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SIMGOS EFFECTIVENESS: ASSOCIATIONS WITH HUMAN RESOURCES, MANAGEMENT SUPPORT, AND SYSTEM DESIGN AT ADINDA MEDICAL CENTRE

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ABSTRACT

This study aims to analyze the relationship between human resources, management support, and system design with the effectiveness of the Generic Open Source Hospital Management Information System (SIMGOS) at Adinda Medical Centre, Sidenreng Rappang Regency, Indonesia. The study employed a quantitative analytic design with a cross-sectional approach involving 103 respondents selected using simple random sampling. Data were collected through structured questionnaires, observation, and documentation, and analyzed using univariate and bivariate analysis with the Chi-square test. The results showed that human resources had a significant relationship with the effectiveness of SIMGOS utilization (p = 0.001), indicating that users with better competence, experience, and understanding of the system tended to utilize SIMGOS more effectively. Management support also demonstrated a significant relationship with SIMGOS effectiveness (p = 0.001), reflecting the importance of organizational support, supervision, and training in ensuring optimal system implementation. However, system design did not show a significant relationship with SIMGOS effectiveness (p = 0.384), suggesting that users were still able to adapt to technical limitations within the system. The study concludes that the effectiveness of SIMGOS utilization is more strongly associated with human and organizational factors than with technological factors alone. Strengthening human resource capacity and improving management support are therefore essential strategies to enhance hospital information system utilization.

Keywords: *SIMGOS effectiveness, human resources, management support, system design, hospital information system.*

INTRODUCTION

The development of information technology has become an important foundation for improving the quality, efficiency, and continuity of healthcare services. Digital transformation enables healthcare activities to be conducted more effectively, systematically, and accurately through integrated information systems. Hospital information systems play a major role in supporting patient registration, medical records, pharmacy services, financial administration, reporting, and healthcare management processes. The implementation of digital systems is also expected to reduce manual recording errors, improve data accuracy, and support faster decision-making in healthcare services (World Health Organization [WHO], 2021).

Globally, healthcare facilities continue to strengthen information technology systems to support fast, integrated, and data-based healthcare services. However, the implementation of digital health systems still faces several challenges, including limited

technological infrastructure, unstable internet networks, low digital literacy among healthcare workers, and resistance to technological change. These barriers indicate that the success of healthcare information systems is not only determined by the availability of technology, but also by user readiness, organizational support, and system suitability with service needs (Hardiana et al., 2024).

In Indonesia, the implementation of Hospital Management Information Systems, known as Sistem Informasi Manajemen Rumah Sakit (SIMRS), has become an important strategy to improve healthcare service quality and hospital operational efficiency. Nevertheless, many healthcare facilities still experience obstacles in optimizing information systems, such as system integration problems, limited facilities, lack of user competence, incomplete documentation, and continued dependence on manual recording. These obstacles can affect service flow, delay data processing, reduce the accuracy of information, and create inconsistencies in hospital reporting and administrative processes (Berliani & Dhamanti, 2024).

Human resources are one of the key factors influencing the successful implementation of hospital information systems. Users with adequate digital literacy, system-operating skills, training experience, and understanding of system features tend to use hospital information systems more effectively. Conversely, limited competence and lack of understanding of system procedures may increase the risk of input errors, duplicate recording, delayed data entry, and reduced efficiency in healthcare service delivery (Hasan et al., 2025).

Management support is also essential in ensuring the sustainability and consistency of hospital information system utilization. Organizational commitment through clear policies, supervision, infrastructure provision, technical assistance, user training, and standard operating procedures can improve the consistency of system use across hospital units. Hospitals with strong management support generally demonstrate better information system implementation because users receive clearer guidance, adequate resources, and continuous assistance in overcoming operational barriers (Lestari et al., 2020).

In addition, system design influences user experience and operational effectiveness in healthcare information system utilization. System stability, interface clarity, processing speed, feature suitability, ease of data input, and accuracy of generated information determine whether users can operate the system efficiently. Poor system quality may create technical barriers, reduce user satisfaction, increase workload, and limit the contribution of information systems to healthcare service effectiveness (Kusnadi & Tuankotta, 2025).

RS Adinda Medical Centre, Sidenreng Rappang Regency, has implemented the Generic Open Source Hospital Management Information System (SIMGOS) to support healthcare services and administrative activities. However, preliminary findings indicate that the utilization of SIMGOS has not yet been optimal. Initial assessment among SIMGOS users showed that 43.7% of respondents still perceived human resource capacity as low, 48.5% perceived management support as insufficient, 71.8% considered the system design inappropriate, and 47.6% reported that SIMGOS utilization was not yet effective. These findings indicate that nearly half of users still experience barriers related to

competence, organizational support, and system use, while most users perceive technical limitations in the system design. Similar SIMRS studies also identify user readiness, infrastructure limitations, training gaps, and system suitability as common barriers to implementation (Cita et al., 2025; Munawwarah et al., 2024; Walili & Alim, 2025).

Based on preliminary observations at RS Adinda Medical Centre, several operational problems were also identified, including inconsistent data input, unstable internet networks, differences in users' understanding of SIMGOS features, and continued manual recording in several healthcare units. These problems may affect the accuracy of patient data, slow down administrative processes, increase the workload of healthcare workers, and reduce the effectiveness of information system utilization in supporting integrated healthcare services. Therefore, the problem of SIMGOS implementation in this hospital requires further analysis using human, organizational, and technological perspectives, as previous studies have also shown that SIMRS implementation barriers can emerge from infrastructure, user competence, workflow adaptation, and managerial support (Berliani & Dhamanti, 2024; Cita et al., 2025; Rahmaddian & Faaghna, 2023).

To address these problems, this study is expected to provide more specific practical recommendations, including regular user training to improve digital competence and understanding of SIMGOS features, strengthening network and technological infrastructure to reduce access disruptions, developing technical assistance mechanisms for users, improving management supervision, and standardizing data input procedures through clear SOPs across hospital units. These recommendations are important to ensure that SIMGOS is not only available as a digital system, but also consistently and effectively used in daily healthcare service processes.

Therefore, this study aims to analyze the relationship between human resources, management support, and system design with the effectiveness of SIMGOS utilization at RS Adinda Medical Centre, Sidenreng Rappang Regency. The findings of this study are expected to provide empirical evidence and practical recommendations for improving hospital information system implementation, strengthening operational efficiency, improving data accuracy, and supporting better healthcare service quality.

RESEARCH METHOD

This study employs a quantitative, explanatory research design grounded in a positivist paradigm to examine the relationships between human resources, management support, system design, and the effectiveness of SIMGOS utilization. A cross-sectional survey approach is applied to capture user perceptions at a single point in time, enabling the analysis of relationships among variables based on actual conditions in the field (Sugiyono, 2023). The study tests three hypotheses concerning the associations between the independent variables and SIMGOS utilization effectiveness. Data analysis is conducted using statistical methods, including univariate and bivariate analysis with the Chi-square test to determine the significance of associations between variables (Mardhatillah et al., 2024).

The research is conducted at Adinda Medical Centre, Sidenreng Rappang Regency,

Indonesia, a healthcare facility that utilizes the Generic Open Source Hospital Management Information System (SIMGOS) to support administrative and clinical operations. The study population consists of all SIMGOS users involved in health information management processes within the hospital, totaling 139 individuals. A simple random sampling technique is applied to ensure that each member of the population has an equal opportunity to be selected. Based on the Slovin formula with a 5% margin of error, a sample size of 103 respondents is obtained to ensure adequate representation.

Data are collected through structured questionnaires, direct observation, and documentation. The questionnaire is designed using a Likert scale ranging from strongly agree to strongly disagree to measure respondents' perceptions regarding human resources, management support, system design, and the effectiveness of SIMGOS use. Human resources are assessed through indicators such as user competence, experience, understanding of system features, adaptability, and training (Hardiana et al., 2024; Kusnadi & Tuankotta, 2025; Hasan et al., 2025; Oktarini & Pertiwi, 2023). Management support includes the availability of standard operating procedures (SOPs), infrastructure, supervision, policies, and training programs (Rahmi et al., 2025; Cita et al., 2025; Lestari et al., 2020; Lumingkewas et al., 2023). System design is evaluated based on system usability, interface clarity, processing speed, system stability, feature suitability, and data accuracy (Kusnadi & Tuankotta, 2025; Cita et al., 2025). The effectiveness of SIMGOS utilization is measured through efficiency in work processes, ease of data input and retrieval, accuracy of information, and the overall support of the system in healthcare service delivery (Rambe et al., 2025; Cita et al., 2025; Hasan et al., 2025).

Data processing was carried out using statistical software, including data editing, coding, cleaning, scoring, and tabulation before further analysis. After the validity and reliability of the instrument were confirmed, the data were analyzed using univariate and bivariate techniques. Univariate analysis was used to describe respondent characteristics and the distribution of each research variable. Bivariate analysis was applied to examine the relationship between the independent variables, namely human resources, management support, and system design, and the dependent variable, namely the effectiveness of SIMGOS use. The Chi-square test was employed to assess statistical significance, with a p-value of less than 0.05 indicating a significant relationship between variables (Mardhatillah et al., 2024).

Ethical considerations were strictly maintained throughout the research process. Participation was voluntary, and all respondents provided informed consent prior to data collection. Confidentiality and anonymity of respondents were ensured, and the data collected were used solely for research purposes. This methodological approach is expected to generate valid and reliable empirical evidence regarding the factors influencing the effectiveness of SIMGOS utilization in hospital settings. The conceptual relationships among the study variables are summarized in Figure 1.

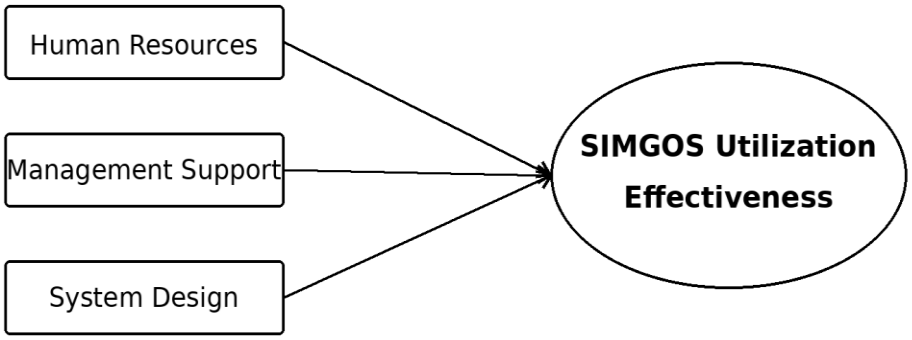

Figure 1. Research Framework of SIMGOS Effectiveness

As shown in Figure 1, the independent variables in this study are Human Resources (X1), Management Support (X2), and System Design (X3), each consisting of relevant indicators reflecting user competence, organizational support, and system quality (Hardiana et al., 2024; Rahmi et al., 2025; Kusnadi & Tuankotta, 2025). The dependent variable is the Effectiveness of SIMGOS Utilization (Y), which reflects the extent to which the system improves efficiency, accuracy, and service processes within the hospital (Rambe et al., 2025; Hasan et al., 2025).

RESULTS AND DISCUSSION

Results

Respondent Characteristics

The demographic profile of the respondents provides an important context for interpreting the relationship between human resources, management support, system design, and the effectiveness of SIMGOS utilization. This study involved 103 respondents who were active users of SIMGOS at Adinda Medical Centre, Sidenreng Rappang Regency. Respondents came from various functional units within the hospital, including nursing, pharmacy, finance, registration, medical records, casemix, IT, coding, cashier, occupational health and safety, administration, planning, facilities, and human resources units. Therefore, the respondent profile reflects users who are directly involved in both healthcare service delivery and hospital administrative processes. Table 1 summarizes these characteristics to support interpretation of the study findings.

Based on gender, most respondents were female, totaling 83 respondents (80.6%), while male respondents accounted for 20 respondents (19.4%). This finding indicates that SIMGOS utilization in this hospital is largely represented by female healthcare workers, particularly nurses, who are the dominant professional group involved in patient care documentation and daily service activities. Based on age, most respondents were in the 20–30 years age group, with 70 respondents (68.0%), while 33 respondents (32.0%) were in the 31–40 years age group. This shows that most SIMGOS users were in the productive age category and may have relatively good adaptability to digital technology.

In terms of occupation, nurses represented the largest proportion of respondents,

with 71 respondents (68.9%). Other respondent groups included pharmacists with 6 respondents (5.8%), finance staff and receptionists with 4 respondents each (3.9%), casemix officers and medical record officers with 3 respondents each (2.9%), IT staff, coders, and outpatient cashiers with 2 respondents each (1.9%), and several managerial or supporting positions with 1 respondent each (1.0%). These findings indicate that SIMGOS is used across multiple hospital units, although its utilization is predominantly represented by nurses as the main users in patient care documentation and service recording.

Table 1. Distribution of Respondent Characteristics

Respondent Characteristics	Category	Frequency (n)	Percentage (%)
Gender	Female	83	80.6
	Male	20	19.4
	Total	103	100.0
Age	20–30 years	70	68.0
	31–40 years	33	32.0
	Total	103	100.0
Occupation	Nurse	71	68.9
	Pharmacist	6	5.8
	Finance staff	4	3.9
	Receptionist	4	3.9
	Casemix officer	3	2.9
	Medical record officer	3	2.9
	IT staff	2	1.9
	Coder	2	1.9
	Outpatient cashier	2	1.9
	Occupational health and safety staff	1	1.0
	Administration coordinator	1	1.0
	Planning coordinator	1	1.0
	Facilities coordinator	1	1.0
	Human resources officer	1	1.0
	Total	103	100.0

Source: Primary Data Processed, 2026

Distribution of Study Variables

The distribution of the study variables is presented in Table 2 and provides an overview of respondents' perceptions regarding human resources, management support, system design, and the effectiveness of SIMGOS utilization. Each variable was measured using specific indicators in the questionnaire. Human resources were assessed through

user competence, experience, understanding of SIMGOS features, adaptability, and training. Management support was measured through the availability of standard operating procedures, infrastructure, supervision, policies, and training programs. System design was assessed based on usability, interface clarity, processing speed, system stability, feature suitability, and data accuracy. Meanwhile, SIMGOS effectiveness was measured through work efficiency, ease of data input and retrieval, information accuracy, and support for healthcare service delivery.

Table 2. Distribution of Study Variables

Variable	Category	Frequency (n)	Percentage (%)
Human Resources	Adequate	58	56.3
	Low	45	43.7
	Total	103	100.0
Management Support	Good	53	51.5
	Low	50	48.5
	Total	103	100.0
System Design	Appropriate	29	28.2
	Not appropriate	74	71.8
	Total	103	100.0
SIMGOS Effectiveness	Effective	54	52.4
	Not effective	49	47.6
	Total	103	100.0

Source: Primary Data Processed, 2026

Based on Table 2, most respondents perceived human resources as adequate, with 58 respondents (56.3%), while 45 respondents (43.7%) perceived human resources as low. This finding indicates that more than half of SIMGOS users had adequate capacity in terms of competence, experience, understanding of system features, adaptability, and training. However, the relatively high proportion of respondents in the low category suggests that several users still experienced limitations in operating SIMGOS, particularly in understanding system features, adapting to digital workflows, and applying data input procedures consistently. Therefore, user competence and continuous training remain important aspects that need to be strengthened.

Regarding management support, 53 respondents (51.5%) reported good management support, while 50 respondents (48.5%) perceived management support as low. This nearly balanced distribution indicates that management support in SIMGOS implementation has not been evenly perceived by all users. Based on the instrument indicators, this condition may be related to the availability and implementation of SOPs, infrastructure support, supervision, policies, and training programs. The high proportion of respondents who perceived management support as low suggests the need for stronger managerial involvement, especially in providing technical assistance, ensuring regular

supervision, improving infrastructure readiness, and standardizing system-use procedures across hospital units.

System design was perceived as not appropriate by most respondents, with 74 respondents (71.8%), while only 29 respondents (28.2%) considered the system design appropriate. This finding shows that system design was the most problematic variable among the study variables. Based on the measured indicators, users may have experienced obstacles related to system usability, interface clarity, processing speed, system stability, feature suitability, and data accuracy. These technical limitations can reduce user convenience, slow down data processing, and create barriers in healthcare service documentation and administrative workflows. Although system design was not found to have a significant relationship with SIMGOS effectiveness in the hypothesis test, the high percentage of negative perceptions indicates that technical system improvement remains necessary.

Meanwhile, SIMGOS utilization was perceived as effective by 54 respondents (52.4%), while 49 respondents (47.6%) perceived it as not effective. This finding indicates that SIMGOS has generally supported hospital service activities, but its effectiveness has not yet been optimal across all users and units. Based on the instrument indicators, SIMGOS effectiveness is reflected in work efficiency, ease of data input and retrieval, information accuracy, and support for healthcare service delivery. The relatively high proportion of respondents who perceived SIMGOS as not effective suggests that several service processes may still face obstacles, such as delayed data input, difficulties retrieving information, inconsistent documentation, or continued manual recording in some units.

Overall, the distribution of study variables indicates that the effectiveness of SIMGOS utilization is influenced by the interaction between human, organizational, and technological factors. Human resources and management support showed relatively balanced distributions, meaning that user competence and organizational support still require improvement. In contrast, system design showed the highest proportion of negative perception, indicating that technical barriers remain a major concern in daily system utilization. Therefore, practical improvements should focus on strengthening user training, improving management supervision, standardizing data input procedures, providing technical assistance, and enhancing network and system stability to optimize SIMGOS implementation at Adinda Medical Centre.

Bivariate Analysis and Hypothesis Testing

The Chi-square test was used to examine the association of human resources, management support, and system design with SIMGOS utilization effectiveness. As presented in Table 3, human resources and management support were significantly associated with effectiveness ($p = 0.001$ for each), whereas system design was not significantly associated ($p = 0.384$).

Table 3. Results of the Chi-Square Tests

Hypothesis	Relationship	p-value	Decision
H1	Human Resources – SIMGOS Effectiveness	0.001	Accepted
H2	Management Support – SIMGOS Effectiveness	0.001	Accepted
H3	System Design – SIMGOS Effectiveness	0.384	Rejected

Source: Primary Data Processed, 2026

Table 3 shows that human resources and management support were each significantly associated with SIMGOS utilization effectiveness ($p = 0.001$). In contrast, system design was not significantly associated with effectiveness ($p = 0.384$). These results suggest that user capacity and organizational support are more closely related to effective utilization than perceived system-design limitations in this setting.

Discussion

Hypothesis 1: Human Resources are significantly associated with SIMGOS effectiveness

The results indicate a significant association between human resources and SIMGOS utilization effectiveness at Adinda Medical Centre. This finding demonstrates that users with adequate competence, digital literacy, understanding of system features, and technological adaptability tend to utilize SIMGOS more effectively in healthcare service processes and hospital administration activities. Human resources become one of the most important determinants in healthcare information system implementation because users are directly involved in operating the system during patient registration, medical recording, reporting, and administrative activities. Users with better competence generally demonstrate higher accuracy, faster adaptation, and better consistency in utilizing healthcare information systems.

Human resources are important components in the successful implementation of healthcare information systems because users directly interact with the system during operational activities. According to Yusof et al. (2006), the human dimension in the HOT-Fit theory emphasizes that user competence, knowledge, and system acceptance determine the effectiveness of healthcare information systems. Users who possess adequate technological skills and understanding of information systems are more capable of operating systems efficiently and minimizing operational errors. In contrast, users with limited understanding of system features and inadequate technological literacy may experience difficulties in system utilization, resulting in delays in healthcare service processes and inaccuracies in information management.

The findings of this study are consistent with Hardiana et al. (2024), who reported that user competence significantly influences the successful implementation of hospital information systems. Healthcare workers who receive sufficient training and possess good understanding of system features tend to demonstrate more effective system utilization. Similarly, Hasan et al. (2025) explained that digital literacy and technological

readiness positively contribute to healthcare information system effectiveness and operational efficiency. These studies indicate that strengthening user competence through training and continuous assistance is an important strategy to improve healthcare information system performance.

At RS Adinda Medical Centre, most respondents were within the productive age category and actively utilized SIMGOS in healthcare service activities. This condition indicates that younger healthcare workers are relatively adaptable to digital technology and healthcare information systems. However, several respondents still reported difficulties related to technical understanding and system operation, particularly regarding system features and data input procedures. These findings indicate that although SIMGOS has generally been implemented effectively, continuous training and capacity-building programs remain necessary to ensure optimal system utilization across all healthcare units.

Therefore, hospitals should prioritize improving user competence through regular training, technical assistance, and continuous evaluation to optimize SIMGOS implementation and improve healthcare operational efficiency. Continuous supervision and competency development programs are also necessary to improve healthcare workers' readiness in adapting to technological developments and healthcare digitalization processes.

Hypothesis 2: Management support is significantly associated with SIMGOS effectiveness

The results indicate a significant association between management support and SIMGOS utilization effectiveness at Adinda Medical Centre. This finding demonstrates that users are more likely to utilize SIMGOS effectively when the organization provides clear policies, consistent supervision, infrastructure readiness, technical assistance, training programs, and standard operating procedures. Management support becomes a key determinant because hospital information system implementation requires not only individual user competence, but also organizational commitment that ensures the system is consistently used across units.

Management support is an important component in the successful implementation of healthcare information systems because organizational readiness influences how users adopt and maintain system use during daily operations. According to Yusof et al. (2006), the organizational dimension in the HOT-Fit theory emphasizes that structure, environment, leadership, and management support affect information system performance. Hospitals with strong managerial commitment are more capable of providing resources, establishing procedures, responding to technical problems, and aligning digital systems with service workflows.

The findings of this study are consistent with Lestari et al. (2020), who reported that organizational support is an important component in evaluating hospital information systems using the HOT-Fit framework. Similarly, Rahmi et al. (2025) and Cita et al. (2025) explained that SIMRS implementation barriers are often associated with limited

supervision, insufficient infrastructure, lack of continuous training, and uneven organizational readiness. These studies indicate that management support contributes to more consistent system use and reduces operational barriers in healthcare information management.

At RS Adinda Medical Centre, management support was perceived as good by 53 respondents (51.5%), while 50 respondents (48.5%) perceived it as low. This nearly balanced distribution indicates that management support had been provided, but it was not yet evenly experienced by all users and units. Several users may still require stronger technical assistance, clearer SOP implementation, regular supervision, and improved infrastructure readiness to ensure that SIMGOS can be used consistently in clinical and administrative processes.

Therefore, hospital management should strengthen SIMGOS implementation through regular supervision, practical user training, consistent SOP enforcement, rapid technical support, and periodic system evaluation. These efforts are necessary to improve organizational readiness, reduce implementation barriers, and ensure that SIMGOS contributes to operational efficiency, data accuracy, and healthcare service quality.

Hypothesis 3: System design is not significantly associated with SIMGOS effectiveness

The study found no statistically significant association between system design and SIMGOS utilization effectiveness at Adinda Medical Centre. Although several respondents reported limitations related to system usability, interface quality, processing speed, and system stability, healthcare workers were still able to adapt and continue utilizing SIMGOS in healthcare service activities. This finding indicates that healthcare workers continued utilizing the system because SIMGOS had become integrated into healthcare service and hospital administrative processes, despite the presence of several technical limitations.

The novelty of this study lies in its empirical finding that the effectiveness of SIMGOS utilization at RS Adinda Medical Centre is more strongly associated with human and organizational factors than with technological factors alone. Recent hospital information system studies emphasize infrastructure, interoperability, and technical readiness as important determinants of digital health implementation (Berliani & Dhamanti, 2024; Rambe et al., 2025; Cita et al., 2025). In contrast, this study shows that although system design was perceived as limited by many users, it did not have a significant effect on SIMGOS effectiveness. Human resources and management support were found to be more decisive factors in maintaining effective system utilization. This finding provides a specific contribution to the application of the HOT-Fit framework in the context of SIMGOS implementation by highlighting that user competence, training, supervision, and organizational commitment may enable healthcare workers to continue using the system effectively despite technical constraints.

The findings partially support Kusnadi and Tuankotta (2025), who explained that system quality contributes to operational efficiency and user convenience. However,

healthcare workers may continue utilizing healthcare information systems despite technical limitations because the systems have become integrated into healthcare service and administrative processes. This condition indicates that technological limitations do not always directly reduce healthcare information system utilization when users are already accustomed to the system and organizational support remains available.

At RS Adinda Medical Centre, respondents reported several technical obstacles such as unstable internet connections, delays in system response, and difficulties accessing certain features. Some healthcare workers also experienced delays during patient data input and difficulties in accessing information between service units. Nevertheless, users continued utilizing SIMGOS because the system was necessary for healthcare service documentation and hospital administration activities. This finding indicates that users had adapted to the system and attempted to maintain operational activities despite technical limitations.

Although system design did not demonstrate a statistically significant effect, improving technical quality remains important to enhance operational efficiency and user convenience. Hospitals should therefore continue improving system usability, interface quality, technical infrastructure, and network stability to optimize healthcare information system performance and healthcare service quality. Technical system improvement is also necessary to reduce operational barriers, improve data processing speed, and increase user satisfaction during system utilization.

Beyond the hospital context, the findings of this study may provide broader benefits for the development of healthcare information systems in regional healthcare facilities and developing countries. The results indicate that successful digital health implementation does not depend solely on technological readiness, but also on user competence, management commitment, supervision, and standardized data input procedures. Recent digital health literature also emphasizes that sustainable hospital information system implementation requires continuous user training, infrastructure strengthening, technical assistance, and organizational support (WHO, 2021; Rambe et al., 2025; Rahmi et al., 2025; Cita et al., 2025). Therefore, this study can serve as a reference for healthcare managers and policymakers in strengthening digital health transformation, particularly in resource-limited settings where infrastructure, internet connectivity, and user readiness may still be uneven.

This study should be interpreted in light of its cross-sectional design, reliance on self-reported perceptions, and single-hospital setting, which limit causal inference and generalizability. Future studies should use longitudinal or mixed-method designs and include multiple hospitals to examine how user competence, organizational support, and technical quality interact over time.

CONCLUSION

This study concludes that human resources and management support are significantly associated with SIMGOS utilization effectiveness at Adinda Medical Centre, Sidenreng Rappang Regency, whereas system design is not significantly

associated with effectiveness. Users with adequate competence, digital literacy, understanding of system features, and technological adaptability tend to utilize SIMGOS more effectively in supporting healthcare service and hospital administration activities. In addition, management support through supervision, training programs, infrastructure provision, and implementation of standard operating procedures contributes positively to successful healthcare information system implementation and operational efficiency. Although several technical limitations related to usability, processing speed, and system stability remain, healthcare workers were still able to adapt and continue utilizing the system because SIMGOS had become part of daily healthcare service and administrative processes. Therefore, hospitals are encouraged to improve user competence through continuous training programs, strengthen management support, standardize data input procedures, provide technical assistance, conduct regular system evaluations, and improve technological infrastructure to optimize hospital information system implementation and improve healthcare service quality.

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