire. All items were measured on a five-point Likert scale ranging from "strongly disagree" (1) to "strongly agree" (5).

3.1. Digital transformation

Digital transformation is conceptualized as the strategic integration of digital technologies into HR management processes, resulting in structural and cultural changes within organizations (Vial, 2019; Verhoef et al., 2021). The construct was operationalized using three indicators:

1) Technology-Based Work System Changes.
2) Digitalization of HR Processes.
3) Digital Work Culture.

The measurement items were adapted from prior digital transformation and digital HRM studies to ensure content validity and conceptual alignment with established literature (Strohmeier, 2020; Vial, 2019).

3.2. Digital-based HR competence

Digital-based HR competence is defined as the employee's ability to effectively utilize digital technologies to support HR-related tasks and decision-making (van Laar et al., 2017). The construct comprises four indicators:

1) Digital Technical Ability.
2) Analytical Ability.
3) Adaptive Ability.
4) Digital Collaborative Ability.

The competency framework aligns with 21st-century digital skills models emphasizing technical, cognitive, and socio-digital competencies (van Laar et al., 2017; Colbert et al., 2016).

3.3. Employee performance

Employee performance refers to the degree to which employees achieve work objectives in terms of productivity, efficiency, and innovation (Colbert et al., 2016). This variable was measured through:

1) Work Productivity.
2) Work Efficiency.
3) Work Innovation.

The inclusion of innovation as a performance dimension reflects contemporary HRM literature suggesting that digital environments require not only efficiency but also creative and adaptive performance behaviors.

3.4. Data collection and analysis

The research procedure involved four stages: questionnaire development and pilot testing, online data distribution, data screening and coding, and statistical analysis.

Prior to hypothesis testing, validity was assessed using factor loadings and construct validity measures, while reliability was evaluated using Cronbach's alpha and composite reliability coefficients (Hair et al., 2022).

Data analysis was conducted using SPSS Version 25. Descriptive statistics were first calculated to summarize demographic characteristics. Inferential analysis was performed using multiple linear regression.

To test the mediating role of digital-based HR competence, the study employed a bootstrapping procedure with bias-corrected confidence intervals (5,000 resamples) following the approach recommended by Preacher and Hayes (2008). Bootstrapping is preferred over the traditional Sobel test because it does not assume normal distribution of indirect effects and provides more robust estimates of mediation.

The mediation analysis examined:

- Direct effect of Digital Transformation → Employee Performance
- Direct effect of Digital Transformation → HR Competence
- Direct effect of HR Competence → Employee Performance
- Indirect effect (Digital Transformation → HR Competence → Employee Performance)

An indirect effect was considered significant when the 95% confidence interval did not include zero.

3.5. Common method bias

Given that all variables were collected using self-reported questionnaires at a single time point, the study addressed potential common method bias (CMB). Procedural remedies included assuring respondent anonymity, minimizing item ambiguity, and separating construct sections within the questionnaire (Podsakoff et al., 2003).

Statistically, Harman's single-factor test was conducted to assess whether a single factor accounted for the majority of variance. The results indicated that no single factor explained more than 50% of total variance, suggesting that common method bias was unlikely to substantially distort the findings (Podsakoff et al., 2003).

3.6. Methodological limitations

Several methodological limitations should be acknowledged. First, the cross-sectional design restricts causal inference, as data were collected at a single time point. Longitudinal designs would provide stronger evidence regarding the temporal dynamics of digital transformation and competency development (Kline, 2016).

Second, the sample size (n = 100), while adequate for regression-based mediation analysis, may limit statistical power and external validity. Future studies should employ larger samples and multi-sector data to enhance generalizability.

Third, reliance on self-reported performance measures may introduce perceptual bias. Future research may incorporate supervisor ratings or objective performance indicators to strengthen measurement robustness.

Despite these limitations, the study provides structured empirical evidence on the mediating role of digital-based HR competence in linking digital transformation to employee performance.

4. Result and Discussion

The results of this study indicate that digital transformation plays a critical role in enhancing both digital-based HR competencies and employee performance within public companies in Indonesia. The adoption of digital technologies facilitates changes in work systems, communication patterns, and data-driven decision-making, supporting faster and more efficient HR processes (Mahmudah et al., 2024; Setiawan & Mulyana, 2025). These findings are consistent with prior studies, which suggest that digital transformation enables organizations to achieve greater operational agility and improved employee outcomes (Airlangga et al., 2025; Munawaroh et al., 2026).

4.1. Respondent characteristics

A total of 100 respondents from various public companies participated in this study. Respondents had at least one year of experience and were actively engaged in digitalized HR management systems. As shown in Table 1, the majority of respondents were aged 31–40 years (40%) and held a bachelor's degree (55%). This suggests that most respondents are of productive working age and possess the educational background necessary to adapt to technological changes in the workplace.

Table 1: Respondent Characteristics

Variable	Category	Total	Percentage
Age	<30 years	25	25%
	31–40 years	40	40%
	41–50 years	25	25%
	>50 years	10	10%
Education	High School	10	10%
	Bachelor's Degree	55	55%
	Master's Degree	30	30%
	Doctoral Degree	5	5%
Length of Service	1–3 years	18	18%
	4–6 years	30	30%
	7–10 years	28	28%
	>10 years	24	24%

These characteristics support the applicability of the Resource-Based View (RBV) theory, which posits that unique and difficult-to-imitate resources—such as digital-based HR competencies—serve as sources of competitive advantage (Barney, 1991). The demographic profile, characterized by younger, educated, and experienced employees, suggests that these human resources are capable of leveraging digital technologies to enhance performance, aligning with findings by Setiawan and Prabowo (2022) regarding the positive impact of digital HR competencies on productivity and efficiency in both public and private organizations.

4.2. Descriptive analysis

Descriptive statistics demonstrate that all variables exhibit high mean values, indicating generally positive employee perceptions of digital transformation, HR digital competencies, and overall performance.

Table 2: Descriptive Statistics and Correlation Between Variables

Variable	Mean	Std. Dev	Correlation
Digital Transformation	4.12	0.58	-
Digital-Based HR Competence	4.05	0.61	0.61
Employee Performance	4.22	0.55	0.48

The strongest correlation ($r = 0.61$) exists between digital transformation and digital-based HR competencies, highlighting that effective adoption of digital systems is closely associated with employee digital capabilities. The correlation between digital transformation and employee performance ($r = 0.48$) and between HR competencies and performance ($r = 0.52$) further suggests that competency development partially mediates the effect of technology adoption on employee outcomes, consistent with prior research emphasizing the mediating role of skills and capabilities in realizing performance benefits from digital initiatives (Munawaroh et al., 2026; Kristanti & Hariyanti, 2025).

4.3. Hypothesis testing

Hypothesis testing using multiple linear regression indicates that all proposed relationships are positive and statistically significant at $p < 0.01$ (Table 3).

Table 3: Hypothesis Test Results

Relationship	Coefficient (β)	t-value	p-value	Description
Digital Transformation → Digital-Based HR Competence	0.61	8.42	0.000	Significant
Digital Transformation → Employee Performance	0.48	6.55	0.000	Significant
Digital-Based HR Competence → Employee Performance	0.52	7.23	0.000	Significant
Mediation (Digital Transformation → Digital-Based HR Competence → Employee Performance)	0.32	5.14	0.000	Partial

The coefficient of determination indicates that R^2 for Digital-Based HR Competence is 0.37, and R^2 for Employee Performance is 0.59, implying that 59% of the variation in employee performance can be explained by digital transformation and digital-based HR competencies. This supports the conceptual framework in which HR competencies partially mediate the effect of digital transformation on performance (Hair et al., 2022).

4.4. Conceptual framework and mechanisms

The conceptual framework (Figure 1) positions Digital Transformation (X) as an independent variable, encompassing the adoption of digital technology, HR process digitalization, and digital work culture. Digital-Based HR Competencies (Z) serve as the mediating mechanism, reflecting employees' digital technical, analytical, adaptive, and collaborative abilities. Employee Performance (Y) is the dependent variable, measured through productivity, efficiency, and innovation.

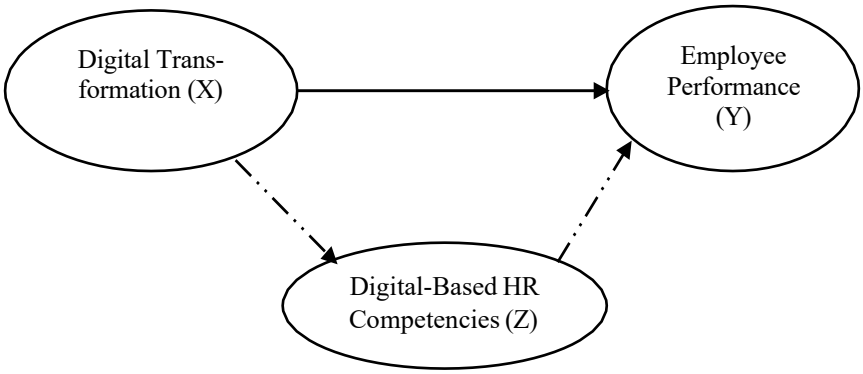


Fig. 1: Conceptual Framework.

The framework emphasizes that digital transformation does not automatically guarantee enhanced performance. Its effectiveness depends on employees' readiness, skill sets, and ability to leverage digital tools (Airlangga et al., 2025; Nugroho & Tambunan, 2025). Employees with higher levels of digital competencies are better able to interpret data, collaborate virtually, and adapt to new systems, thereby realizing performance gains. This aligns with dynamic capabilities theory, which posits that an organization's competitive advantage is contingent upon the workforce's ability to adapt and integrate technological innovations effectively (Teece et al., 1997).

4.5. Implications and discussion

The findings indicate that digital-based HR competencies function as a significant mediating mechanism in the relationship between digital transformation and employee performance. This suggests that digital technologies alone do not automatically generate performance gains; rather, performance improvements materialize when employees possess the competencies necessary to interpret, apply, and strategically leverage digital systems. These findings align with research emphasizing that digital transformation outcomes depend heavily on complementary human capital investments (Vial, 2019; Verhoef et al., 2021).

From a Resource-Based View (RBV) perspective, digital technologies themselves are rarely rare or inimitable, as competing organizations can adopt similar systems. However, digital competencies embedded within organizational routines, learning cultures, and firm-specific HR architectures can evolve into rare and difficult-to-imitate strategic assets (Barney, 1991). When digital skills are continuously developed through structured training systems, mentoring arrangements, and experiential learning processes, they become path-dependent and socially complex—two characteristics that enhance inimitability.

Moreover, dynamic capabilities theory provides further insight into how digital competencies function beyond operational skills. Digital competency development can be conceptualized as a higher-order capability enabling organizations to sense technological changes, seize digital opportunities, and reconfigure HR processes accordingly (Teece et al., 1997). In this sense, competency development does not merely support digital systems—it actively shapes how digital transformation evolves and sustains performance advantages over time.

Descriptive findings indicating positive employee perceptions of digital transformation further suggest organizational readiness and cultural alignment with technological change. However, positive perception alone does not guarantee sustained performance improvement unless supported by structured and institutionalized competency development mechanisms (Marler & Boudreau, 2017). Thus, public companies should prioritize continuous digital upskilling programs, adaptive learning systems, cross-department collaboration platforms, and analytics-driven training personalization to enhance both technical and adaptive competencies.

Several limitations must be acknowledged. First, the study employed a cross-sectional design, which limits the ability to draw strong causal inferences regarding the temporal dynamics between digital transformation, competency development, and employee performance. Longitudinal research designs would allow for a more rigorous examination of how digital competencies evolve over time and how they shape performance trajectories.

Second, the study relied on self-reported measures for all constructs, including employee performance. Although procedural remedies were applied to minimize bias, self-reported data may introduce perceptual bias or social desirability effects. Future research should incorporate supervisor-rated performance measures or objective productivity indicators to strengthen measurement validity (Podsakoff et al., 2003).

Third, the research context was limited to public companies in Indonesia. While this context provides valuable insight into emerging economy settings, it may restrict generalizability to private-sector organizations or other national institutional environments with different levels of digital maturity.

Future studies should adopt longitudinal designs to capture the dynamic and evolving nature of digital competency development during digital transformation processes. Such designs would clarify whether competency development precedes performance improvement or whether reciprocal reinforcement occurs over time.

Comparative cross-industry and cross-country research would also enrich theoretical understanding by identifying how institutional environments, regulatory frameworks, and digital infrastructure levels moderate the digital transformation–performance relationship. In particular, comparative economic studies between emerging and advanced economies could reveal whether digital competencies function differently under varying technological maturity conditions (OECD, 2019; World Bank, 2021).

Furthermore, future research may differentiate between technical digital skills and adaptive-cognitive digital competencies to examine which dimensions are more critical under high technological turbulence. Incorporating multi-level modeling approaches could also explore how organizational-level digital strategy interacts with individual-level competencies to influence performance outcomes.

Overall, this study contributes empirical evidence to the growing literature on digital HRM by demonstrating that competency development plays a pivotal mediating role. The findings reinforce the argument that sustainable performance advantages in digital environments are not technology-driven but capability-driven.

5. Conclusion and Recommendation

5.1. Conclusion

This study investigated the impact of digital transformation on employee performance, with digital-based HR competencies serving as a mediating factor in public companies in Indonesia. The results provide strong empirical evidence that digital transformation significantly enhances employee performance both directly and indirectly through the development of HR competencies. Specifically, the adoption of technology-driven work systems, the digitalization of HR processes, and the promotion of a digital work culture positively influence employees' digital technical, analytical, adaptive, and collaborative abilities, which in turn improve productivity, efficiency, and innovation in work outcomes.

The conceptual framework is supported, demonstrating that digital-based HR competencies partially mediate the relationship between digital transformation and employee performance. This finding reinforces the argument that digital transformation generates performance gains not merely through technological deployment, but through the organization's ability to cultivate and institutionalize digital competencies within its human resource architecture.

From a Resource-Based View perspective, digital technologies alone are not inherently sources of sustained competitive advantage, as they can be replicated by competitors. However, when digital competencies are embedded within organizational routines, learning systems, and collaborative practices, they become firm-specific capabilities that are difficult to imitate. Thus, digital-based HR competencies function as strategic resources that enhance the value of digital transformation initiatives.

Furthermore, the study highlights that successful digital transformation requires not only the adoption of advanced technologies but also sustained investment in human capital development. The alignment between digital infrastructure, employee skills, organizational culture, and performance management systems emerges as a critical condition for transforming technological change into measurable performance outcomes.

Overall, these results confirm that organizations cannot rely solely on technology adoption to improve performance. Digital competency development is a critical mechanism through which digital transformation translates into tangible performance improvements. The study therefore contributes theoretically by validating a mediation-based model linking digital transformation, competency development, and employee performance, and practically by emphasizing capability-driven digital strategies.

5.2. Recommendation

Based on the study findings, several practical recommendations can be proposed for managers, policymakers, and HR practitioners:

1) Invest in Structured and Continuous Digital Competency Development. Organizations should implement systematic training programs, mentoring systems, and experiential learning initiatives to strengthen employees' digital technical, analytical, adaptive, and collaborative competencies. Continuous upskilling ensures that digital transformation efforts remain aligned with evolving technological demands.
2) Embed Digital Transformation within Strategic HRM Frameworks. Digital initiatives should not be treated as standalone technological upgrades. Instead, they must be integrated into recruitment systems, performance management processes, learning and development strategies, and talent analytics frameworks to ensure coherence between technology and human capital development.
3) Strengthen Organizational Digital Culture. Leadership should actively promote openness to technological change, experimentation with digital tools, and cross-functional collaboration. Incentive systems and recognition mechanisms can further reinforce digital adoption and competency growth.
4) Adopt Data-Driven Performance Monitoring Systems. Organizations should continuously evaluate the effectiveness of digital transformation initiatives through measurable performance indicators. Analytics-based monitoring enables evidence-based adjustments and continuous improvement in both technology use and competency development.
5) Institutionalize Knowledge Sharing Mechanisms. Digital platforms should be leveraged to facilitate cross-department collaboration, peer mentoring, and organizational learning communities. Such mechanisms accelerate the diffusion of digital competencies and strengthen collective capability development.

In conclusion, public companies in Indonesia and similar emerging market contexts can enhance employee performance and build sustainable competitive advantage by simultaneously investing in digital technologies and structured competency development. Future research is encouraged to explore longitudinal designs, comparative sectoral analyses, and potential moderating variables such as organizational culture or leadership style to deepen understanding of capability-driven digital transformation.

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