



THE EFFECT OF THE HOSPITAL MANAGEMENT INFORMATION SYSTEM (SIMRS) ON EMPLOYEE PERFORMANCE THROUGH DIGITAL COMPETENCE

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Abstract:

Digital transformation in hospitals requires not only reliable information systems but also employees who can use them effectively. This study examined the effect of the Hospital Management Information System (SIMRS) on employee performance, with digital competence as an intervening variable among management employees at RSUD Ragab Begawe Caram, Mesuji Regency. A quantitative survey design was applied to the entire population of 58 management employees. Data were collected using a five-point Likert questionnaire and analyzed with SPSS 23 through validity and reliability testing, classical assumption testing, simple and multiple linear regression, t-test, F-test, coefficient of determination, and Sobel mediation test. The instruments were reliable, with Cronbach's alpha values of 0.860, 0.934, and 0.932. SIMRS significantly affected digital competence ($t = 14.770$; $p < 0.001$; $R^2 = 0.796$), digital competence significantly affected performance ($t = 25.787$; $p < 0.001$; $R^2 = 0.922$), and SIMRS significantly affected performance ($t = 16.594$; $p < 0.001$; $R^2 = 0.831$). The combined model explained 93.7% of performance variance, while the Sobel test confirmed a significant mediation effect ($Z = 7.556$; $p < 0.001$). The findings indicate that SIMRS optimization should be accompanied by continuous digital competence development.

Keywords: SIMRS, digital competence, employee performance, hospital management

INTRODUCTION

Advances in information technology have transformed how healthcare organizations manage administrative, clinical, financial, and decision-making processes. Digital transformation does not merely involve replacing manual procedures with applications; it also requires changes in strategy, structure, work processes, and human resource competencies so that technology can generate organizational value (Vial, 2019). In hospital settings, information quality and the speed of data access are crucial because they are associated with continuity of care, reporting accuracy, interunit coordination, and efficient resource utilization.

One of the principal instruments of hospital digital transformation is the Hospital Management Information System (SIMRS). This system integrates hospital service and management workflows, including data recording, processing, storage, and presentation to authorized parties. Based on the regulation used in the thesis, SIMRS is positioned as an information and communication technology system that integrates hospital services,



administration, reporting, and coordination processes (Ministry of Health of the Republic of Indonesia, 2025). This integration is expected to reduce data redundancy, accelerate task completion, improve information accuracy, and provide a stronger basis for decision-making.

RSUD Ragab Begawe Caram in Mesuji Regency has implemented SIMRS as part of its efforts to improve management quality and efficiency. Preliminary research data indicate improvements in several Minimum Service Standard (MSS) indicators following SIMRS implementation. Follow-up on board meeting results increased from 85% in 2022 to 100% in 2024–2025, cost recovery increased from 50% to 65%, and the timely preparation of financial reports increased from 80% to 91.67%. Nevertheless, several indicators had not yet met the required standards, including the completeness of performance accountability reports, the timely submission of personnel administration proposals, a minimum of 20 training hours per year, and the timeliness of financial reports. These conditions indicate that the presence of a system does not automatically ensure the achievement of all performance targets.

The preliminary survey also identified technical and human-related constraints. Data duplication and delayed input continued to occur; some employees had not utilized all SIMRS features; several computers had limited specifications; and employees' digital capabilities varied because of differences in education, experience, training, and generation. Consequently, certain work processes still required more time, task completion was delayed, and adaptation to digital workflows occurred at different rates. This situation confirms that the benefits of information systems are strongly influenced by system quality, information quality, level of use, and user capabilities (Alshahrani et al., 2022).

Digital competence refers to employees' capacity to understand, operate, evaluate, and use digital technology effectively, safely, ethically, and responsibly. It encompasses digital knowledge, technical skills, and behavior in the use of technology (Rumata & Nugraha, 2025). In the context of SIMRS, employees with higher digital competence are generally better able to navigate system features, manage data, locate information, resolve simple problems, and use system outputs to support decisions. Conversely, limited digital competence may restrict the system to basic functions, thereby preventing the organization from obtaining the full added value of the technology.

Employee performance reflects the quality and quantity of work outcomes, timeliness, initiative, capability, and communication in fulfilling organizational responsibilities (Mangkunegara, 2024; Mitchell, 2019). In hospital governance, management employee performance is important because it affects the smooth operation of administration, reporting, financing, human resource management, and service coordination. A user-friendly SIMRS supported by high-quality data can accelerate work and reduce errors, but these effects depend on employees' readiness as users. Putri and Rahman (2023) demonstrated that digital competence is associated with the effectiveness of SIMRS implementation, whereas Indriyani et al. (2025) emphasized the contribution of digital competence to performance in the era of digital transformation.

Previous studies have generally examined either the direct effect of information systems on performance or the effect of competence on system utilization. Studies that position digital competence as a mechanism explaining how SIMRS improves the performance of hospital management employees remain limited. Ferliansyah et al. (2026) proposed that digital competence may serve as an intervening variable in the relationship between information systems and performance. Addressing this gap, the present study developed a model to examine the effect of SIMRS on digital competence, the effect of digital competence on performance, the direct effect of SIMRS on performance, and the indirect effect of SIMRS on performance through digital competence.

This study aims to provide empirical evidence from management employees at RSUD Ragab Begawe Caram. Practically, the findings are expected to provide a basis for hospital management to balance investment in systems with the development of user capacity. Conceptually, this study clarifies the role of digital competence as a link between technology implementation and performance outcomes in the healthcare environment.

Table 1. Development of Management Minimum Service Standard Indicators Before and After SIMRS Implementation

Indicator	2022	2023	2024	2025
Follow-up on board meeting results	85%	90%	100%	100%
Performance accountability reports	75%	80%	90%	90%
Timely submission of promotion proposals	78%	85%	90%	90%
Timely submission of periodic salary increase proposals	80%	85%	90%	90%
Employees receiving ≥ 20 training hours/year	$\geq 30\%$	$\geq 35\%$	$\geq 40\%$	$\geq 45\%$
Cost recovery	50%	55%	60%	65%
Timely preparation of financial reports	80%	85%	90%	91.67%

Source: RSUD Ragab Begawe Caram data processed in the thesis, 2026.

RESEARCH METHOD

This study employed a quantitative descriptive design with a survey approach. The research was conducted in the Management Division of RSUD Ragab Begawe Caram, Mesuji Regency, and data were collected from April to June 2026. The quantitative approach was used to examine causal relationships among constructs through numerical data, whereas the survey was used to obtain employees' direct perceptions of SIMRS implementation, digital competence, and performance.

The study population consisted of all 58 employees in the management division. Because the population was fewer than 100 individuals and all members were accessible, the study used saturated sampling or a census; therefore, all 58 employees served as respondents. This strategy was selected to ensure that the findings represented the conditions of management employees at the hospital without selecting only part of the population.

The independent variable was SIMRS (X), the intervening variable was digital competence (Z), and the dependent variable was employee performance

(Y). SIMRS was measured through the dimensions of human resources, hardware, software, and hospital data and networks (Ria, 2025). Digital competence was measured through digital knowledge, digital skills, and digital behavior (Rumata & Nugraha, 2025). Employee performance was measured through quality of work, timeliness, initiative, capability, and communication (Mitchell, 2019). Each variable was operationalized into 10 statements using a five-point Likert scale ranging from strongly disagree to strongly agree.

Primary data were obtained through questionnaires, observations, and preliminary interviews, whereas secondary data were obtained from organizational documents and relevant literature. Validity was tested using the Pearson Product-Moment correlation, with an r -table value of 0.2586 at the 5% significance level. Reliability was assessed using Cronbach's alpha, with an acceptance threshold greater than 0.60. All data were processed using SPSS version 23.

The analysis was conducted in stages. First, respondent characteristics and the distribution of each variable were described. Second, model feasibility was examined through residual normality, multicollinearity, and heteroscedasticity tests. Third, linear regression was used to test three equations: $Z = \alpha + \beta_1 X + \varepsilon$; $Y = \alpha + \beta_2 X + \varepsilon$; and $Y = \alpha + \beta_3 X + \beta_4 Z + \varepsilon$. The significance of partial effects was assessed using the t -test, simultaneous model feasibility using the F -test, and explanatory power using the coefficient of determination (R^2). Finally, the indirect effect of SIMRS on performance through digital competence was tested using the Sobel test. Statistical decisions were based on $\alpha = 0.05$ (Ghozali, 2021; Sugiyono, 2025).

Table 2. Operationalization of Research Variables

Variable	Role	Indicators	Number of items
SIMRS (X)	Independent	Human resources; hardware; software; data and network	10
Digital competence (Z)	Intervening	Knowledge; skills; attitudes	10
Employee performance (Y)	Dependent	Quality of work; timeliness; initiative; capability; communication	10

Source: Primary data processed, 2026.

FINDINGS AND DISCUSSION

Respondent Characteristics

Respondents were predominantly 41–50 years old (51.72%), held a bachelor's degree (60.34%), were in Grade III (70.69%), and had more than five years of service (39.66%). This composition indicates that most respondents were of productive age, had adequate formal education, and possessed sufficient experience in hospital managerial processes. At the same time, the varied distribution of age and length of service demonstrates the need for differentiated digital development strategies because the level of technological adaptation may differ between relatively new employees and those with longer tenure.

Table 3. Respondent Characteristics (n = 58)

Characteristic	Dominant category	Frequency	Percentage
Age	41-50 years	30	51.72%
Education	Bachelor's degree	35	60.34%
Status/rank	Grade III	41	70.69%
Length of service	>5 years	23	39.66%

Source: Primary data processed, 2026.

Instrument Quality and Analysis Assumptions

All 30 instrument items were declared valid. Item-total correlation values ranged from 0.268 to 0.782 for SIMRS, 0.648 to 0.895 for digital competence, and 0.632 to 0.872 for performance. All values exceeded the r-table value of 0.2586. Instrument reliability was also highly satisfactory: Cronbach's alpha was 0.860 for SIMRS, 0.934 for digital competence, and 0.932 for performance. Therefore, the instruments demonstrated good internal consistency and were suitable for further analysis.

The Kolmogorov-Smirnov normality test produced a significance value of 0.950, which was greater than 0.05, indicating that the residuals met the normality assumption. The results also showed that the VIF values for all independent variables were below 10, tolerance values were close to one, and the residual pattern did not indicate heteroscedasticity. Accordingly, the regression model was considered to satisfy the basic assumptions for hypothesis testing.

Table 4. Summary of Instrument Validity and Reliability

Variable	Number of items	Calculated r range	Cronbach's alpha	Description
SIMRS	10	0.268-0.782	0.860	Valid and reliable
Digital competence	10	0.648-0.895	0.934	Valid and highly reliable
Employee performance	10	0.632-0.872	0.932	Valid and highly reliable

Source: Primary data processed, 2026.

Description of SIMRS, Digital Competence, and Performance

SIMRS assessments were concentrated in the good and moderate categories, each accounting for 46.55%, whereas 6.90% were in the very good category. The highest-scoring item was internet network support (235), whereas the lowest score concerned the adequacy of computer specifications (182). This pattern indicates that connectivity has become a strength of SIMRS implementation, while hardware remains a weakness. In addition, system ease of use and data security received relatively lower scores than several other aspects, indicating that improvements in the interface, stability, and supporting devices remain necessary.

Digital competence was dominated by the very good category at 50.00%, followed by moderate at 41.38% and good at 8.62%. The ability to search for information through digital media received the highest score (233), whereas the ability to resolve simple problems when using SIMRS received the lowest score

(203). This indicates that employees were generally capable of utilizing digital information, but not all possessed adequate basic troubleshooting skills. This gap is important because minor disruptions that cannot be resolved independently may impede work and increase dependence on information technology personnel.

Employee performance was dominated by the very good category at 44.83%, followed by moderate at 37.93% and good at 17.24%. Commitment to minimizing errors received the highest score (217), whereas the ability to complete work on time according to targets received the lowest score (197). These findings indicate that accuracy is an employee strength, but timeliness still requires improvement. Optimizing SIMRS and digital competence is relevant to improving this dimension through automation, faster data access, and reduced repetitive work.

Table 5. Distribution of Research Variable Categories

Variable	Very good	Good	Moderate	Poor/very poor
SIMRS	4 (6.90%)	27 (46.55%)	27 (46.55%)	0 (0.00%)
Digital competence	29 (50.00%)	5 (8.62%)	24 (41.38%)	0 (0.00%)
Employee performance	26 (44.83%)	10 (17.24%)	22 (37.93%)	0 (0.00%)

Source: Primary data processed, 2026.

Hypothesis and Mediation Testing

The regression results showed that all tested relationships were significant. In the first model, the digital competence equation was $Z = 1.179 + 1.005X$. A t-value of 14.770, $p < 0.001$, and R^2 of 0.796 indicated that SIMRS implementation explained 79.6% of the variance in digital competence. In the second model, the performance equation based on digital competence was $Y = 3.589 + 0.921Z$. A t-value of 25.787, $p < 0.001$, and R^2 of 0.922 demonstrated that digital competence was a very strong predictor of employee performance.

The direct effect of SIMRS on performance was also significant, as expressed by the equation $Y = -1.906 + 1.071X$, with $t = 16.594$, $p < 0.001$, and $R^2 = 0.831$. When SIMRS and digital competence were entered simultaneously, the equation became $Y = -2.792 + 0.316X + 0.751Z$. The SIMRS coefficient remained significant ($t = 3.591$; $p = 0.001$), and digital competence was also significant ($t = 9.629$; $p < 0.001$). The simultaneous model produced $F = 409.553$, $p < 0.001$, and $R^2 = 0.937$. Thus, the two variables jointly explained 93.7% of the variance in employee performance.

The Sobel test used a path coefficient of 0.892 with a standard error of 0.068 for the effect of SIMRS on digital competence, and a coefficient of 0.721 with a standard error of 0.078 for the effect of digital competence on performance. The Sobel statistic of 7.556 with $p < 0.001$ demonstrated that digital competence significantly mediated the effect of SIMRS on performance. Because the direct effect of SIMRS remained significant after digital competence was entered into the model, the results indicated partial mediation: SIMRS improved performance directly while also generating an additional effect by increasing users' digital capabilities.

Table 6. Summary of Hypothesis Testing Results

Relationship/ model	B	t/F/Z	p	R ²	Decision	Interpretation
SIMRS → Digital competence	1.005	t=14.770	<0.001	0.796	Accepted	Positive, significant
Digital competence → Performance	0.921	t=25.787	<0.001	0.922	Accepted	Positive, significant
SIMRS → Performance	1.071	t=16.594	<0.001	0.831	Accepted	Positive, significant
SIMRS + Digital competence → Performance	0.316; 0.751	F=409.553	<0.001	0.937	Accepted	Significant simultaneous model
SIMRS → Digital competence → Performance	a=0.892; b=0.721	Z=7.556	<0.001	—	Accepted	Significant mediation

Source: Primary data processed, 2026.

Discussion of the Effect of SIMRS on Digital Competence

The positive effect of SIMRS on digital competence indicates that repeated system use in work processes serves as a means of technological learning. Employees who interact with recording, reporting, data-search, and digital coordination features gain experience that strengthens their knowledge and skills. In other words, SIMRS is not merely a tool for producing information but also a digital learning environment that encourages employees to adapt to technology-based work standards.

The R² value of 79.6% indicates that the quality of SIMRS implementation is a dominant factor in the development of digital competence in this study context. However, the descriptive results showed that hardware and the ability to resolve simple disruptions remained weak. This indicates that intensive system use should be accompanied by structured training, procedural documentation, responsive support services, and device upgrades. Putri and Rahman (2023) emphasized that digital competence determines the effectiveness of SIMRS implementation; the present study complements this view by demonstrating the reverse relationship, namely that experience in using SIMRS can also strengthen digital competence.

Consequently, training should not be limited to initial orientation. Hospitals require tiered programs covering basic functions, advanced feature utilization, data security, information management, and the resolution of simple disruptions. Employees with higher capabilities may be appointed as champions or unit mentors to accelerate knowledge transfer and reduce disparities among employees.

Discussion of the Effect of Digital Competence on Performance

Digital competence had the strongest effect on performance, as indicated by $t = 25.787$ and $R^2 = 92.2\%$. Employees who understand technological functions, can operate SIMRS, are open to change, and use information responsibly are better able to complete their work accurately and efficiently. This finding is consistent with Indriyani et al. (2025), who identified digital competence as an important factor in improving performance in organizations undergoing digital transformation.

In hospital managerial work, digital competence shortens data-search time, reduces process duplication, improves reporting accuracy, and facilitates cross-unit coordination. It also strengthens initiative because employees are more

confident in exploring information and seeking solutions. Thus, digital competence affects not only technical skills but also decision-making quality, communication, and adaptability—dimensions that are directly related to performance (Wibowo, 2020).

The lowest digital competence score concerned the ability to solve simple problems, whereas the lowest performance score concerned timeliness. These findings are interrelated: when employees encounter system disruptions and cannot perform initial troubleshooting, work may be delayed. Therefore, improving basic troubleshooting skills is a practical intervention that may directly improve the timely completion of tasks.

Discussion of the Effect of SIMRS on Performance

The direct effect of SIMRS on performance indicates that an integrated system can improve productivity, accuracy, and work coordination. SIMRS provides data through a more structured workflow, eliminating the need for employees to repeat data entry or search for documents across multiple sources. This finding is consistent with Alshahrani et al. (2022), who emphasized that system and information quality influence system use, user satisfaction, and work outcomes in healthcare organizations.

Improvements in MSS indicators after SIMRS implementation reinforce the quantitative findings. Increased follow-up on meeting results, cost recovery, and the timeliness of financial reporting demonstrate that digitalization has produced operational benefits. However, the failure of several indicators to meet established standards indicates that the system has not been utilized uniformly and that infrastructure constraints have not been fully resolved. Therefore, SIMRS performance evaluation should encompass technical aspects, user experience, data quality, network speed, feature integration, and management support.

The negative constants in the direct and combined models should not be interpreted as negative actual performance. These values are mathematical intercepts when the SIMRS or digital competence scores are assumed to be zero, a condition outside the hospital's operational context. The substantive interpretation should focus on the positive coefficients and the significance of the relationships, which indicate that improvements in SIMRS quality are associated with improved performance.

The Mediating Role of Digital Competence

The mediation results explain the mechanism through which technology affects organizational outcomes. SIMRS can directly improve performance through process automation and integration, but its benefits become greater when employees possess the competence to use the system optimally. Digital competence transforms technological potential into productive work behavior: employees can select appropriate features, understand information, maintain data security, and respond to problems without always waiting for assistance.

This finding supports the argument of Ferliansyah et al. (2026) that digital competence may serve as an intervening variable in the relationship between information systems and performance. The high Sobel value indicates that the

indirect pathway is not merely a small additional effect but an important component of successful SIMRS implementation. Accordingly, technology investment without investment in human resources risks creating utilization gaps, while training without a stable system will also fail to produce optimal performance.

Management strategies should integrate four agendas: upgrading devices and networks; improving features and data quality; continuously developing digital competence; and establishing a work culture that supports technological learning. Training evaluation should assess not only attendance but also employees' actual ability to use features, resolve cases, maintain data security, and improve the timeliness of work. This integrated approach will strengthen the effect of SIMRS on the quality of hospital governance and services.

CONCLUSION

This study demonstrated that SIMRS had a positive and significant effect on digital competence and employee performance, while digital competence had a positive and significant effect on the performance of management employees at RSUD Ragab Begawe Caram. The model incorporating SIMRS and digital competence simultaneously explained 93.7% of the variance in performance. The Sobel test confirmed that digital competence significantly mediated the effect of SIMRS on performance; because the direct effect of SIMRS remained significant after the mediator was included, the relationship reflected partial mediation. These findings confirm that successful hospital digital transformation is determined not only by the availability of a system but also by employees' ability to translate system functions into fast, accurate, secure, and coordinated work processes. Hospital management should prioritize upgrades to computers and infrastructure, improvements in SIMRS stability and ease of use, tiered digital training, unit-based mentoring, and stronger basic technical problem-solving capabilities. This study was limited to one hospital, used a cross-sectional design, and relied on respondents' perceptions. Future studies should therefore involve multiple hospitals, use objective performance data, and examine other factors such as organizational support, digital culture, system quality, and transformational leadership.

REFERENCES

- Alshahrani, A., et al. (2022). The impact of information system quality on employee performance in healthcare organizations. *International Journal of Healthcare Management*, 15(4), 1-10.
- Ferliansyah, R., Putra, D., & Amanda, S. (2026). Digital competence as an intervening variable in the effect of information systems on employee performance [in Indonesian]. *Jurnal Sistem Informasi dan Manajemen*, 8(1), 45-56.
- Ghozali, I. (2021). *Multivariate analysis applications using IBM SPSS* [in Indonesian]. Semarang: Diponegoro University Press.
- Indriyani, N., Saputra, H., & Kurniawan, A. (2025). The effect of digital

- competence on employee performance in the era of digital transformation [in Indonesian]. *Jurnal Manajemen dan Teknologi Informasi*, 10(2), 112–124.
- Ministry of Health of the Republic of Indonesia. (2025). Regulation of the Minister of Health of the Republic of Indonesia Number 82 of 2025 concerning Hospital Management Information Systems [in Indonesian]. Jakarta: Ministry of Health of the Republic of Indonesia.
- Mangkunegara, A. A. A. P. (2024). Corporate human resource management [in Indonesian]. Bandung: Remaja Rosdakarya.
- Mitchell, T. R. (2019). *People in organizations: Understanding their behavior*. New York: McGraw-Hill.
- Putri, D., & Rahman, M. (2023). The effect of digital competence on the effectiveness of Hospital Management Information System implementation [in Indonesian]. *Jurnal Administrasi Kesehatan Indonesia*, 11(2), 98–110.
- Ria, A. (2025). Hospital management information systems and their implementation [in Indonesian]. Jakarta: Salemba Medika.
- Rumata, V. M., & Nugraha, D. A. (2025). Digital literacy and competence in Indonesia [in Indonesian]. Jakarta: Kominfo.
- Sugiyono. (2025). Quantitative, qualitative, and R&D research methods [in Indonesian]. Bandung: Alfabeta.
- Vial, G. (2019). Understanding digital transformation: A review and a research agenda. *The Journal of Strategic Information Systems*, 28(2), 118–144.
- Wibowo. (2020). Performance management [in Indonesian]. Jakarta: Raja Grafindo Persada.