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The Effect of Human Resource Management Digitalization on Employee Performance through Work Engagement as a Mediation Variable in the Regional Office of Directorate XYZ

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ABSTRACT

The implementation of Human Resource Management Digitalization in government institutions aims to improve the effectiveness of human resource management. However, its successful implementation depends on employees' ability to adapt to digital systems and their level of work engagement. This study aims to examine the influence of Human Resource Management Digitalization on Employee Performance through Work Engagement as a mediating variable at the Regional Office of the Directorate General of Immigration of East Java. This study employed a quantitative approach using a saturated sampling technique, in which all 35 employees were selected as respondents. Data were collected through questionnaires and analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS) with SmartPLS 4 software. The results indicate that Human Resource Management Digitalization has a positive and significant effect on Work Engagement and Employee Performance. Furthermore, Work Engagement has a positive and significant effect on Employee Performance and significantly mediates the relationship between Human Resource Management Digitalization and Employee Performance. The findings suggest that optimizing digital human resource management, supported by high levels of work engagement, can improve employee performance. The practical implication of this study is that government institutions should optimize the implementation of digital human resource management systems while enhancing employees' work engagement through competency development and organizational support to achieve sustainable improvements in employee performance. The originality of this study lies in examining the mediating role of Work Engagement in the relationship between Human Resource Management Digitalization and Employee Performance within a government institution undergoing digital transformation.

Keywords: Human Resource Management Digitalization, Work Engagement, Employee Performance.

1. INTRODUCTION

The development of digital technology has changed the way organizations manage work processes, including in the field of human resource management. Organizations in various sectors are starting to adopt digital systems to improve the effectiveness, efficiency, transparency, and quality of decision-making. In the Indonesian government, this transformation is realized through the implementation of the Electronic-Based Government System as part of digital bureaucratic reform. The implementation of SPBE is directed to create more effective, efficient, transparent, and accountable governance. In addition, the digitalization of human resource management is also considered to be able to integrate various work processes so as to support the improvement of organizational performance (Zhou et al., 2025a).

The implementation of digitalization also occurred at the Regional Office of the XYZ Directorate which is transforming the personnel system. Before the implementation of the integrated system, personnel activities such as attendance, permit application, and performance assessment were still carried out through several different media, ranging from fingerprints, WhatsApp, to manual processes. Since October 2024, this agency has begun to use the Star ASN application as an integrated system to manage attendance, work activities, and employee performance evaluation so that the administrative process becomes more integrated.

Although the implementation of digital systems is expected to increase efficiency, the implementation process still faces various challenges. The difference in employees' ability to operate the

application causes some work to be done by combining digital and manual procedures. This condition has an impact on the delay in completing tasks and the quality and quantity of work results during the adaptation period. Based on the results of the interviews, this phenomenon shows a decline in employee performance, especially related to the timeliness and effectiveness of work completion, although the magnitude of the decline cannot be quantitatively measured.

Changes in the work system also give rise to dynamics in the division of tasks between employees. When there are employees who are absent or apply for permission, the work must still be completed according to the target so that other colleagues take over some of the responsibility. This situation reflects work engagement in the form of employees' willingness to help each other in order to maintain smooth work. However, an unbalanced distribution of workload also has the potential to increase work pressure so that it can affect concentration and quality of work results.

This phenomenon shows that the success of digital transformation is not only influenced by technological readiness, but also by the organization's ability to manage human resources. The concept of Human Resource Management Digitalization emphasizes the use of digital technology to support all human resource management functions. Digitalization is able to increase efficiency through process automation and the use of data in decision-making (Zhou et al., 2025b), but its success still depends on employee readiness to face changes in the work system (Trenerry et al., 2021).

In the context of an organization, employee performance is an important indicator to assess the success of achieving organizational goals. Employee performance is influenced by individual abilities, motivation, and the work system applied (Robbins & Judge, 2017). In the digital era, the ability to adapt to technology is a factor that also determines the quality of performance. This performance can be seen through the quality of work, quantity of work results, productivity, punctuality, and effectiveness of task completion (Kuswati, 2020).

In addition to digitalization, work engagement also has an important role in improving employee performance. Work engagement describes a positive psychological state characterized by an individual's passion, dedication, and involvement in his or her work (Schaufeli et al., 2002). A high level of work involvement encourages employees to be more adaptive to change, have better motivation, and produce more optimal performance (Bakker, 2011).

Although studies on Human Resource Management Digitalization have developed, most research is still conducted in the private sector, so empirical evidence on public organizations is still limited. Previous research has also shown mixed results. Digitalization has been proven to be able to increase organizational efficiency and performance, but on the other hand, it can cause adaptation difficulties, work stress, and operational obstacles if the readiness of human resources is inadequate (Fedorova et al., 2019). In addition, there are still relatively few studies that examine the role of work engagement as a mediating variable between Human Resource Management Digitalization and employee performance, especially in government agencies undergoing digital transformation.

Based on these conditions, this study aims to examine the influence of Human Resource Management Digitalization on employee performance through work engagement as a mediating variable in the Regional Office of the Directorate XYZ. This research is expected to provide empirical evidence on the importance of work involvement in supporting the success of digital transformation while improving employee performance in the government bureaucratic environment.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Human Resource Management Digitalization

Human Resource Management Digitalization is a process of transforming human resource management through the use of digital technology to improve the effectiveness, efficiency, and quality of HR services. This digitalization includes the use of HR applications, HR information systems (HRIS), automation of administrative processes, data integration, and the use of analytics to support decision-making. Its implementation not only accelerates administrative activities such as attendance, payroll, recruitment, performance appraisal, and leave applications, but also improves transparency, ease of access to services, and the quality of interaction between organizations and employees. In addition, HR digitalization is a development of the concept of electronic human resource management (E-HRM) which emphasizes the change in HR functions towards a more integrated, data-based, and supportive system for the company's strategic decisions (Stachová et al., 2024).

Human Resource Management Digitalization plays an important role in improving the operational effectiveness of organizations through accelerating administrative processes, improving data accuracy, and reducing manual work. The use of digital technology allows HR services to be faster, more transparent, and more accessible, thus supporting organizational productivity. In addition, digital systems are able to improve work motivation and employee performance through the provision of real-time information, faster feedback, and more structured work processes. Digitalization also strengthens efficiency through the implementation of digital workflows, improves the quality of communication between HR and employees, and supports HR analytics-based decision-making, so that organizations become more adaptive to changes in the business environment (Strohmeier, 2020).

The Human Resource Management Digitalization indicator reflects the extent to which organizations adopt digital technology in HR management. Stachová et al. (2024) put forward four main indicators, namely the use of digital HR tools, HR process automation, employee digital competence development, and digital communication and collaboration. Meanwhile, Al-Kharabsheh et al. (2023) added indicators in the form of digital service delivery, digital information management, digital performance appraisal, and digital workflow efficiency which focus on service quality, information management, performance evaluation, and digital-based workflow efficiency. Strohmeier (2020) groups HR digitalization indicators into three main aspects, namely digitization of HR administration,

digitization of employee competency development, and digitization of performance evaluation. Overall, these indicators show that HR digitalization is not only related to the use of technology, but also to improving the effectiveness of services, competencies, and the quality of organizational decision-making (Stachová et al., 2024).

2.2 Work Engagement

Work engagement is a positive psychological condition that shows a high level of individual involvement in work through energy, enthusiasm, commitment, and strong concentration. This concept consists of three main dimensions, namely vigor, which describes enthusiasm and mental endurance at work; dedication, which reflects a sense of pride, enthusiasm, and meaning towards the work; and absorption, which shows full involvement so that individuals are very focused on carrying out their duties. The level of work involvement is influenced by the availability of job resources, such as organizational support, a conducive work environment, and an adequate work system. Therefore, the digitization of HR management can serve as an organizational resource that increases work engagement and ultimately impacts the improvement of employee performance (Schaufeli & Bakker, 2004).

Work engagement has a strategic role in improving employee motivation, work quality, and productivity. Individuals who have a high level of involvement tend to show great energy, strong responsibility, and commitment to getting their work done. These conditions contribute to increasing organizational effectiveness through better quality of work results, timely completion of tasks, and increased creativity, discipline, and a sense of responsibility. Thus, work engagement is an important factor that supports improving employee performance as well as the success of the organization in achieving the goals that have been set (Burlian, 2024).

Work engagement is generally measured through three main dimensions, namely vigor, dedication, and absorption. Vigor reflects energy, passion, and mental resilience in the face of job demands. Dedication describes pride, inspiration, enthusiasm, and commitment to work, while absorption indicates a level of concentration and full involvement while working so that it is difficult for individuals to detach themselves from their activities (Schaufeli & Bakker, 2004). In addition, Toth et al. (2021) developed work engagement indicators into three forms of engagement, namely cognitive engagement, which is related to attention and focus on work; emotional engagement, which reflects emotional attachment and positive feelings towards the organization; and physical engagement, which shows the willingness of employees to exert their energy and physical abilities optimally in completing their work.

2.3 Employee Performance

Employee performance is the level of success of employees in carrying out tasks and responsibilities in accordance with organizational goals. Performance is not only measured by the results of the work achieved, but also includes quality, quantity, timeliness, effectiveness, and responsibility for completing the work. Performance levels are influenced by various factors, such as individual abilities, motivation, work engagement, work environment, and the management system implemented by the organization. Therefore, employee performance can be understood as a form of real employee contribution that supports the achievement of organizational goals effectively and efficiently (Zafirah & Budiono, 2024).

Employee performance plays an important role in determining the success of the organization because it is directly related to productivity, operational effectiveness, service quality, and the achievement of company targets. High employee performance shows the success of the organization in managing human resources optimally so that it can improve the efficiency of work processes and the competitiveness of the company. Thus, the better the performance shown by employees, the greater their contribution to the success and sustainability of the organization (Burlian, 2024).

Employee performance can be measured through several key indicators, namely work quality, quantity of work, punctuality, work effectiveness, independence, and work commitment. The quality of work indicates the accuracy of the results according to the organization's standards, while the quantity of work describes the amount of work that can be completed. Punctuality is related to the ability to complete tasks on schedule, while work effectiveness refers to the ability to utilize resources optimally. In addition, independence reflects the ability to work without excessive dependence on other parties, while work commitment describes the responsibility, loyalty, and seriousness of employees in achieving organizational goals (Kuswati, 2020).

3. RESEARCH MEHODOLOGY

This study applies a quantitative approach with an explanatory research design to examine the cause-and-effect relationship between Human Resource Management (HRM) Digitalization, Work Engagement, and Employee Performance. The quantitative approach was chosen because it is able to produce statistically analyzed numerical data so that the relationships between variables can be objectively tested according to the research hypothesis (Sugiyono, 2023).

The research was conducted at the Regional Office of Directorate XYZ, which is located on Jalan Kayoon No. 50–52, Surabaya. The location was chosen because it has implemented a digital system in human resource management so that it is in accordance with the research focus on HRM Digitalization. In addition, government agencies in the immigration sector are considered to be able to provide a real picture of the implementation of digital transformation in the public sector. The research took place during the period from October 2025 to January 2026, which included the preparation of instruments, the licensing process, the distribution of questionnaires, data collection, and analysis using the Partial Least Squares-Structural Equation Modeling (PLS-SEM) method.

Population is a whole subject that has certain characteristics according to the research objectives (Sugiyono, 2023). The population of this study consists of 35 employees of the Regional Office of Directorate XYZ from the Administration and General Section, the Field of Travel Documents, Residence Permits and Immigration Status, the Field of Immigration Supervision and Enforcement, and the Field of Intelligence and Internal Compliance. Given the relatively small population, the study used a saturated sampling technique (census), so that all members of the population were used as research respondents (Sugiyono,

2023). Thus, the number of samples is equal to the number of population, which is 35 employees.

This study uses quantitative data, namely numerical data that can be analyzed statistically to test the relationship between variables in the research model (Hair et al., 2022). All data is sourced from primary data obtained directly through the distribution of questionnaires to employees of the Regional Office of Directorate XYZ. The use of primary data was chosen because it was able to provide information that is in accordance with the actual conditions of the organization and describe respondents' perceptions regarding the implementation of HRM digitalization, the level of work attachment, and employee performance.

Data collection was carried out through three methods, namely observation, interviews, and questionnaires. Observations are used to obtain a direct picture of organizational conditions, work activities, and the implementation of digitalization of human resource management (Sugiyono, 2023). Interviews were conducted in a structured and unstructured manner to employees who understood the application of HRM Digitalization in order to obtain more in-depth information about research phenomena (Sugiyono, 2023). Meanwhile, the questionnaire became the main instrument of the study using a five-point Likert scale, ranging from a score of 1 (strongly disagree) to a score of 5 (strongly agree). All statements are compiled based on the indicators of each variable so that the data obtained can be used in testing the research model.

Data analysis was carried out using the Structural Equation Modeling-Partial Least Squares (SEM-PLS) method through the SmartPLS 4 software. This method was chosen because it is suitable for research with relatively small sample sizes and oriented towards the development of predictive models (Hair et al., 2022). The analysis consists of two stages, namely the evaluation of the measurement model (outer model) and the evaluation of the structural model (inner model).

4. RESULTS AND DISCUSSION

4.1 Research Results

This study involved 35 employees of the Regional Office of the Directorate XYZ as respondents. Respondents' characteristics were described based on age, gender, last education, and length of service. The grouping aims to provide an overview of the profile of respondents who are the source of research data so that it can support a more comprehensive interpretation of research results.

Respondents were dominated by 18 employees aged 25–35 years (51%), followed by 13 (37%) aged 36–45 years, while 46–65 years old (11%). These results show that most of the respondents are in the productive age group which generally has better ability to adapt to technological developments. This condition is in line with the needs of organizations that increasingly rely on digital systems in human resource management and the implementation of daily work activities.

Male respondents amounted to 19 people (54%), while female respondents were 16 people (46%). Thus, the composition of respondents is dominated by male employees, although the difference is relatively small. These differences show that the research still obtains representation from both gender groups so that it is able to provide a diverse picture of Human Resource Management Digitalization, Work Engagement, and Employee Performance. The distribution of respondents by gender also shows that the work environment has a fairly balanced composition of employees.

The data in Table 4.3 shows that the majority of respondents have 18 (51%) S1 education, followed by 15 S2 graduates (43%), while only 2 (6%) high school graduates/equivalent and there are no respondents with S3 education. The findings indicate that most employees have a higher education background. This level of education is expected to support employees' ability to understand work, adjust to technological developments, and respond to the implementation of Human Resource Management Digitalization, increase Work Engagement, and support Employee Performance.

A total of 21 respondents (60%) have a working period of 1–10 years, 11 respondents (31%) have worked for 11–20 years, while 3 respondents (9%) have a working period of 21–30 years. These results show that the majority of employees have enough work experience to understand the work process, organizational culture, and various policies implemented by the agency. This experience is also a capital for employees in adapting to digital transformation and providing a more objective assessment of Human Resource Management Digitalization, Work Engagement, and Employee Performance.

Descriptive statistical analysis was carried out on respondents' answers to each questionnaire item using a Likert scale of 1–5. Each statement was analyzed based on the mean value and frequency of answers to describe the respondents' perception of the research variable. The determination of assessment categories refers to the Three Box Method according to Hair et al. (2021). With a score range of 1 to 5 and three assessment categories, an interval of 1.33 was obtained so that the classification of assessments consisted of low (1.00–2.33), medium (2.34–3.67), and high (3.68–5.00) categories.

The variables of Human Resource Management Digitalization are measured through three indicators, namely administrative digitalization, digitization of human resource development, and digitization of performance evaluation. This variable obtained an average value of 4.14, so it is in the high category according to the classification of Hair et al. (2021). This shows that the implementation of digitalization of human resource management in the XYZ Directorate Regional Office has been well implemented.

Judging from each indicator, administrative digitization obtained the highest average score of 4.26, followed by digitization of human resource development of 4.14, while digitization of performance evaluation obtained an average of around 4.10. These findings indicate that the administrative aspect is the form of digitalization that is most benefited by employees compared to other aspects.

At the item level, the highest average value is found at X1.1 (mean 4.314) which states that the digital system makes it easier to access personnel information. These results illustrate that employees feel the real benefits of using technology in obtaining personnel information faster and easier. On the other hand, the lowest average score was found at X3.1 (mean 3.971) regarding the understanding of work targets through a digital-based assessment system. Despite being the lowest score, the score remains in the high category, thus showing that the digital system still plays a positive role in helping employees understand the work goals that must be achieved.

Overall, the results of the analysis show that the implementation of Human Resource Management Digitalization has had a

positive impact on human resource management. Digitalization in the aspects of administration, human resource development, and performance evaluation is considered to be able to increase the effectiveness of work processes while supporting more efficient human resource management in the Regional Office of the XYZ Directorate.

Employee Performance variables are measured through four indicators, namely work quantity, work quality, productivity, and punctuality (Koopmans et al., 2014). Based on the results of the analysis in Table 4.7, an average value (mean) of 4.25 was obtained, which is in the range of 3.68-5.00, thus showing that the performance of employees of the Regional Office of Directorate XYZ is included in the high category. These results indicate that in general, employees are able to complete work according to targets, maintain the quality of work results, increase productivity, and complete tasks on time.

Judging from each indicator, productivity obtained the highest average score of 4.415, which indicates that employees have the ability to produce optimal work output. In contrast, the quantity of work obtained the lowest average of 4,029, although it still falls into the high category. At the item level, the highest score is found at Y3.2 (mean 4,486) with the statement "I try to give the best work in every task". These findings reflect the commitment of employees to provide the best performance in carrying out their responsibilities. Meanwhile, the lowest score was found at Y1.2 (mean 4,029) with the statement "I can meet the workload that is my responsibility". Even though it is the lowest score, the results still show that employees are able to meet the demands of the job given. Overall, these findings show that the level of employee performance is in good condition, in line with the concept of performance that emphasizes the achievement of work results effectively and efficiently.

The Work Engagement variables in this study were measured through three dimensions, namely vigor (work spirit), dedication (dedication), and absorption (focus on work). Based on the results in Table 4.8, an average value (mean) of 4.04 was obtained, which is in the high category because it is included in the interval of 3.68–5.00. These results show that employees of the XYZ Directorate Regional Office have a good level of work engagement, which is reflected in their enthusiasm, dedication, and involvement in carrying out their work.

Based on the average score of each indicator, dedication earned the highest score of 4,114, indicating that employees show enthusiasm, pride, and a strong commitment to their work. On the other hand, the absorption indicator obtained the lowest average of 3.943, but it was still in the high category, indicating that employees were still able to concentrate and engage in work activities. At the item level, the highest scores were obtained by Z1.1 and Z2.1, at 4,114, respectively, which illustrates the high energy and enthusiasm of employees in carrying out their duties. Meanwhile, the lowest value was found at Z3.2 (mean 3,943) with the statement "I feel very engaged in the work I am doing". Nonetheless, the score still reflects a positive level of work engagement. Overall, the results of this study show that employee Work Engagement is in the high category, so employees tend to have strong motivation, dedication, and focus in completing their work in accordance with the concept of work engagement.

Inferential statistical analysis in this study was carried out using Structural Equation Modeling (SEM) based on Partial Least Square (PLS) through the SmartPLS application version 4.1. The PLS method was chosen because it is able to accommodate complex models and does not require normal data distribution.

Table 4. 1 Value of Outer loading before removal

Item	***Outer Loadings***	**Category**
X1.1	*0.764*	Valid
X1.2	*0.628*	Invalid
X2.1	*0.597*	Invalid
X2.2	*0.806*	Valid
X3.1	*0.745*	Valid
X3.2	*0.799*	Valid
Y.4.2	*0.564*	Invalid
Y1.1	*0.681*	Invalid
Y1.2	*0.741*	Valid
Y2.1	*0.757*	Valid
Y2.2	*0.718*	Valid
Y3.1	*0.612*	Invalid
Y3.2	*0.608*	Invalid
Y4.1	*0.833*	Valid
Z1.1	*0.689*	Invalid
Z1.2	*0.575*	Invalid
Z2.1	*0.693*	Invalid
Z2.2	*0.774*	Valid
Z3.1	*0.707*	Valid
Z3.2	*0.706*	Valid

Source: Outner SmartPLS version 4, processed by researchers (2026)

Table 4. 2 Outer loading value after removal

Item	***Outer Loadings***	**Category**
X1.1	0,784	Valid

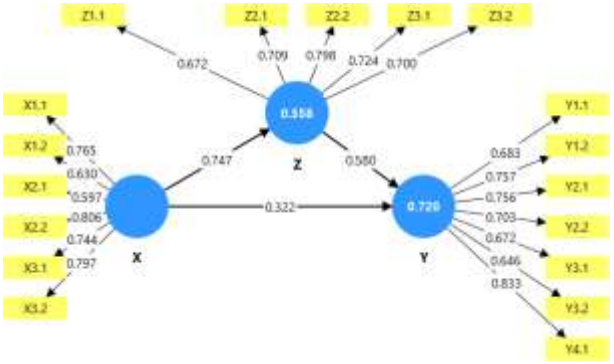
Item	*Outer Loadings*	Category
X1.2	0,700	Valid
X2.1	0,587	Valid
X3.1	0,759	Valid
X3.2	0,810	Valid
Y.4.2	0,561	Valid
Y1.2	0,731	Valid
Y2.1	0,774	Valid
Y2.2	0,697	Valid
Y3.1	0,657	Valid
Y3.2	0,664	Valid
Y4.1	0,835	Valid
Z1.1	0,746	Valid
Z1.2	0,662	Valid
Z2.1	0,735	Valid
Z3.2	0,766	Valid

Source: Outner SmartPLS version 4, processed by researchers (2026)

Model evaluation is carried out in two stages, namely the measurement model (outer model) to test the quality of the research instrument and the structural model (inner model) to test the relationship between variables according to the research hypothesis.

In the evaluation stage of the measurement model (outer model), the convergent validity was analyzed through the outer loading value and Average Variance Extracted (AVE). Indicators are declared to meet convergent validity if they have an outer loading value of at least 0.70, while indicators with values between 0.40–0.70 can still be considered to be maintained based on their contribution to the model. The results of the initial test showed that several indicators still had relatively low loading values, namely X2.1 (0.587), Y4.2 (0.561), Y2.2 (0.697), Y3.1 (0.657), Y3.2 (0.664), and Z1.2 (0.662). In addition, the results of cross loading showed that some indicators were not able to distinguish constructs optimally, so model improvements were needed.

Uji measurement Model:



Source: SmartPLS output version 4, processed by researchers (2026)

Table 4. 3 AVE calculation results

Variabel	*Average VarianceExtracted (AVE)*
Human Resource Management Digitalization (X)	0,536
Work engagement (Z)	0,501
Employee	0,530

Performance (Y)	

Source: SmartPLS output version 4, processed by researchers (2026)

This condition is also reflected in the initial AVE value which has not fully met the minimum limit of 0.50. The AVE value for Human Resource Management Digitalization is 0.529, while Employee Performance and Work Engagement only get values of 0.482 and 0.480, respectively, so the two constructs do not meet the requirements for convergent validity. Therefore, model modifications were made by eliminating indicators that have low loading values and poor discrimination capabilities. After the re-estimation was carried out, the quality of the model improved, as shown by the increase in the AVE score to 0.536 in Human Resource Management Digitalization, 0.501 in Work Engagement, and 0.530 in Employee Performance. The entire construct finally meets the AVE criterion above 0.50 so that the measurement model is declared to have sufficient convergent validity.

Tabel 4. 4 Nilai Heteroit Single Trait Ratio (HTMT)

Item	***Human Resource Management Digitalization* (X)**	***Employee Performance* (Y)**	***Work engagement* (Z)**
Human Resource Management Digitalization (X)			
Employee Performance (Y)	0,850		
Work engagement (Z)	0,856	0,879	

Source: SmartPLS output version 4, processed by researchers (2026)

The results of the discriminant validity test using the Heterotrait-Monotrait Ratio (HTMT) approach showed that all HTMT values were below the limit of 0.90, which was 0.850 between Human Resource Management Digitalization and Employee Performance, 0.856 between Human Resource Management Digitalization and Work Engagement, and 0.879 between Work Engagement and Employee Performance. This value indicates that each construct is able to distinguish itself from other constructs so that the discriminant validity in the model has been met.

Table 4. 5 Internal Consistency Reability Value

Variabel	***Cronbach's alpha***	***Composite reliability***
Human Resource Management Digitalization (X)	0,783	0,851
Work engagement (Z)	0,830	0,874
Employee Performance (Y)	0,708	0,818

Source: SmartPLS output version 4, processed by researchers (2026)

Furthermore, internal consistency reliability testing was carried out using Cronbach's Alpha and Composite Reliability. A construct is declared reliable if it has Cronbach's Alpha and Composite Reliability values of more than 0.70. The results of the study showed that all variables met these requirements. Human Resource Management Digitalization obtained Cronbach's Alpha score of 0.783 and Composite Reliability of 0.851, Work Engagement of 0.830 and 0.874, respectively, while Employee Performance obtained scores of 0.708 and 0.818. Thus, all constructs have a good level of internal consistency so that the research instrument is declared reliable.

Table 4. 6 Inner VIF Values

Variabel	*Human Resource Management Digitalization* (X)	*Employee Performance* (Y)	*Work engagement* (Z)
Human Resource Management Digitalization (X)		1,743	1.000
Employee Performance (Y)			

Work engagement (Z)		1,743	

Source: SmartPLS output version 4, processed by researchers (2026)

The evaluation of the structural model (inner model) begins with collinearity assessment testing through the Variance Inflation Factor (VIF) value. The results of the analysis showed that all the inner values of VIF were below the maximum limit of 5, which were 1,743 and 1,000. This shows that there are no symptoms of multicollinearity between variables in the model so that the structural relationship can be further analyzed.

Table 4. 7 Nilai Path Coeffictionnt

Variabel	*Human Resource Management Digitalization* (X)	*Employee Performance* (Y)	*Work engagement* (Z)
Human Resource Management Digitalization (X)		0,426	0,653
Employee Performance (Y)			
Work engagement (Z)		0,429	

Source*:* SmartPLS output version 4, processed by researchers (2026)

The relationship between variables is analyzed using the path coefficient to determine the direction and strength of the influence between constructs. The results of the analysis showed that Human Resource Management Digitalization had a positive effect on Employee Performance with a coefficient of 0.426, and had a stronger positive influence on Work Engagement with a coefficient of 0.653. In addition, Work Engagement also has a positive influence on Employee Performance with a coefficient of 0.429. This value shows that all relationships between variables in the model are positive, with the greatest influence coming from Human Resource Management Digitalization on Work Engagement.

Tabel 4. 8 Coeffificient of determination

Varabel	**R-*square***
Employee Performance (Y)	0,604
Work engagement (Z)	0,426

Source: SmartPLS output version 4, processed by researchers (2026)

The model's ability to explain endogenous variables is evaluated through the Coefficient of Determination (R^2). The R^2 value for Work Engagement was 0.426, which means that Human Resource Management Digitalization was able to explain 42.6% of the variation in Work Engagement, while the remaining 57.4% was influenced by factors outside the research model. Meanwhile, the R^2 value in Employee Performance was 0.604, which showed that the combination of Human Resource Management Digitalization and Work Engagement was able to explain 60.4% of the variation in Employee Performance, while the remaining 39.6% was influenced by other variables that were not analyzed in this study. Based on these results, the structural model has a fairly good explanatory ability in describing the relationship between research variables.

Table 4. 9 F-Square Test Results

Variabel	*Human Resource Management Digitalization* (X)	*Employee Performance* (Y)	*Work engagement* (Z)
Human Resource Management Digitalization (X)		0,263	0,743
Employee Performance (Y)			
Work engagement (Z)		0,266	

Source: SmartPLS output version 4, processed by researchers (2026)

Effect size (f^2) is used to determine the amount of contribution of each exogenous variable to endogenous variables through a change in the value of the determination coefficient (R^2) if one of the independent variables is excluded from the research model (Hair et al., 2022). Based on the results of the analysis in Table 4.17, the effect of Human Resource Management Digitalization on Employee Performance obtained an f^2 value of 0.263, so it is included in the category of moderate influence because it is above

the limit of 0.15. Furthermore, the relationship between Human Resource Management Digitalization and Work Engagement resulted in an f^2 value of 0.743, which shows a great influence because it exceeds the value of 0.35. Meanwhile, the effect of Work Engagement on Employee Performance has an f^2 value of 0.266, so it is also categorized as a moderate influence. These findings show that the digitalization of human resource management contributes the most to increasing work engagement compared to other relationships in the research model.

Table 4. 10 Q-Square Test Results

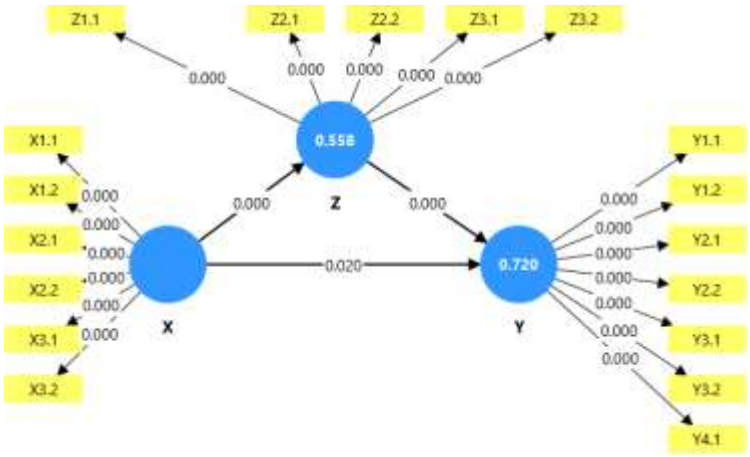
Variabel	*Q^2predict*
Work engagement (Z)	0,367
Employee Performance (Y)	0,430

Source: SmartPLS output version 4, processed by researchers (2026)

The Cross Validated Redundancy (Q^2) value is used to evaluate the model's predictive ability against endogenous variables. The model is said to have predictive relevance if the Q^2 value is greater than zero, while a value above 0.35 indicates strong predictive ability (Hair et al., 2022). The results of the analysis in Table 4.18 show that Work Engagement has a Q^2 value of 0.367, while Employee Performance has a value of 0.430. Both values are above the 0.35 criterion, so it can be concluded that the research model has strong predictive relevance. Thus, Human Resource Management Digitalization is able to predict Work Engagement, while the combination of Human Resource Management Digitalization and Work Engagement is able to predict Employee Performance well.

Hypothesis testing was carried out using the bootstrapping technique on SmartPLS to test the direct and indirect influence between variables. A hypothesis is declared acceptable if it meets the t-statistical value of ≥ 1.96 and the p-value ≤ 0.05.

Uji Boostrapping:



Source: SmartPLS output version 4, processed by researchers (2026)

Table 4. 11 Hypothesis Test Table

Influence between Variables	*Original Sample*	*T-statistics*	*P-values*	Remarks	Conclusion
Human Resource Management Digitalization Work engagement→	0,426	2,948	0,003	Positive and significant	Accepted hypotheses
Human Resource Management Digitalization →Employee Performance	0,653	7,575	0,000	Positive and significant	Accepted hypotheses
Work engagement →Employee Performance	0,429	2,632	0,009	Positive and Significant	Accepted hypothesis

Influence between Variables	*Original Sample*	*T-statistics*	*P-values*	Remarks	Conclusion
Human Resource Management Digitalization Work engagement → →Employee Performance	0,280	2,566	0,010	Positive and significant	Accepted hypotheses

Source: SmartPLS output version 4, processed by researchers (2026)

The test results showed that Human Resource Management Digitalization had a positive and significant effect on Work Engagement with a path coefficient of 0.426, a t-statistic value of 2.948, and a p-value of 0.003, so the first hypothesis was accepted. In addition, Human Resource Management Digitalization also has a positive and significant influence on Employee Performance with a coefficient of 0.653, t-statistic 7.575, and p-value of 0.000, so that the second hypothesis is accepted. Furthermore, Work Engagement was proven to have a positive and significant influence on Employee Performance with a coefficient value of 0.429, t-statistic of 2.632, and p-value of 0.009, so that the third hypothesis was also accepted.

The results of the indirect influence analysis show that Work Engagement is able to mediate the relationship between Human Resource Management Digitalization and Employee Performance. This is shown by the value of the indirect path coefficient of 0.280, with a t-statistic of 2.566 and a p-value of 0.010, so that the mediating effect is declared significant and the fourth hypothesis is accepted. These findings indicate that the implementation of digitalization of human resource management not only improves employee performance directly, but also through increasing the level of work engagement, thereby strengthening its influence on employee performance achievement.

4.2 Discussion

1. Pengaruh Human Resource Management Digitalization terhadap Work Engagement

The results of the hypothesis test show that Human Resource Management Digitalization (HRM Digitalization) has a positive and significant effect on Work Engagement, so H1 is accepted. This indicates that the more optimal the application of digitalization in human resource management, the higher the level of employee involvement in work. Descriptive analysis showed that the HRM Digitalization variable obtained an average of 4.14 (high category), with the highest indicator related to ease of access to personnel information through digital systems. The implementation of the ASN STAR application which integrates personnel administration, training, competency development, and career planning provides easy access to information so as to encourage employees to be more adaptive, active, and have a higher morale. These findings are in line with Strohmeier's (2020) theory which states that the digitalization of MSDM improves the efficiency of work processes, access to information, and the quality of decision-making, thereby creating a better work experience. These results are also supported by research by Zhou et al. (2025a) who explain that the digitalization of MSDM is able to increase work engagement through ease of communication, access to information, and competency development opportunities. Thus, the optimization of digital systems such as STAR ASN contributes to increasing employee enthusiasm, dedication, and involvement so as to support the achievement of organizational goals (Zhou et al., 2025a).

2. Pengaruh Human Resource Management Digitalization terhadap Employee Performance

The results of the study prove that Human Resource Management Digitalization has a positive and significant effect on Employee Performance, so H2 is accepted. The better the implementation of MSDM digitalization, the higher the employee performance will be. The Employee Performance variable obtained an average score of 4.25 (high category), with the highest indicator indicating that employees always strive to provide the best work results. This condition is supported by the implementation of ASN STAR which integrates personnel administration, performance reporting, competency development, and performance evaluation so as to facilitate work completion more effectively and efficiently. The results of this study are consistent with the theory of Strohmeier (2020) which states that the digitalization of MSDM is able to increase organizational effectiveness through simplifying work processes and ease of access to information. In addition, research by Li et al. (2024) and Zhou et al. (2025b) also shows that the use of digital technology in human resource management increases productivity, effectiveness, and the quality of employee performance through a more integrated, transparent, and responsive work system. Therefore, improving employees' digital competencies and optimizing the use of ASN STAR are important factors in maintaining the sustainability of performance improvement (Zhou et al., 2025b).

3. The Effect of Work Engagement on Employee Performance

The results of the hypothesis test showed that Work Engagement had a positive and significant effect on Employee Performance, so H3 was accepted. This means that the higher the employee's involvement in their work, the better the performance will be. The Work Engagement variable has an average value of 4.04 (high category), with the highest indicator describing the high energy and enthusiasm of employees at work. Even though they are adapting to the implementation of the digital system through STAR ASN, employees are still able to complete work according to the target and help each other when there are colleagues who are unable to attend. These conditions show that high enthusiasm, dedication, and cooperation contribute to improved performance. This finding is in accordance with the concept of Schaufeli and Bakker (2004) who explain that work engagement is characterized by vigor, dedication, and absorption, which encourages employees to work more optimally. Research by Bakker (2011) and Yudha (2024) also proves that work involvement has a positive effect on productivity, work quality, and the effectiveness of task completion. Thus, organizations need to maintain work engagement through organizational support, competency development, and a conducive work system so that employee performance continues to improve (Schaufeli & Bakker, 2004).

4. The Role of Work Engagement in Mediating the Influence of Human Resource Management Digitalization on Employee Performance

The results of the study show that Work Engagement is able to positively and significantly mediate the influence of Human Resource Management Digitalization on Employee Performance, so that H4 is accepted. These findings indicate that the digitalization of MSDM not only improves performance directly, but also through increased employee engagement at work. Descriptive analysis shows that HRM Digitalization has an average of 4.14, Work Engagement of 4.04, and Employee Performance of 4.25, all of which are in the high category. The ease of access to information and personnel services through the STAR ASN application encourages increased enthusiasm, enthusiasm, and employee involvement, which ultimately has an impact on improving the quality of performance. These results support the theory of Strohmeier (2020) regarding the effectiveness of MSDM digitalization and the theory of Schaufeli and Bakker (2004) which explains that employees with a high level of work engagement tend to produce better performance. Research by Zhou et al. (2025a) also strengthens that the digitalization of human resource management is able to increase work engagement, which then has a positive impact on employee performance. Therefore, the success of the implementation of digitalization does not only depend on the use of technology, but also on the organization's ability to build enthusiasm, dedication, and employee involvement through competency development and optimization of the use of ASN STAR (Zhou et al., 2025a).

Conclusion

The implementation of Human Resource Management Digitalization in the XYZ Directorate Regional Office has a positive impact on Work Engagement and Employee Performance. The more optimal the implementation of digitalization in human resource management, the higher the level of employee involvement in carrying out their work. Digitalization has also been proven to be able to improve employee performance directly through the use of a more effective and efficient HR management system. In addition, employees who have a high level of work involvement, characterized by enthusiasm, dedication, and enthusiasm at work, tend to show better performance. The results of the study also show that Work Engagement plays a role as a partial mediating variable in the relationship between Human Resource Management Digitalization and Employee Performance, so that digitalization not only has a direct effect on performance improvement, but also through increased employee work involvement.

Based on the findings of the research, the Regional Office of the XYZ Directorate is advised to continue to develop the implementation of Human Resource Management Digitalization by improving the digital personnel system, such as the STAR ASN application, as well as improving training and assistance for employees to be able to adapt to the optimal use of technology. This step is expected to strengthen work involvement while improving employee performance in a sustainable manner.

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