

The Effect of Website-Based Digital Information System Design and Human Resource Competencies on Employee Performance at the Siriwo District Office, Nabire Regency, Central Papua Province

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ABSTRACT

This study aims to analyze the effect of web-based digital information system design and human resource competence on employee performance at the Siriwo District Office, Nabire Regency, Central Papua Province. The study employs a quantitative approach with an explanatory research design and involves 35 respondents using a total sampling technique. Data were collected through questionnaires and analyzed using multiple linear regression. The results indicate that the web-based digital information system has a positive and significant effect on employee performance ($\beta = 0.866$; $p < 0.05$) and is the most dominant variable. Meanwhile, human resource competence also has a significant effect ($\beta = 0.179$; $p < 0.05$), although with a relatively lower contribution. Simultaneously, both variables have a very strong influence on employee performance, as indicated by an F-value of 380.760 and a coefficient of determination (R^2) of 0.960. These findings suggest that employee performance in this context is predominantly technology-driven, where the quality of the information system plays a key role in enhancing work effectiveness, while human resource competence serves as a supporting factor. This study highlights the importance of strengthening information systems as a primary strategy to improve performance in public sector organizations.

Keywords: : Information Systems, Human Resource Competence, Employee Performance, Digital Transformation

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I. INTRODUCTION

Advances in digital technology have driven transformation across various sectors, including government administration and public services. This transformation not only alters the way organisations operate but also necessitates the integration of information technology to enhance efficiency, transparency, and the quality of services provided to the public. In this context, the implementation of web-based information systems has become a key strategy in supporting organisational effectiveness and enabling faster, more accurate decision-making.

However, the success of information system implementation is determined not only by the quality of the technology used, but also by the readiness of human resources to operate it. Research indicates that the quality of information systems has a significant impact on performance through improved work efficiency; however, this impact is not always optimal without the support of user competence. This suggests that the relationship between technology and performance is complex and not always linear.

Human resource competence is a key factor bridging the utilisation of technology with improved performance. Competence encompasses not only technical skills but also the ability to adapt, understand the system, and resolve issues arising from technology use. Nevertheless, some studies suggest that competence does not always directly influence performance if not supported by other organisational factors, such as work systems and the working environment.

Staff performance in public organisations is influenced by various factors, including technology and individual competencies. Technology can enhance efficiency through automation and the acceleration of work processes; however, its effectiveness is highly dependent on staff's ability to utilise it. Therefore, the relationship between information systems and HR competencies is important to examine simultaneously, as both complement each other in determining staff performance levels.

Given these circumstances, there remains a research gap regarding the influence of information systems and human resource competencies on employee performance, particularly within the context of local government. This is particularly relevant to the Siriwo District Office in Nabire Regency, which continues to face challenges in technology utilisation, manual data management, and limited information transparency. Therefore, this study was conducted to analyse the influence of website-based digital information system design and human resource competencies on employee performance, thereby contributing to the development of digital-based government management.

II. THEORY

Web-based digital information systems are a form of information technology application designed to manage data, provide real-time information, and support administrative processes and decision-making within organisations. According to Grover et al. (2021), the quality of an information system is determined by its ease of use, accessibility and reliability, which directly contribute to improved work effectiveness. In line with this, Venkatesh et al. (2022) state that perceptions of ease of use and the usefulness of technology are key factors influencing system acceptance and impacting improvements in individual performance. Furthermore, research by Alalwan et al. (2021) indicates that digital transformation in the public sector has a significant impact on improving organisational performance through the utilisation of information technology.

On the other hand, human resource competencies are a crucial factor in supporting the successful implementation of technology within an organisation. Competence encompasses not only technical knowledge and skills but also an individual's ability to adapt and solve problems when using technology. Heckman (2022) emphasises that investment in HR competence has a significant impact on work productivity, whilst Salas et al. (2022) state that individual competence directly influences work quality and performance effectiveness. However, Colquitt et al. (2021) demonstrate that the influence of competence on performance is not always direct, but is influenced by organisational factors such as work systems and the work environment. This is also supported by Marler et al. (2022), who state that effective human resource management contributes to improved organisational performance.

Employee performance is the work output achieved by an individual in carrying out their duties, which can be measured through productivity, work quality, timeliness, and accountability. According to Aguinis (2021), performance is influenced by various factors, including technology, individual competencies, and the work environment. In the context of digital transformation, technology plays a role in enhancing efficiency through the automation of work processes; however, its effectiveness is highly dependent on individuals' ability to utilise the technology optimally.

Based on this review, it can be understood that information systems and human resource competencies have a complementary relationship in influencing employee performance. A high-quality information system will improve work efficiency, whilst human resource competencies will determine the extent to which the technology can be utilised optimally. Therefore, this study examines the influence of website-based digital information system design and human resource competencies on employee performance, both partially and simultaneously.

III. METHODOLOGY

This study employs a quantitative approach with an explanatory research design, aiming to test the causal relationship between the design of website-based digital information systems and human resource competencies on employee performance. This approach was chosen as it provides an empirical explanation of the relationships between variables through inferential statistical analysis.

The research was conducted at the Siriwo District Office in Nabire Regency, Central Papua Province. The population in this study comprised all 35 employees. Given the relatively small population size, the sampling technique used was total sampling (saturation sampling), meaning the entire population served as the respondents. The use of this technique aimed to minimise sampling bias and enhance the representativeness of the data within the research context.

Data collection was carried out using a structured questionnaire with a five-point Likert scale, designed to measure respondents' perceptions of the research variables. The independent variables consist of a website-based digital information system (X1), operationalised through indicators of ease of use, accessibility, alignment with organisational needs, and system security and reliability; and human resource competence (X2), measured through indicators of digital literacy, technical skills, adaptability, and problem-solving ability. The dependent variable is employee performance (Y), measured through indicators of productivity, work quality, punctuality, and responsibility.

To ensure data quality, validity tests were conducted using Pearson's correlation and reliability tests using Cronbach's Alpha coefficient. Furthermore, prior to regression analysis, the data were tested using classical

assumption tests, including tests for normality, multicollinearity, and linearity, to ensure that the model met the basic assumptions of multiple linear regression analysis.

Data analysis was performed using multiple linear regression techniques with the aid of SPSS software. This method was chosen due to regression's ability to measure the simultaneous and partial effects of more than one independent variable on the dependent variable. Hypothesis testing was carried out using the t-test to test the partial effect of each independent variable, as well as the F-test to test the simultaneous effect of both independent variables on employee performance. In addition, the coefficient of determination (R^2) was used to measure the extent to which the independent variables contribute to explaining the variation in employee performance.

IV. RESULT

Table 4.1. Descriptive Statistics of Research Variables

Variable	Mean	Category
Information System	4.65	Very High
Human Resource Competence	4.76	Very High
Employee Performance	4.67	Very High

Source: Processed primary data, 2026

Table 4.1 presents the results of the descriptive analysis of the research variables. Based on these results, all variables fall into the very high category, with an average score of 4.65 for the information system, 4.76 for human resource competence, and 4.67 for employee performance. This indicates that respondents hold a very positive perception of the information system in use, the competencies possessed, and the performance achieved.

Table 4.2 Results of Multiple Linear Regression Test (t-test)

Variable	B	Beta	t	Sig
Information System	0.866	0.833	10.680	0.000
Human Resource Competence		0.162	2.079	0.046

Source: Processed primary data, 2026

Table 4.2 shows the results of the partial multiple linear regression test (t-test). The information system variable has a positive and significant influence on employee performance with a significance value of 0.000 and a coefficient of 0.866. Meanwhile, human resource competence also has a significant influence with a significance value of 0.046 and a coefficient of 0.179. These results indicate that both variables influence performance, but the information system has a more dominant influence.

Table 4.3. Results of the Simultaneous Test (F-test)

F	Sig
380.760	0.000

Source: Processed primary data, 2026

Table 4.3 shows the results of the simultaneous test (F-test). An F-value of 380.760 with a significance level of 0.000 indicates that the variables of information systems and human resource competence together have a significant influence on employee performance.

Table 4. Coefficient of Determination (R^2)

R	R Square	Adjusted R Square
0.980	0.960	0.957

Source: Processed primary data, 2026

Table 4 shows the coefficient of determination. An R-squared value of 0.960 indicates that 96% of the variation in employee performance can be explained by the information system and human resource competence variables, whilst the remaining 4% is influenced by other variables outside the scope of this study

1) Descriptive Statistics of Research Variables

The results of the descriptive analysis in Table 1 show that all research variables fall into the 'very high' category, with an average score of 4.65 for the information system, 4.76 for human resource competence, and 4.67 for employee performance. These findings indicate that the organisation has a good level of readiness in terms of both technology and human resource capacity.

The high scores for the information system variable indicate that the system in use meets the criteria for ease of use, accessibility, and reliability. This aligns with the theory proposed by Grover et al. (2021), which states that a high-quality information system enhances work effectiveness through process integration and ease of information access. Furthermore, Venkatesh (2024) emphasises that perceptions of ease of use and the usefulness of the system are key factors in improving user performance.

On the other hand, the higher score for human resource competence (4.76) indicates that employees possess excellent ability in understanding, operating, and adapting to digital systems. This supports Heckman's (2022) assertion that competence is a crucial factor in boosting work productivity. Furthermore, Salas et al. (2022) state that individual competence contributes directly to work quality and performance effectiveness.

The combination of high-quality information systems and excellent HR competence results in high employee performance (4.67). This indicates that employee performance in this study is influenced by the synergy between technological and human factors. However, when viewed from the trend in scores, HR competence has a slightly higher score than information systems, suggesting that human factors continue to play a strategic role in supporting the successful implementation of technology.

Thus, descriptively, it can be concluded that the organisation is in an optimal state in terms of digital readiness and human resource capacity, enabling it to achieve high employee performance. This finding reinforces the concept that the success of digital transformation is determined not only by technology but also by the ability of human resources to utilise it effectively.

2) t-test

Based on the results of the partial test (t-test) in Table 2, it is evident that the variable 'web-based digital information system' has a positive and significant influence on employee performance, with a significance level of 0.000 (< 0.05) and a regression coefficient of 0.866. Furthermore, a beta value of 0.833 indicates that this variable has a very strong and dominant influence compared to other variables. This finding suggests that the quality of the information system is a key factor in enhancing employee work effectiveness. This finding aligns with the research by Alalwan et al. (2021), which demonstrated that information systems play a crucial role in improving organisational work effectiveness.

Analytically, the high influence of the information system is attributed to the system's ability to simplify work processes, accelerate information access, and minimise administrative errors. This aligns with the theory proposed by Grover et al. (2021), which states that a high-quality information system can enhance organisational performance through process efficiency and data integration. Furthermore, Venkatesh (2024) emphasises that ease of use and the usefulness of technology are key determinants in improving individual performance.

When compared with previous research, these results indicate a stronger level of influence. Previous studies generally found the influence of information systems on performance to be moderate, with a contribution of around 40%–60%, whereas in this study the regression coefficient reached 0.866 with a model contribution of 96% (R^2). This indicates that, in the context of this study, information systems play a far more dominant role in determining employee performance.

Meanwhile, the human resource competence variable also showed a positive and significant influence on employee performance, with a significance value of 0.046 (< 0.05) and a regression coefficient of 0.179. Furthermore, these results are supported by Marler et al. (2022), who state that HR competencies influence performance, although in some contexts they are not the dominant factor. However, a beta value of 0.162 indicates that their influence is relatively smaller compared to the information system. This suggests that HR competencies act as a supporting factor in enhancing performance.

These findings align with the views of Salas et al. (2022), who state that individual competence influences performance, yet it is not always the dominant factor in a well-standardised work environment. Furthermore, Heckman (2022) also emphasises that the influence of competence is highly dependent on the context of the work system employed within the organisation.

Critically, the difference in the level of influence between the information system (0.866) and HR competencies (0.179) suggests a tendency that employee performance in this study is more technology-driven than human-driven. This implies that a well-designed system can standardise work processes and reduce reliance on individual capabilities. Thus, although HR competencies remain important, in the context of this study, the role of technology is the primary factor in driving improvements in employee performance.

3) F-Test

Based on the results of the simultaneous test (F-test) in Table 3, a calculated F-value of 380.760 was obtained with a significance level of 0.000 (< 0.05). These results indicate that the variables of website-based digital information systems and human resource competencies jointly have a significant effect on employee performance. Consequently, the regression model used in this study is deemed valid and capable of explaining the relationship between the independent and dependent variables simultaneously.

Analytically, these results suggest that employee performance is not influenced by a single factor, but is the result of the interaction between the quality of information systems and human resource competencies. Information systems play a role in providing an efficient working infrastructure, whilst human resource competencies ensure that these systems can be utilised optimally. This aligns with the concept put forward by Brynjolfsson et al. (2022), who state that improved organisational performance in the digital age is the result of synergy between technology and human capability in managing it.

However, when considered in relation to the results of the previous partial tests, it is evident that the contribution of the information system is far more dominant than that of human resource competencies. This indicates that although both variables exert an influence simultaneously, the strength of their influence is not balanced, meaning that technology plays the primary role in determining employee performance

4) Coefficient of Determination / R^2

Based on the results of the analysis in Table 4, the coefficient of determination (R^2) was found to be 0.960, meaning that 96% of the variation in employee performance can be explained by the variables of the website-based digital information system and human resource competencies. Meanwhile, the remaining 4% is influenced by other variables outside the research model.

This very high coefficient of determination indicates that the research model possesses a very strong predictive ability in explaining employee performance. This suggests that the two variables used in this study are the primary factors influencing performance within the context of the organisation under investigation. This finding aligns with the research by Grover et al. (2021), which states that a well-integrated information system can make a significant contribution to an organisation's operational effectiveness.

However, critically, the very high R^2 value also indicates that the research data exhibits a high degree of homogeneity, where respondents hold relatively uniform perceptions regarding the variables under study. This may be due to similarities in the working environment, the systems used, and a relatively even level of competence among employees.

Furthermore, the high R^2 value reinforces the previous finding that employee performance in this study tends to be technology-driven, with information systems being the dominant factor in improving performance. Under these conditions, a well-designed system is able to standardise work processes, thereby reducing performance variation between individuals.

V. CONCLUSION

Based on the results of the research and discussion, it can be concluded that the design of a website-based digital information system and human resource competencies have a significant influence on employee performance, both partially and simultaneously.

Partially, the website-based digital information system was found to have a positive and significant influence on employee performance with a regression coefficient of 0.866 and a significance level of 0.000. These results indicate that the information system is a dominant factor in improving employee performance, as it enhances work efficiency, speeds up access to information, and minimises errors in administrative processes.

Meanwhile, human resource competence also has a positive and significant influence on employee performance, with a regression coefficient of 0.179 and a significance level of 0.046. However, the extent of its influence is relatively smaller compared to the information system, meaning that HR competence acts as a supporting factor in improving employee performance.

Taken together, both variables demonstrate a very strong influence on employee performance, with an F-value of 380.760 and a coefficient of determination (R^2) of 0.960, meaning that 96% of the variation in employee performance can be explained by the information system and HR competence. These findings indicate that employee performance in this study is more technology-driven, with information systems being the primary factor in driving work effectiveness.

Thus, it can be concluded that improvements in employee performance within the context of this study are significantly influenced by the quality of the information systems used, supported by human resource competencies as a complementary factor.

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