



The Transformation of Human Resource Management Practices in Strengthening Workforce Agility in the Digital Business Era

Dianawati Suryaningtyas

Universitas PGRI Kanjuruhan Malang

Corresponding Author: Dianawati Suryaningtyas, diana.surya@unikama.ac.id

ARTICLE INFO

Keywords: HR Transformation, Human Resource Management, Workforce Agility, Digital Business, Digital Competence

Received : 3 April 2026

Revised : 18 May 2026

Accepted : 19 June 2026

©2026 Suryaningtyas: This is an open-access article distributed under the terms of the [Creative Commons Atribusi 4.0 Internasional](https://creativecommons.org/licenses/by-sa/4.0/)



ABSTRACT

This study examines the transformation of Human Resource Management (HRM) practices in strengthening workforce agility in the midst of the development of the digital business ecosystem and increasingly dynamic organizational demands. The research aims to analyze the influence of adaptive HRM practices, including the development of digital competencies, flexible work systems, and technology-based performance management on improving workforce agility. The research uses an explanatory quantitative approach by collecting data through a survey of 120 employees at digital-based companies in Indonesia. Data analysis was carried out using Partial Least Squares Structural Equation Modeling (PLS-SEM). The results show that adaptive HRM practices have a significant effect on increasing workforce agility through increased responsiveness, learning adaptability, and employee collaboration capacity in a dynamic work environment. The development of digital competencies is the most dominant factor in supporting agile work behavior. This research confirms that the transformation of HRM practices contributes strategically to increasing organizational competitiveness and adaptability in the digital business era

INTRODUCTION

The development of the digital era has brought significant changes to the practice of Human Resource Management (HRM) in various organizations and companies in Indonesia. Digital transformation is driving organizations to not only adapt to technological aspects, but also change workforce management strategies to be more flexible, innovative, and responsive to dynamic business changes. Changes in digital-based work patterns, the use of hybrid work systems, and the application of technology in the HR management process are both challenges and opportunities for modern organizations. Wahyudi et al. (2023) explained that digital transformation has changed the paradigm of human resource management from a conventional administrative system to technology-based management and digital competencies. This condition causes organizations to need a workforce that has workforce agility to be able to survive and compete in an ever-changing business environment.

In the Indonesian context, the acceleration of digital transformation after the pandemic has also accelerated the implementation of technology in organizational activities, including in human resource management. Many companies are starting to implement digital human resource management, flexible working systems, and digital collaboration platforms to improve work efficiency. However, the implementation of the system still faces various obstacles such as low digital literacy of the workforce, resistance to organizational change, and limited adaptive competencies of employees. Sudiantini et al. (2023) stated that the use of technology in HRM in the digital era has not been fully balanced with the readiness of human resources that are adaptive to modern work changes. This situation shows that the success of an organization's digital transformation is greatly influenced by the company's ability to build workforce agility through proper HR practices.

Conceptually, workforce agility describes the ability of the workforce to adapt quickly to changing work environments through flexibility, collaboration, continuous learning, and the ability to solve problems in a responsive manner. From a modern management perspective, workforce agility is one of the important factors in maintaining organizational sustainability amid digital business uncertainty. Nurimansjah (2023) explained that modern organizations require an HRM approach that is not only oriented towards work efficiency, but also on the sustainable development of employee adaptability and innovation. Therefore, the transformation of HR practices is seen as an important strategy to strengthen the organization's ability to deal with technological changes and global market dynamics.

Several previous studies have shown that digital-based HRM practices have an influence on improving the adaptability of the workforce. Azmy's research (2021) found that talent management and employee engagement contribute to increasing workforce agility in the public transportation sector. Another study by Lestamega (2025) shows that agile HR practices and organizational trust have a significant effect on the formation of workforce agility in manufacturing companies in Indonesia. In addition, Farida (2025) explained that digital-based HR transformation is able to increase organizational

effectiveness through the development of digital competencies and flexible work systems. These findings show that the transformation of HRM practices is closely related to improving the ability of the workforce in the face of changes in the digital work environment.

However, previous research still shows that there is a research gap in the study of HRM transformation and workforce agility. Most previous research has focused more on the influence of HRM digitalization on organizational performance or work productivity, while research that specifically addresses workforce agility as the main impact of HRM transformation is still relatively limited. In addition, previous research generally emphasized aspects of digital technology without integrating the adaptive behavior factors of the workforce in depth. Hastuti et al. (2025) stated that workforce agility is not only influenced by the use of technology, but also by employee engagement, flexible work culture, and organizational readiness to support digital work changes. Thus, research is needed that is able to explain the relationship between the transformation of HRM practices and workforce agility more comprehensively in the context of organizations in Indonesia.

Another research gap can be seen in the lack of empirical studies that link the development of digital competencies, flexible work systems, and technology-based performance management to workforce agility simultaneously. Many studies have examined only one aspect of digital transformation in HRM without looking at the linkages between practices in an integrated manner. In fact, changes in the digital business environment require organizations to develop adaptive and sustainable HRM systems. Wahyudi et al. (2023) emphasized that modern organizations need an HRM strategy that is able to encourage work flexibility, innovation, and workforce readiness to face rapid technological changes. Therefore, this research is important to provide a deeper understanding of effective HRM practices in strengthening workforce agility in the digital business era.

Based on this description, this study aims to analyze the influence of the transformation of Human Resource Management practices on strengthening workforce agility in the digital business era. The research focuses on adaptive HRM practices which include the development of digital competencies, flexible work systems, and technology-based performance management in improving adaptability, responsiveness, and workforce collaboration. This research also aims to provide an empirical overview of relevant HR management strategies in supporting organizations to face the dynamics of digital business change in a sustainable manner.

This research is expected to make a theoretical contribution to the development of modern Human Resource Management studies, especially regarding the relationship between digital transformation of human resources and workforce agility in the context of organizations in Indonesia. In addition, this research also provides practical contributions for companies and HR managers in designing workforce management strategies that are more flexible, adaptive, and technology-based. The results of the research are expected to be a reference for organizations in increasing workforce readiness to face digital

business changes while strengthening organizational competitiveness in a sustainable manner.

LITERATURE REVIEW

Digital Transformation in Human Resource Management

Digital transformation has shifted the paradigm of human resource management from traditional administrative systems to technology- and data-based management. This change is marked by the increasing use of Human Resource Information System (HRIS), artificial intelligence, digital recruitment, virtual training, and cloud-based work systems in various modern organizations. According to Farida (2025), digital transformation in HRM not only aims to improve organizational operational efficiency, but also strengthens the adaptability of the workforce to changes in the digital business environment. In the context of modern organizations, the transformation of HR is seen as an important strategy in creating a more flexible, responsive, and innovative work system. Research by Sudiantini et al. (2023) also explains that the use of digital technology in HRM is able to increase the effectiveness of workforce management through automation of work processes, strengthening organizational communication, and accelerating data-driven decision-making.

Theoretically, HRM's digital transformation is closely related to Dynamic Capability Theory, which emphasizes the ability of organizations to adapt internal resources to changes in the external environment quickly and sustainably. This theory explains that organizations that are able to integrate digital technology in human resource management will have a better competitive advantage than organizations that still use conventional approaches. Zhang and Chen (2023) stated that digital HRM is an important foundation in improving organizational agility through the development of digital competencies and strengthening the culture of innovation in organizations. In addition, Bondarouk and Brewster (2022) explain that the digitalization of HRM allows organizations to build work systems that are more collaborative, flexible, and adaptive to global market changes. The findings show that the digital transformation of HRM is an important part of supporting organizational sustainability in the digital business era.

The Concept of Workforce Agility in the Digital Business Era

Workforce agility is the ability of the workforce to respond quickly, flexibly, and effectively in a dynamic work environment. This concept is growing as business uncertainty increases due to the development of digital technology, globalization, and changes in modern work patterns. Workforce agility includes adaptability, collaboration, continuous learning, creativity, and responsiveness. Alviani (2024) explained that workforce agility is one of the strategic factors in supporting organizational resilience and business sustainability in the digital transformation era. In modern organizations, an agile workforce is considered better able to face technological changes and evolving market demands.

Recent research shows that workforce agility is influenced by a variety of organizational factors, including transformational leadership, organizational culture, digital competencies, and adaptive HR practices. Satriawan (2025) found that digital literacy and transformational leadership have a significant influence

on employee agility in the digital sector in Indonesia. The research shows that a workforce with good digital competencies tends to be more adaptable to changes in technology-based work systems. In addition, Hastuti et al. (2025) stated that workforce agility is also influenced by employee engagement and organizational trust in the digital work environment. This shows that workforce agility is not only related to individual technical abilities, but is also influenced by psychological and organizational cultural factors that support work flexibility.

Adaptive HRM Practices and Digital Competency Development

The changing digital business environment requires organizations to implement HRM practices that are more adaptive and oriented towards the development of workforce digital competencies. Adaptive HRM practices include flexible working arrangements, digital training, talent management, technology-based performance management, and the development of innovative work cultures. According to Mattajang (2023), modern organizations need HRM practices that are able to encourage organizational agility through a flexible work system and strengthening the adaptability of the workforce. In the context of digital business, the development of digital competencies is an important factor in increasing work effectiveness and workforce readiness to face rapid technological changes.

Research by Yusuf et al. (2023) shows that the application of digital HRM and digital innovation has a positive effect on improving organizational performance through strengthening the adaptability of the workforce. Meanwhile, Novitaloka (2025) explained that the digital transformation of HRM contributes to increasing organizational agility through the integration of digital technology and the development of human resource competencies in a sustainable manner. The study shows that companies that are able to develop technology-based HRM systems tend to have a more flexible workforce and are responsive to business changes. Thus, the development of digital competencies is an important part of the organization's strategy to strengthen workforce agility in the digital business era.

The Relationship between HRM Transformation and Workforce Agility

The relationship between the transformation of HRM practices and workforce agility is one of the important issues in modern management studies. Digital-based HR transformation is believed to be able to improve the organization's ability to create an adaptive and innovative workforce. Research by Kim and Park (2021) shows that digital HRM practices have a positive influence on workforce adaptability through improving technology competencies and collaborative learning. In addition, research by Rahman et al. (2025) states that digital-based organizational culture helps strengthen workforce agility through increasing collaboration skills and continuous learning in the workforce.

However, several studies show that the implementation of digital transformation of HRM still faces various challenges, such as resistance to organizational change, limited digital literacy, and weak readiness for adaptive work culture. Khaeruman et al. (2025) explained that the success of HRM transformation is greatly influenced by the organization's readiness to build a work culture that supports sustainable digital innovation and learning. In

addition, Musaigwa and Swanepoel (2025) emphasized that the relationship between digital transformation and workforce agility is complex because it is influenced by intangible resources, organizational culture, and leadership dynamics. Therefore, a more strategic and integrated approach to HRM is needed so that organizations are able to build workforce agility optimally in the digital business era.

Research Gap and Conceptual Framework Development

Although various studies have discussed the digital transformation of HRM and workforce agility, there are still research gaps that need to be studied further. Most previous studies have focused more on the influence of HRM digitalization on organizational performance or employee productivity, while studies that specifically link adaptive HRM practices with workforce agility are still relatively limited. In addition, previous research has tended to address technological aspects partially without simultaneously integrating digital competency factors, flexible work systems, and organizational culture. Alviani (2024) stated that research on workforce agility still requires the development of a more comprehensive conceptual model, especially in the context of digital business transformation and modern human resource management.

Based on these conditions, this study develops a conceptual framework that places the transformation of HRM practices as a strategic factor in strengthening workforce agility through the development of digital competencies, flexible work systems, and technology-based performance management. This approach is expected to be able to make a new contribution to the development of modern HRM studies, especially in understanding the relationship between organizational digital transformation and the adaptability of the workforce in the digital business era.

Hypothesis Development

The transformation of digital-based Human Resource Management (HRM) practices has an important role in increasing workforce agility in the digital business era. Adaptive HR practices, such as digital competency development, flexible work systems, and technology-based performance management, are believed to be able to improve the ability of the workforce to adapt to changes in the dynamic work environment. Kim and Park (2021) explain that digital HRM practices have a positive effect on workforce adaptability through improving technological competence and collaborative learning. In addition, Yusuf et al. (2023) stated that the implementation of digital HRM is able to increase organizational agility and workforce performance through the integration of digital technology in organizational work processes.

The development of digital competencies is an important factor in supporting workforce agility because a workforce that has digital capabilities tends to adapt more quickly to changes in technology and modern work systems. Satriawan (2025) found that digital literacy has a significant effect on employee agility in the digital sector in Indonesia. In addition, the implementation of a flexible work system is also considered to be able to increase work effectiveness and the adaptability of the workforce to organizational changes (Mattajang, 2023). Research by Hastuti et al. (2025) also explains that a flexible work environment can increase workforce agility in the digital generation of workers.

HR transformation also includes the implementation of technology-based performance management that helps organizations improve work efficiency, evaluation transparency, and real-time workforce competency development. Farida (2025) stated that the use of digital technology in HRM is able to strengthen the organization's ability to face digital business changes. Based on the description of the theory and previous research, this study develops the following hypotheses:

H1: The transformation of Human Resource Management practices has a positive effect on workforce agility.

H2: The development of digital competencies has a positive effect on workforce agility.

H3: Flexible work systems have a positive effect on workforce agility.

H4: Technology-based performance management has a positive effect on workforce agility.

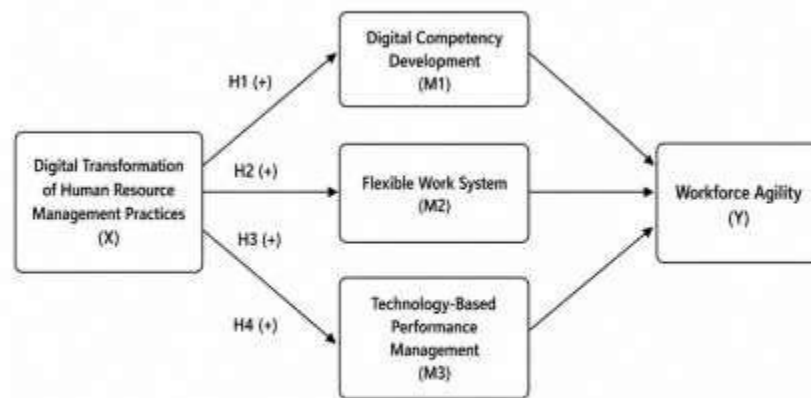


Figure 1. Conceptual Framework

METHODOLOGY

Types of Research

This study uses a quantitative approach with an explanatory design to analyze the influence of transformation of Human Resource Management (HRM) practices on workforce agility in digital-based companies in Indonesia. This approach was chosen because the research focuses on empirically testing the relationships between variables through numerical data and statistical analysis. Data collection was carried out using a survey method with a cross-sectional approach. According to Creswell and Creswell (2021), explanatory quantitative research is effectively used to explain causal relationships between variables in modern organizational and management research.

Population and Sample

The research population consists of employees at digital-based companies in Indonesia who have implemented a digital work system. The sampling

technique uses non-probability sampling with a purposive sampling method based on the following criteria: (1) active employees; (2) have at least one year of work experience; and (3) using a digital technology-based work system. The sample size of 120 respondents was considered adequate for PLS-SEM analysis (Hair et al., 2022). The sample selection was carried out to obtain data relevant to the implementation of digital MSDM practices and workforce agility in modern organizations.

Research Instruments

The research instrument used a structured questionnaire with a five-point Likert scale. The research variables include the transformation of HR practices, digital competency development, flexible work systems, technology-based performance management, and workforce agility. The question items were adapted from the research of Kim and Park (2021), Yusuf et al. (2023), and Alviani (2024), then adjusted to the context of digital companies in Indonesia. The validity test was conducted through convergent validity and discriminant validity using outer loading and Average Variance Extracted (AVE) values, while reliability was measured using Cronbach's Alpha and Composite Reliability with a minimum value of 0.70 (Hair et al., 2022).

Data Collection Procedure

The research is carried out through several stages, namely problem identification, preparation of conceptual frameworks and hypotheses, development of research instruments, dissemination of questionnaires, data collection, and processing and interpretation of research results. The data was collected online using Google Forms for two months. All respondents were given an explanation of the purpose of the research and guaranteed the confidentiality of their identities to maintain academic research ethics.

Data Analysis Techniques

The data analysis technique used Partial Least Squares Structural Equation Modeling (PLS-SEM) with the help of SmartPLS software version 4. The analysis was carried out through the evaluation of the outer model and the inner model. The outer model is used to test the validity and reliability of the construct, while the inner model is used to test the relationship between variables through path coefficient, t-statistics, p-values, and determination coefficient (R^2) values. According to Hair et al. (2022), PLS-SEM is suitable for predictive research and complex models in the field of digital management and business.

RESULT

Respondent Characteristics

This study involved 120 respondents from digital-based companies in Indonesia. Based on the results of the distribution of respondent data, the majority of respondents were in the age range of 24-35 years as many as 70 respondents (58.3%), followed by 36-45 years old as many as 22 respondents (18.3%), 21 respondents aged 20-23 years (17.5%), and over 45 years old as many as 7 respondents (5.9%). Based on gender, male respondents totaled 67 people (55.8%), while women were 53 people (44.2%). In terms of work experience, most of the respondents had a working period of 1-5 years, 74 respondents (61.7%),

which shows that the majority of respondents have experience in using digital-based work systems in modern organizations.

Table 1. Respondent Characteristics

Features	Category	Frequency	Percentage (%)
Age	20-23 Years	21	17,5
	24-35 Years	70	58,3
	36-45 years old	22	18,3
	>45 Years	7	5,9
Gender	Male	67	55,8
	Women	53	44,2
Tenure	1-5 Years	74	61,7
	6-10 Years	31	25,8
	>10 Years	15	12,5

Measurement Model Test Results (Outer Model)

External model testing was carried out to evaluate the validity and reliability of the research construct. The test results showed that all variable indicators had an outer loading value above 0.70, thus meeting the convergent validity criteria. In addition, the Average Variance Extracted (AVE) value in all constructs is above 0.50 which shows that each variable is able to explain the variance of the indicator well.

The results of the reliability test showed that all variables had Cronbach's Alpha and Composite Reliability values above 0.70. Thus, the entire research construct is declared reliable and feasible for use in structural model testing. These results show that the research instrument has a good level of consistency and accuracy in measuring the variables of HRM practice transformation and workforce agility.

Table 2. Validity and Reliability Test Results

Variabel	Outer Loading	AVE	Cronbach's Alpha	Composite Reliability	Remarks
Transforming HRM Practices	0.721-0.884	0.648	0.892	0.917	Valid & Reliabel
Digital Competency Development	0.734-0.901	0.672	0.901	0.926	Valid & Reliabel
Flexible Work System	0.710-0.873	0.635	0.874	0.908	Valid & Reliabel
Technology-Based Performance Management	0.728-0.889	0.661	0.887	0.914	Valid & Reliabel
Workforce Agility	0.742-0.912	0.689	0.913	0.934	Valid & Reliabel

Results of Structural Model Evaluation (Inner Model)

The internal evaluation of the model was carried out to test the strength of the relationship between variables and the model's ability to explain dependent variables. The test results showed that the determination coefficient (R^2) value of workforce agility was 0.710. The score shows that 71% of workforce agility variability can be explained by HR practice transformation, digital competency development, flexible work systems, and technology-based performance management. Meanwhile, 29% were influenced by other variables outside the research model.

An R^2 value of 0.710 indicates that the research model has a strong level of prediction in explaining the relationship between variables in the context of a digital-based organization. Thus, the structural model built in this study is considered to be able to explain the influence of adaptive HRM practices on improving workforce agility empirically.

Table 3. Structural Model Evaluation Results

Variable endogenous	R^2	Adjusted R^2	Category
Workforce Agility	0.710	0.702	Strong

Hypothesis Testing Results

Hypothesis testing was carried out using bootstrapping analysis on SmartPLS 4 by looking at the path coefficient values, t-statistics, and p-values. The test results showed that all research hypotheses were accepted because they had a t-statistical value of > 1.96 and p-values < 0.05 .

The transformation of HRM practices has a positive and significant effect on workforce agility with a path coefficient value of 0.482 and t-statistics of 6.214. These results show that the better the implementation of digital-based adaptive HRM practices, the higher the level of workforce agility in the organization.

Digital competency development has the most dominant influence on workforce agility with a path coefficient value of 0.536 and t-statistics of 7.108. These findings show that the digital capabilities of the workforce are a major factor in improving adaptability, responsiveness, and work collaboration in a digital business environment.

The flexible work system also showed a positive and significant influence on workforce agility with a path coefficient value of 0.391 and t-statistics of 5.276. This indicates that work flexibility is able to increase work effectiveness and the ability of the workforce to adapt to changes in the modern work system.

In addition, technology-based performance management has a positive effect on workforce agility with a path coefficient value of 0.417 and t-statistics of 5.884. These results show that the use of digital technology in employee performance evaluation and development is able to increase work efficiency and workforce readiness in the face of digital business changes.

Table 4. Hypothesis Testing Results

Hipotesis	Variable Relationships	Path Coefficient	T-Statistics	P-Values	Verdict
H1	Transforming HR Practices → Workforce Agility	0.482	6.214	0.000	Accepted
H2	Digital Competency Development → Workforce Agility	0.536	7.108	0.000	Accepted
H3	Flexible Work System → Workforce Agility	0.391	5.276	0.000	Accepted
H4	Technology-Based Performance Management → Workforce Agility	0.417	5.884	0.000	Accepted

Key Research Findings

The results of the study show that the transformation of digital-based Human Resource Management practices plays an important role in strengthening workforce agility in digital-based companies in Indonesia. Adaptive HRM practices that include digital competency development, flexible work systems, and technology-based performance management have been proven to improve the ability of the workforce to adapt to changes in the dynamic work environment.

This study found that the development of digital competencies is the most dominant factor in shaping workforce agility. The findings show that a workforce with good digital skills tends to be more responsive, flexible, and collaborative in dealing with changes in the digital work system. In addition, flexible work systems and the use of digital technology in performance management also contribute significantly to increasing the effectiveness and adaptability of the modern workforce.

The results of this study also show a difference with some previous studies that emphasized organizational culture and leadership as the main factors of workforce agility. In this study, digital competence is actually the most dominant factor in supporting workforce agility in digital-based companies in Indonesia. The findings indicate that the technological readiness and digital capabilities of the workforce have a strategic role in creating an agile and competitive organization in the digital business era.

DISCUSSION

The results of the study show that the transformation of digital-based Human Resource Management (HRM) practices has a positive and significant effect on workforce agility. These findings show that organizations that integrate digital technology in HR management tend to have a workforce that is more adaptive,

responsive, and able to collaborate in dealing with changes in the business environment. An R^2 value of 0.710 indicates that 71% of workforce agility variations can be explained by HR practice transformation, digital competency development, flexible work systems, and technology-based performance management. Theoretically, this result is in line with the concept of dynamic capability, which is the ability of organizations to manage and reconfigure internal resources to be able to respond quickly to external changes. In the context of this research, digital human resources is a strategic mechanism to form a more agile workforce in the face of the digital business era.

The finding that the transformation of HR practices has a significant effect on workforce agility supports the research of Mattajang (2023), who states that adaptive HRM practices are needed to build organizational agility in the face of rapid changes in the digital era. These results are also in line with the study of Bindra et al. (2025), who explained that HRM digitalization has become an important part of organizational transformation because it is able to increase the competitiveness and effectiveness of workforce management. Thus, HR transformation cannot be understood simply as the use of digital applications or systems, but as an overarching change in the way organizations develop competencies, organize work flexibility, and evaluate employee performance on a data-driven basis.

The development of digital competencies is the most dominant factor in increasing workforce agility. The path coefficient value of 0.536 shows that employees' digital skills have the strongest contribution compared to other variables. These findings mean that in digital-based companies, a workforce that has technology literacy, the ability to use digital platforms, and is ready to learn new systems will be more quickly adapting to job changes. This supports the research of Satriawan (2025), who found that digital literacy plays an important role in shaping employee agility in the digital sector in Indonesia. These findings are also consistent with the research of Djaenudin (2025), which places technology adoption and learning orientation as important factors in the formation of workforce agility in public sector organizations.

Flexible work systems have also been proven to have a positive and significant effect on workforce agility. These findings show that work flexibility, such as hybrid working, remote working, and the use of digital collaboration platforms, can improve employees' ability to adapt to changing work patterns. Conceptually, work flexibility provides space for employees to manage time, work methods, and communication more dynamically. Consequently, organizations that implement flexible work systems have a greater chance of forming a responsive and adaptive workforce. These results are in line with the view that flexible work arrangements and digital tools integration are an important part of HRM adjustment in the digital work landscape.

Technology-based performance management also shows a positive influence on workforce agility. This indicates that the use of digital evaluation systems, performance dashboards, data-driven work targets, and real-time feedback can help employees understand work outcomes and development areas more quickly. In practical terms, this system allows organizations to conduct more objective and

responsive performance monitoring. These findings support the research of Novitaloka (2025), which explains that digital HRM transformation through cloud-based platforms, automation, and e-learning can strengthen organizational agility and effectiveness. Thus, technology-based performance management is not only an evaluation tool, but also a means of continuous learning and development for employees.

When compared to previous studies, there are important differences in the findings of this study. Several previous studies have emphasized organizational culture, leadership, and employee engagement as the dominant factors in shaping workforce agility. However, this study found that the development of digital competencies is the most powerful factor. This difference can be explained through the context of research, namely digital-based companies in Indonesia, where job demands are highly dependent on employees' ability to use technology, access digital information, and adapt to platform-based work systems. In other words, in the digital sector, technology competencies are the main prerequisites before cultural, leadership, or employee engagement factors can work optimally.

The findings of this study make a theoretical contribution to the development of modern HRM studies, especially by strengthening the understanding that workforce agility can be formed through the integration of digital-based adaptive HRM practices. This research also expands the application of dynamic capability theory in the context of HR management, because it shows that the ability of organizations to build an agile workforce is greatly influenced by the way organizations develop digital competencies, work flexibility, and technology-based performance management systems. Practically, the results of this study provide implications for HR managers to not only focus on administrative digitalization, but also on human capacity development strategies that are able to support organizational adaptation in a sustainable manner.

However, this study has some limitations. First, the data was obtained through a cross-sectional survey so that it only describes the condition of respondents in a specific period and has not been able to explain changes in workforce agility in the long term. Second, the number of respondents of 120 employees is still limited to digital-based companies, so generalization of results to other sectors needs to be done carefully. Third, this study has not included other variables such as digital leadership, organizational culture, employee engagement, and psychological safety that have the potential to strengthen or mediate the relationship between HRM transformation and workforce agility.

Based on these limitations, further research is recommended using longitudinal design to look at changes in workforce agility over time after the implementation of digital HRM practices. Future research can also expand objects to non-digital sectors, such as manufacturing, education, health, or the public sector to make the results more comprehensive. In addition, mediation or moderation variables such as digital readiness, organizational culture, employee engagement, and transformational leadership can be included to enrich the research model. Thus, further research can provide a deeper understanding of the mechanisms of forming workforce agility in various organizational contexts.

CONCLUSION AND RECOMMENDATION

Based on the results of the research, it can be concluded that the transformation of digital-based Human Resource Management (HRM) practices has a positive and significant effect on increasing workforce agility in digital-based companies in Indonesia. Adaptive HRM practices, which include the development of digital competencies, flexible work systems, and technology-based performance management, have been proven to be able to increase adaptability, responsiveness, and workforce collaboration in the face of changes in the dynamic digital business environment. The development of digital competencies is the most dominant factor in shaping workforce agility, which shows that technological capabilities and digital readiness of the workforce are strategic elements in creating an agile and competitive organization. The findings of this study strengthen the concept of dynamic capability theory that organizations that are able to integrate technology and human resource management adaptively will have better abilities to deal with changes in the business environment. In addition to making a theoretical contribution to the development of modern HRM studies, this research also provides practical implications for organizations in designing technology-based workforce management strategies more effectively and sustainably.

Based on the findings of the research, organizations are advised to increase investment in the development of employees' digital competencies through technology-based training, digital learning, and digital literacy improvement programs on an ongoing basis. In addition, companies need to develop flexible work systems and technology-based performance management that are able to support collaboration, work effectiveness, and workforce adaptation to digital business changes. Further research is suggested to expand the scope of respondents in various industry sectors so that the research results have a broader level of generalization. Future research can also add other variables such as digital leadership, organizational culture, employee engagement, and psychological safety to gain a more comprehensive understanding of the factors that affect workforce agility in the era of digital transformation.

SUGGESTION

For further research, it is recommended to expand the scope of the research by involving a larger number of respondents and various industry sectors so that the results of the study have a wider level of generalization. Future research can also add other variables such as digital leadership, organizational culture, employee engagement, innovation capability, and psychological safety to build a more comprehensive research model. In addition, the use of a longitudinal approach is suggested in order to observe the influence of digital MSDM transformation on workforce agility in the long term and organizational sustainability in the era of digital transformation that continues to grow.

REFERENCES

- Alviani, D. (2024). Workforce agility: A systematic literature review and research agenda. *Frontiers in Psychology*, 15, Article 1376399. <https://doi.org/10.3389/fpsyg.2024.1376399>
- Azmy, A. (2021). The effect of employee engagement and job satisfaction on workforce agility through talent management in public transportation companies. *Media Ekonomi dan Manajemen*, 36(2), 212–224. <https://doi.org/10.24856/mem.v36i2.2190>
- Bindra, S., Parameswar, N., & Dhir, S. (2025). Traditional to digital: Human resource management transformation in the digital era. *Journal of Work-Applied Management*. <https://doi.org/10.1108/JWAM-02-2025-0019>
- Bondarouk, T., & Brewster, C. (2022). Human resource management in the digital age: Evidence and implications. *The International Journal of Human Resource Management*, 33(5), 923–944. <https://doi.org/10.1080/09585192.2021.1879208>
- Creswell, J. W., & Creswell, J. D. (2021). *Research design: Qualitative, quantitative, and mixed methods approaches* (6th ed.). SAGE Publications. <https://us.sagepub.com/en-us/nam/research-design/book270550>
- Djaenudin, A. (2025). Enhancing workforce agility for digital transformation in public sector organizations: A systematic literature review. *International Student Conference on Business, Education, Economics, Accounting, and Management*. <https://journal.unj.ac.id/unj/index.php/isc-beam/article/view/61607>
- Farida, F. (2025). HRM in digital transformation: Challenges and opportunities in the digital era. *Jurnal Ilmiah Manajemen Kesatuan*, 13(1), 55–68. <https://jurnal.ibik.ac.id/index.php/jimkes/article/view/4104>
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). *A primer on partial least squares structural equation modeling (PLS-SEM)* (3rd ed.). SAGE Publications. <https://us.sagepub.com/en-us/nam/a-primer-on-partial-least-squares-structural-equation-modeling-pls-sem/book270680>
- Hastuti, E. S., Puspita, M., & Ramdani, A. D. (2025). Pengaruh workforce agility terhadap retensi yang dimediasi employee engagement pada karyawan Gen Z di era digital. *JIPSI: Jurnal Ilmiah Psikologi*, 7(2), 164–174. <https://doi.org/10.37278/jipsi.v7i2.1396>
- Khaeruman, K., Dewi, I. N., & Ahmed, A. (2025). Implementation of human resource management strategies in the digital transformation era. *International Journal of Management Research and Applied Learning*, 5(1), 22–35. <https://ijomral.esc-id.org/index.php/home/article/view/378>
- Kim, J., & Park, S. (2021). Digital HRM practices and workforce adaptability in the post-pandemic workplace. *Sustainability*, 13(21), Article 12187. <https://doi.org/10.3390/su132112187>
- Lestamega, A. (2025). Membangun workforce agility melalui agile HR practices dan organizational trust pada perusahaan manufaktur Indonesia. *Agility:*

- Jurnal Manajemen dan Bisnis, 4(1), 44–58.
<https://jurnal.lenteranusa.id/index.php/agility/article/view/1162>
- Mattajang, R. (2023). HR practices for facing rapid change in the digital era. *Info Sains: Informatika dan Sains*, 13(2), 120–130.
<https://ejournal.seaninstitute.or.id/index.php/InfoSains/article/view/3475>
- Musaigwa, M., & Swanepoel, J. A. (2025). Analyzing the interplay between digital transformation, workforce agility, and intangible resources: A systematic literature review. *International Journal of Applied Research in Business and Management*, 6(1), 1–19.
<https://doi.org/10.51137/wrp.ijarbm.2025.mmat.45745>
- Novitaloka, O. S. (2025). Digital HRM transformation and its impact on agility and organizational performance. *ICETEA Conference Proceedings*, 45–58.
<https://conference.unita.ac.id/index.php/icetea/article/view/391>
- Nurimansjah, R. A. (2023). Dynamics of human resource management: Integrating technology, sustainability, and adaptability in the modern organizational landscape. *Golden Ratio of Mapping Idea and Literature Format*, 3(2), 120–139. <https://doi.org/10.52970/grmilf.v3i2.324>
- Rahman, F., Hidayat, T., & Kusuma, D. (2025). Workforce agility and digital organizational culture in the era of business transformation. *International Journal of Management Studies*, 12(1), 45–60.
<https://doi.org/10.5539/ijms.v12n1p45>
- Satriawan, B. (2025). Examining the impact of vitality, digital literacy, and transformational leadership on millennial job performance: The mediating role of employee agility in Indonesia's digital sector. *Benefit: Jurnal Manajemen dan Bisnis*, 10(1), 75–90.
<https://journal.umy.ac.id/index.php/bti/article/view/28614>
- Sudiantini, D., Naiwasha, A., Izzati, A., & Rindiani, C. (2023). Penggunaan teknologi pada manajemen sumber daya manusia di dalam era digital sekarang. *Digital Bisnis: Jurnal Publikasi Ilmu Manajemen dan E-Commerce*, 2(2), 262–269.
<https://journal.formosapublisher.org/index.php/ministal/article/view/15962>
- Wahyudi, A., Assyamiri, M. B. T., Al Aluf, W., Fadhillah, M. R., Yolanda, S., & Anshori, M. I. (2023). Dampak transformasi era digital terhadap manajemen sumber daya manusia. *Jurnal Bintang Manajemen*, 1(4), 99–111.
<https://ejurnal.stie-trianandra.ac.id/index.php/jbm/article/view/1234>
- Yusuf, M. A., Satia, H. M. R., Bernardianto, R. B., Nurhasanah, N., Irwani, I., Kurniasih, D., & Setyoko, P. I. (2023). Investigating the effect of digital HRM and digital innovation on SMEs performance in Indonesia. *International Journal of Professional Business Review*, 8(6), 1–14.
<https://doi.org/10.26668/businessreview/2023.v8i6.2212>
- Zhang, J., & Chen, Z. (2023). Exploring human resource management digital transformation in the digital age. *Journal of the Knowledge Economy*.
<https://doi.org/10.1007/s13132-023-01214-y>