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Evaluating SIMGOS Hospital Management Information System Using PIECES Framework: A Qualitative Regional Hospital Study

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ABSTRACT

Hospitals need integrated information systems to support coordinated, efficient services. A regional hospital in Muna Regency has used the Generic Open Source Management Information System (SIMGOS) since 2020, but its implementation required systematic evaluation. This study evaluated SIMGOS using the PIECES framework (Performance, Information, Economics, Control, Efficiency, and Service). A qualitative case study was conducted in January–February 2025. Data were collected through in-depth interviews with five hospital informants, participatory observation, and document review. Thematic analysis followed the PIECES dimensions. SIMGOS integrated hospital service units and supported Ministry of Health reporting. Patient summaries and role-restricted access supported information accuracy and confidentiality, while routine backups strengthened data control. Paperless processes and rapid record retrieval reduced administrative work and waiting time, and users described the system as easy to use. However, network disruptions and delayed software updates posed reliability and maintenance challenges. SIMGOS supported coordinated and efficient hospital operations across the six PIECES dimensions. Sustaining these benefits requires more reliable network infrastructure and timely software updates. Routine evaluation should pair performance monitoring with infrastructure and maintenance planning.

Keywords: Case Study; Evaluation; Hospital Information System; PIECES Framework; SIMGOS

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INTRODUCTION

The development of information and communication technology in the digital era has driven a comprehensive transformation in various sectors, including the health sector. Hospitals, as healthcare institutions that provide comprehensive individual healthcare services, including inpatient, outpatient, and emergency care, must adopt integrated information systems to improve service quality, efficiency, and effectiveness of services (Kuntoadi et al., 2026). The Hospital Management Information System (SIMRS) is an information and communication technology system that integrates and processes the entire hospital service process flow in the form of a coordination network, so that administrative and reporting procedures obtain precise and accurate administrative data (Abdullah et al., 2023). During the study period (January–February 2025), Minister of Health Regulation No. 82 of 2013 required hospitals to operate SIMRS and integrate it with relevant government health information systems. The success of adopting this information system is highly dependent on the quality of the system, quality of service, and perceived usability, which ultimately influence the satisfaction of users of the information system (Ernawatiningsih & Arizona, 2021).

One solution developed by the Ministry of Health of the Republic of Indonesia to support hospital digitization in Indonesia is the Generic Open Source Management Information System (SIMGOS). SIMGOS is an open-source SIMRS application designed to be adaptable by various hospitals, especially government hospitals in the regions, with modules covering patient registration, electronic medical records, pharmacy, laboratory, radiology, and administration (Pamungkas et al., 2026). The use of SIMGOS has been implemented in various hospitals in Indonesia, such as dr. MM Dunda Limboto Regional General Hospital (RSUD dr. MM Dunda Limboto), using SIMGOS version 2 since 2019, and is able to significantly increase the effectiveness of medical record data reporting compared to manual systems. The results of research by Abdullah et al. (2023) showed that the average reporting effectiveness value using SIMGOS 2 reached 133.80, higher than the manual system, which reached 78.10. The availability of compatible technology facilities and adequate infrastructure are important factors that facilitate organizations in adopting technology and increase competitiveness and operational efficiency (Rustariyuni et al., 2022).

Although SIMGOS offers various advantages as an integrated open-source system, its implementation in the field still faces multidimensional challenges. Pamungkas et al. (2026) identified a phenomenon in which SIMGOS V2 significantly improved operational efficiency but has not reached its full potential in clinical effectiveness due to incomplete system integration. Barriers include imperfect integration between modules, unstable network infrastructure, and user resistance. The context of digital transformation, commitment, and support from top management are absolute and crucial factors in overcoming internal obstacles and resistance to change (Rustariyuni et al., 2022). Furthermore, the completeness of work facilities has been shown to have a positive and significant correlation with the performance of medical and nursing staff in hospitals, thus directly impacting service quality (Albert et al., 2025). Given the complexity of these challenges, systematic evaluation through the PIECES framework is a crucial step (Ferdiana & Pramono, 2024; Sholehah et al., 2024)

dr. LM Baharudin, M. Kes Hospital in Muna Regency is one of the regional government hospitals that has implemented SIMGOS as part of its digital transformation efforts in healthcare services. Consistent with the experience of other hospitals, SIMGOS implementation at this hospital has faced various obstacles, including difficulties in adapting medical personnel to digital technology, changes in workflow, and the readiness of infrastructure and human resources. Management support through policies,

infrastructure provision, technical assistance, and user training is essential, as top management support and the quality of system services simultaneously influence user satisfaction in using the information system (Ernawatiningsih & Arizona, 2021). Effective leadership and adequate facilities play a strategic role in increasing the motivation and performance of medical personnel in providing satisfactory services (Albert et al., 2025). Based on the above description, this study is important for describing the use of SIMGOS at dr. LM Baharudin, M. Kes Hospital in Muna Regency using the PIECES method. The results of this study are expected to provide evidence-based recommendations for hospital management in optimizing the implementation of SIMGOS, so that the information system can function effectively as a tool to support decision-making and improve the overall quality of health services.

LITERATURE REVIEW

The SIMRS is a crucial component in integrating healthcare service flows, reporting, and administrative procedures to produce fast, precise, and accurate information (Al Afgani et al., 2024; Najib, 2025). To evaluate performance and user satisfaction with SIMRS, various studies have utilized the PIECES framework (Performance, Information, Economy, Control, Efficiency, and Service). This method has proven comprehensive in identifying system weaknesses and providing structured development recommendations (Agus et al., 2023; Alfiansyah et al., 2022). Furthermore, the combination of the PIECES method with the System Usability Scale (SUS) measures user satisfaction quantitatively and qualitatively, and the results serve as the basis for hospitals to optimize their systems (Wirayani et al., 2023)

In terms of performance and efficiency, the implementation of SIMRS has generally supported hospital operations, although technical challenges remain that hamper productivity. Al Afgani et al. (2024) found that several menus in SIMRS did not function optimally, including a lack of real-time bed availability information. This aligns with the findings of Agus et al. (2023), who noted that slow system loading still hampers the reporting and service process. In terms of efficiency, Alfiansyah et al. (2022) highlighted issues with hardware specifications and manual data input that slowed down the transaction process. However, Najib (2025) stated that after an adaptation period, SIMRS can be operated easily and efficiently, with the IT team playing a crucial role in maintaining the system during errors or network disruptions.

The Information and Service aspect focuses on data accuracy, information presentation, and system reliability in preventing errors. Najib (2025) reported that the accuracy of information generated by the SIMRS reached 85%, although problems with double entry still occurred. Wirayani et al. (2023) identified issues of double registration and data-storage errors that hampered service delivery, particularly in the Admission and Pharmacy departments. Regarding service, Al Afgani et al. (2024) emphasized the importance of adding notification or warning features when input errors occur or when the maximum file borrowing limit is reached, to prevent human error and improve overall system reliability.

In terms of economy and control, SIMRS has proven effective in reducing operational costs and maintaining institutional data security. Najib (2025) explained that the use of an internally developed SIMRS can minimize expenses, particularly in reducing paper use and improving time efficiency. Agus et al. (2023) support this, noting that although the economic aspect is considered very satisfactory, full digitization is still hampered by the habit of printing documents (paper-based). In terms of control, all studies agree that the SIMRS security system functions well by limiting access rights through usernames and passwords tailored to the responsibilities of each unit. However, Alfiansyah et al.

(2022) note that a single username should not be used simultaneously on multiple computers to maintain data integrity.

Current SIMRS evaluations also focus on system readiness for future technology integration, such as Electronic Medical Records (EMR). Agus et al. (2023) emphasized that streamlining modules and creating a dedicated EMR portal are essential to support the target of implementing an integrated and structured EMR. Furthermore, innovative support services are being developed to improve IT responsiveness, as Wirayani et al. (2023) demonstrated by creating a Telegram-based chatbot. This chatbot distributes satisfaction questionnaires, provides Standard Operating Procedure (SOP) guidance, and promptly handles technical complaints, all of which directly contribute to improved service efficiency and SIMRS user satisfaction.

RESEARCH METHOD

This study applies a qualitative approach with a case study design to evaluate the implementation of SIMGOS at RSUD dr. LM Baharudin, M. Kes from January to February 2025. This approach was chosen to understand the phenomenon of system evaluation in depth from the perspective of users and managers (Creswell, 2014; Moleong, 2007). The evaluation focused on the six dimensions of the PIECES framework (Performance, Information, Economic, Control, Efficiency, Service), which has been proven comprehensive in identifying system weaknesses and formulating structured development recommendations (Al Afgani et al., 2024).

Primary data were collected from five informants selected through purposive sampling and classified based on their roles and depth of understanding of the system. Key informants consisted of the IT Network Administrator and the Head of Installation, who provided macro and technical perspectives related to data security (Control), infrastructure, and system maintenance efficiency. Key informants included the Head of the Medical Records Unit and the Outpatient Polyclinic Coordinator, who served as key sources for evaluating data flow accuracy (Information), system performance (Performance), and operational economic impact. Supporting informants included Registration Staff, who provided a micro overview of daily challenges, response time (Response time), and service quality (Service) at the frontline level. This primary data was supplemented by secondary data in the form of SOP documents, activity logs, and system incident records (Sugiyono, 2019).

Data collection used in-depth semi-structured interviews, participant observation, and document review to ensure the validity of the information (Creswell, 2014). The data were then analyzed using the interactive model described by Miles et al. (2014), which includes the stages of data condensation, data presentation, and conclusion drawing. To ensure the reliability of the findings, data validity was tested using source triangulation and technical triangulation, namely by comparing statements between informant categories and matching them with the results of direct observations in the field (Moleong, 2007; Sugiyono, 2019).

RESULTS

Table 1. List of Informants: Overview of the Use of the SIMGOS

No.	Initials	Position	Age
1	AR	Outpatient Registration Staff	26 years old
2	WP	SIMGOS Network Manager (IT Admin)	29 years old
3	SB	Head of Recording Unit Medical	37 years old
4	EN	Karv. Poly (Poly Coordinator)	49 years old

5	WM	Head of IFRS (Head of Installation)	44 years old

The results of interviews with the five respondents (see Table 1) regarding the use of the SIMGOS application are presented as follows:

Performance
Based on data from interviews with SIMGOS administrators and registration staff at dr. LM Baharudin Hospital, M. Kes stated that:

> "SIMGOS processes both new and existing patient data very quickly. The system is directly connected to the clinic and other rooms, resulting in a more orderly and faster queue at the front office." (Informant AR/03-02-2025)

> "The SIMGOS we use at this hospital is a third-party operating system based in Makassar. To my knowledge, the system includes patient data, such as patient diagnoses and all outpatient data, all within the SIMGOS application. Furthermore, the application coordinates between departments, such as the radiology room and the lab, allowing effective communication between services. Therefore, I believe the data is well stored, and this application is highly needed by the hospital here." (Informant WP/05-02-2025)

Next, interviews were conducted with medical room operators, inpatient rooms, and polyclinic coordinators to obtain an overview of SIMGOS usage based on Performance:

> "In my opinion, the SIMGOS application is 100% utilized in this hospital. The system's functionality has been extremely helpful, from registration and diagnosis to medical records. This means that all medical record reporting required by the Ministry of Health, the health department, and the hospital itself is automatically captured in this application." (Informant SB/10-02-2025)

> "From what I've seen, the SIMGOS application meets the standards for supporting patient medical data and fully supports all hospital activities. The presentation and storage of data reports are consistent, from patient registration to diagnosis. From my perspective as a user, everything is very well coordinated." (Informant EN/05-10-2025)

> "I believe the SIMGOS application at this hospital has significantly supported the hospital in presenting and storing patient data reports. The standards are excellent, starting with patient registration, as we do, which connects to other medical rooms, making it easier and more efficient." (Informant WM/13-02-2025)

In terms of performance, the SIMGOS application has been working well and is coordinated across all units. This system uses a third-party provider based in Makassar and meets standards set by the Ministry of Health.

Information
In the PIECES method, information is an assessment of the information procedures presented by the application so that they can be improved and the quality of the information becomes better.

> "Patient data input during registration is accurate and can be read in real time in other units. There are no more lost paper forms, and the patient biodata

> we enter serves as a valid primary source of information for doctors." (Informant AR/03-02-2025)
>
> "From what I learned as the administrator of this system, the general public cannot access the SIMGOS application; only the hospital can access the data in SIMGOS... The information in the SIMGOS application is easy for officers to understand, and the stored database will always be the same in each unit because patient data for diagnosis must be accurate." (Informant WP/05-02-2025)
>
> "I think the information data from SIMGOS cannot be accessed by the general public because, as we all know, medical records are something that is very confidential... The information data from SIMGOS can be trusted because when a patient registers, they will get to fill in the patient's biodata through a resume." (Informant 3 SB/10-02-2025)
>
> "The data in SIMGOS is intended solely for medical personnel at this hospital. In general, the information in the SIMGOS application is accurate and properly verified. There will be no duplicate patient information." (Informant EN/05-10-2025)
>
> "The data contained in the SIMGOS application is intended solely for medical personnel. All information contained in SIMGOS is reliable and securely stored. Duplicate information in this application will not occur because the hospital always backs up data weekly." (Informant WM/13-02-2025)

Informationally, the SIMGOS application is intended solely for medical personnel. It contains comprehensive patient data, including personal details, diagnoses, and prescriptions, recorded in a resume, creating an accurate and verified patient database.

Economics

The third aspect of the PIECES method is economics; current procedures can be improved in terms of utility value, or what we might call the cost of implementing the system.

> "SIMGOS significantly reduces printing costs at the registration desk. We no longer use paper registration forms and manual medical cards; we print wristbands or barcodes when needed." (Informant AR/03-02-2025)
>
> "In my opinion, SIMGOS can minimize this hospital's expenses... Unlike before, with the SIMGOS application, recording all patient medical records required a lot of paperwork. This, of course, required a lot of money." (Informant WP/05-02-2025)
>
> "The SIMGOS application saves administrative costs and allows for more efficient use of time spent on medical administration." (Informant SB/10-02-2025)
>
> "In terms of expenditure, SIMGOS is very helpful for hospitals because it reduces administrative costs, such as purchasing paper for hospital documents." (Informant EN/11-02-2025)
>
> "In my opinion, SIMGOS has helped the hospital reduce its budget because,

> with this system, departments such as administration no longer use paper and instead use technology." (Informant WM/13-02-2025)

From an economic perspective, the SIMGOS application has minimized hospital expenses (especially paper and stationery costs), made time more efficient, and does not require high costs in terms of maintenance.

Control

The control aspect for assessing existing procedures can still be improved so that the quality of control becomes better, and its ability to detect errors/fraud becomes better too.

> The automated system prevents duplication of medical record numbers. If the same patient registers again, the system immediately issues a warning and pulls up the old data, preventing duplicate registrations at the registration desk." (Informant AR/03-02-2025)

> I think the data in this SIMGOS application cannot be lost... The control carried out on this SIMGOS application can only be accessed by hospital employees... If the same patient returns to the hospital, of course the data already exists, so there will be no data differences." (Informant WP/05-02-2025)

> The hospital IT manager carries out SIMGOS control... In my opinion, the SIMGOS application is very easy to use and understand." (Informant 3 SB/10-02-2025)

> The data in the SIMGOS application cannot be lost unless the hospital itself deletes it... I think controlling the SIMGOS application is very easy to do, both in storing databases and creating patient databases." (Informant EN/11-02-2025)

> The data in the SIMGOS application is always safe... For human errors that occur, the hospital is always notified by the SIMGOS management if there is a double recording, so we will respond quickly to fix it." (Informant WM/13-02-2025)

SIMGOS administrators conduct controls by updating data to prevent duplicate entries. Data is stored securely and backed up, and system failures generally only occur due to inadequate network support.

Efficiency

Efficiency is an aspect of assessing whether existing procedures can still be improved so that operational efficiency can be increased, and it must be superior to manual systems.

> "Searching for old patient data takes mere seconds. We no longer need to dig through filing cabinets, dramatically improving time efficiency in the registration department." (Informant AR/03-02-2025)

> "In terms of time efficiency, I think the process in the SIMGOS application can quickly disseminate information to officers... the data that the hospital has issued from the SIMGOS application is the real results that occurred to the patient." (Informant WP/05-02-2025)

> "Regarding wasted time, I think the SIMGOS application saves time; for example, if a patient comes but hasn't been seen, they don't need to re-enter their data." (Informant SB/10-02-2025)

> "With the SIMGOS application, our processing time for viewing patient data has become more efficient. We don't waste much time. Unlike manual processing, we don't have to store files in cabinets." (Informant EN/11-02-2025)

> I think the SIMGOS app gives us a lot of free time. As hospital staff, we can easily search for patient data using this app (Informant WM/13-02-2025).

SIMGOS significantly assists staff in locating patient data. Time efficiency has increased dramatically by eliminating manual processes that slow work.

Service

Service is a process for assessing whether existing services can be improved in their ability to achieve higher service quality.

> "Front-office service has improved. Patients feel more valued because the administrative process is faster, and staff can focus more on providing friendly information because they aren't busy with paperwork." (Informant AR/03-02-2025)

> "Of course, we always update the system in the SIMGOS application so that the application's performance is always in good condition... In this SIMGOS application system, it has served various units in this hospital and is very easy to learn." (Informant WP/05-02-2025)

> "The SIMGOS application has been very helpful in recording patients at this hospital, as I mentioned earlier; everything is included in the resume. I find it very easy to use." (Informant SB/10-02-2025)

> "The system within the application is always updated when a new version is available. This makes it easier for us medical staff to record patient information, which then becomes a highly accurate source of information." (Informant EN/11-02-2025)

> "I think, of course, this application will always be updated... Meanwhile, to learn this SIMGOS application, I think it is very easy and simple for us to use in the world of work in this hospital." (Informant WM/13-02-2025)

The SIMGOS application requires constant updates to ensure optimal performance. This has made the system easier for staff to use and has directly improved the quality of patient service at dr. LM Baharudin, M. Kes Hospital in Muna Regency.

PIECES Framework-Based Data Analysis Table

The following Table 2 and Figure 1 are data reduction and verification of conclusions based on the results of interviews with the five informants:

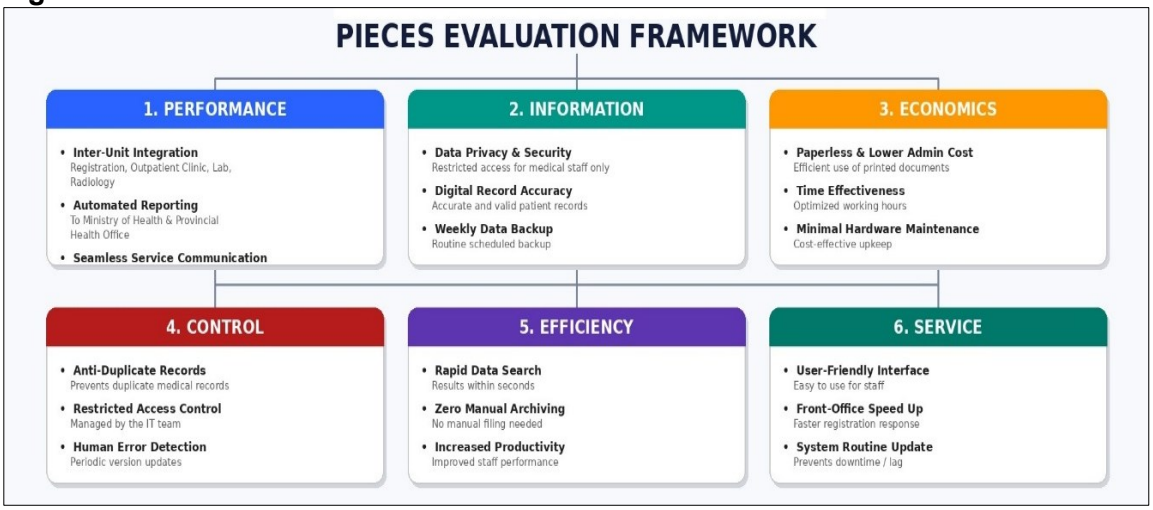
Table 2. PIECES Framework-Based Data Analysis

Indicator	Data Collection	Data Reduction	Data Display	Verification/ Conclusion

Performance	Integrated system between units (Registration, Polyclinic, Lab, Radiology). Reporting automatic synchronized with Ministry of Health	System Integration and Reporting Automation	The application works 100% supporting the workflow from registration to diagnosis, facilitating real-time communication between service rooms.	SIMGOS performance is good, standardized, and coordinated to meet the operational needs of hospitals.
Information	Data is accessible only to medical personnel. The database is centralized, accurate, and backed up weekly. There is no duplicate data.	Data Security and Accuracy of Medical Information	Patient information is confidential, valid, and stored in the form of a digital resume that can be trusted for its accuracy by doctors and nurses.	The quality of the information is highly accurate, secure, and verified. Access is strictly restricted to protect patient privacy.
Economics	Eliminate the use of paper forms, manual medical cards, and stationery. system only focused on hardware	Operational and Administrative Cost Efficiency	Digitization significantly reduces paper administration costs. System maintenance is less expensive because it's cloud/web-based	SIMGOS has been proven to reduce hospital expenses and is efficient in terms of system implementation costs.
Control	The system prevents duplication of Medical Records. Access limited by IT. Human error direct detected and notified by the system	Duplication Control and Access Security	The system has strict controls against double-logging and public access. Update routine version is done For prevent error system	System controls are excellent at detecting errors, preventing data duplication, and maintaining database security
Efficiency	Searching for old patient data takes just seconds, eliminating the need to dig through physical archives	Speed Manual Process Response and Elimination	Medical data searches have become much faster. No Again depend on the archive physique	Operational efficiency has increased dramatically. The system significantly outperforms manual

				methods in terms of work speed
Service	Registration queues are faster. Staff can focus more on serving patients without having to manually record their data. Update routine application	Improvement Quality Excellent service)	Ease of use (user-friendly) and regular system updates make officers faster and friendlier in serving patients	SIMGOS directly improves the quality of hospital services through speed and accuracy of service

Figure 1. PIECES Framework Evaluation



DISCUSSION

An evaluation of SIMGOS implementation at RSUD dr. L.M. Baharudin, M. Kes, conducted using the PIECES framework, reveals that the system operates at a high level of maturity. Regarding Performance and Efficiency, SIMGOS has successfully transformed conventional workflows into a real-time integrated digital ecosystem spanning service units from the front office and outpatient clinics to medical support services. The shift from physical record retrieval to digital searches that take mere seconds has drastically reduced waiting times and eliminated operational bottlenecks. In terms of Information and Control, the system ensures data integrity through restricted access for authorized medical personnel and automated features that prevent duplicate medical record numbers. The centralized database serves as a single source of truth, mitigating the risk of clinical errors caused by data inconsistencies. An analysis of the Economics aspect highlights a paradigm shift toward sustainable cost efficiency; the digitization of forms and patient cards has significantly lowered operational budgets for stationery and paper supplies. Ultimately, these technical advantages culminate in improved Service quality; system automation alleviates the cognitive and administrative burden on staff, allowing more room for human-centric interaction and excellent patient care, all supported by an adaptive system.

These research findings stand in stark contrast to previous studies that highlighted obstacles in health information system implementation. On performance and efficiency, this study demonstrates a system that overcomes the constraints reported by Agus et al. (2023) and Citraningtyas & Susena (2025), including slow loading times, inadequate

hardware, and network connectivity issues that hindered response times. SIMGOS demonstrated superior reliability in maintaining service continuity without significant downtime. Furthermore, these findings address weaknesses in information accuracy and access control reported in previous PIECES evaluations, including duplicate medical records linked to inconsistent staff data entry and the use of username-and-password restrictions (Aida et al., 2025; Al Afgani et al., 2024). In contrast, SIMGOS applies controls to prevent duplicate records and restrict access to authorized users.

Furthermore, an economic analysis in this study shows a more comprehensive paperless implementation than prior reports by Aida et al. (2025) and Dinata & Deharja (2020), which describe continued reliance on paper forms and medical record folders. SIMGOS's success in minimizing these variable administrative costs reinforces the argument that effective technology investment pays for itself through long-term operational savings. Regarding service delivery, Kuntoadi et al. (2026) describe data and information exchange as part of hospital medical-record services. In this study, SIMGOS supports coordination across hospital units and helps staff focus on clinical care.

From a managerial perspective, the successful implementation of SIMGOS suggests that digital transformation in advanced healthcare facilities should focus not only on infrastructure procurement but also on optimizing the integration of service modules. Hospital management can view SIMGOS as a model for technology adoption, demonstrating that cost efficiency, specifically the elimination of paper and office supplies, can go hand-in-hand with improved service quality. Operationally, the practical implications are evident in the shifting roles of medical record and registration staff, shifting from roles previously occupied with manual administrative tasks such as sorting through archives and paperwork to becoming data managers and facilitators of patient care. This necessitates periodic hospital training covering not only system operation but also digital ethics and data security. From a policy perspective, SIMGOS's strict access controls and data-duplication prevention measures show the hospital's alignment with national regulations on medical record confidentiality and health data interoperability standards; this, in turn, shields the institution from risks associated with administrative errors and medical disputes.

The novelty of this study lies in the holistic evaluation of a SIMGOS-based system that has reached a high level of maturity in integrating clinical and administrative flows, in contrast to the majority of previous studies that still focus on evaluating readiness or basic obstacles to SIMRS implementation. This study offers a new perspective that hospital management information systems have transformed from mere data recording tools to the backbone of clinical coordination that directly affects economic efficiency and the quality of humanistic interactions between staff and patients. In addition, this study fills the literature gap by showing that classic obstacles such as duplication of medical records and data leaks due to human error can be overcome preventively through system design that has alert features and role -based access control, without having to always rely on expensive commercial systems, but through optimization of open-source systems managed with good governance.

CONCLUSION

Implementation of SIMGOS at dr. LM Baharudin, M. Kes has been running optimally based on the PIECES framework. This system has integrated real-time workflows (Performance and Efficiency), ensured the security and validity of patient data (Information and Control), reduced operational costs through digitalization (Economics), and improved the quality of service to patients (Service). SIMGOS has transformed from a mere recording tool into the backbone of efficient and sustainable clinical coordination.

LIMITATION

This study was limited to a single hospital site with five qualitative informants, so the findings may not be generalizable to healthcare facilities with different characteristics. Furthermore, the study did not measure a direct quantitative impact on patient satisfaction indexes or other specific clinical performance indicators.

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DECLARATION OF CONFLICTING INTERESTS

The authors declare no conflict of interest in this research. The study was conducted independently without any influence, pressure, or special funding from any party that could affect the objectivity of the research results.

REFERENCES

Abdullah, I. S., Poiyo, R., & Hatibie, T. (2023). The effectiveness of reporting medical records before and after using SIMRS in RSUD Dr. M. M. Dunda Limboto. *Jurnal Ilmiah Dr. Aloei Saboe, 3*(1), 76–87. https://doi.org/10.47918/jias.v10i1.288

Agus, I. P. A. Y., Permana, S., Ayu, G., Sutrisnawati, E., Ketut, N., Rsup, J., & Denpasar, S. (2023). Analysis of hospital management information system (SIMRS) and its relation to the readiness of electronic medical record (RME) implementation in RSUP. Sanglah Denpasar. *Jurnal Health Sains, 4*(7), 74–81. https://doi.org/10.46799/jhs.v4i7.1022

Aida, A. N. A., Setiyawati, N., & Sumarah, S. (2025). Tinjauan pelaksanaan sistem informasi pendaftaran rawat jalan menggunakan metode PIECES di fasilitas kesehatan tingkat lanjut. *Journal of Health Information Management and Medical Record, 1*(1), 35–40. https://doi.org/10.29238/himmr.v1i1.2154

Al Afgani, A. S., Indira, Z. N., Nadi, D. T., & Marini, B. (2024). Analysis implementation of hospital management information system (SIMRS) at place of inpatient registration (TPPRI) using the PIECES method at the Ajibarang Government Hospital. *Indonesian Journal of Electronics, Electromedical Engineering, and Medical Informatics, 6*(2), 85–92. https://doi.org/10.35882/ijeeemi.v6i2.352

Albert, A., Rianse, U., Samdin, S., Kusnan, A., & Juliana, N. (2025). SWOT analysis as a strategy for enhancing nursing officer performance through leadership, rewards, and facilities. *Asia Pacific Journal of Management and Education, 8*(1), 136–152. https://doi.org/10.32535/apjme.v8i1.3843

Alfiansyah, G., Pratama, M. R., Swari, S. J., Suryawiyanto, I. R., & Nikmah, F. (2022). Evaluation of hospital management information systems in research units using the PIECES method. *JMMR (Jurnal Medicoeticolegal dan Manajemen Rumah Sakit), 11*(3), 189–199. https://doi.org/10.18196/jmmr.v11i3.15833

Citraningtyas, Y. S., & Susena, E. (2025). Assessment of health information system implementation using PIECES method: A case study of SI-KERIS at RSUD Dr. R. Soedjono Selong. *Jurnal Ners, 9*(2), 3174–3179. https://doi.org/10.31004/jn.v9i2.44483

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publications.

Dinata, F. H., & Deharja, A. (2020). Analisis SIMRS dengan metode PIECES di RSU Dr. H. Koesnadi Bondowoso. *Jurnal Kesehatan, 8*(2), 106–117. https://doi.org/10.25047/j-kes.v8i2.155

Ernawatiningsih, N. P. L., & Arizona, I. P. E. (2021). User satisfaction of accounting information system using multiple linear regression analysis. *International Journal of Accounting & Finance in Asia Pasific, 4*(3), 9–16. https://doi.org/10.32535/ijafap.v4i3.1201

Ferdiana, U. F., & Pramono, A. E. (2024). Evaluating user satisfaction with hospital management information systems: A PIECES framework analysis at Wates General Hospital. *Journal of Intelligent Computing & Health Informatics, 5*(1), 16–24. https://doi.org/10.26714/jichi.v5i1.13317

Kuntoadi, G. B., Sucipto, S., Firmansyah, M. P., Lestari, S., Utama, T., Rusdiana, I., Christin, R., & Maulina, F. C. (2026). Pelayanan rekam medis di RSU Fatmawati: Pengabdian masyarakat oleh civitas akademika Prodi D3 RMIK STIKes Widya Dharma Husada Tangerang. *Jurnal Abdi Masyarakat, 7*(1), 61–68. https://doi.org/10.52031/jam.v7i1.1358

Miles, M. B., Huberman, A. M., & Saldaña, J. (2014). *Qualitative data analysis: A methods sourcebook* (3rd ed.). SAGE Publications.

Moleong, L. J. (2007). *Metodologi penelitian kualitatif*. Remaja Rosdakarya.

Najib, K. (2025). Analisis sistem informasi manajemen rumah sakit di Rumah Sakit Gigi dan Mulut UGM Prof. Soedomo Sleman Daerah Istimewa Yogyakarta. *ALBAMA: Jurnal Bisnis Administrasi dan Manajemen, 18*(1), 1–16. https://jurnal.amayogyakarta.ac.id/index.php/albama/issue/view/28

Pamungkas, R. Y., Sampurno, E., & Nurunniyah, S. (2026). Studi fenomenologi penggunaan aplikasi sistem informasi manajemen rumah sakit dalam meningkatkan efektivitas dan efisiensi pelayanan di RS Universitas Tanjungpura. *Indonesian Journal of Islamic Jurisprudence, Economic and Legal Theory, 4*(1), 1063–1072. https://doi.org/10.62976/ijijel.v4i1.1767

Rustariyuni, S. D., Pudjiharjo, M., Burhan, M. U., & Satria, D. (2022). Case study of successful utilization of digital technology innovations determinants of cooperative institutions in Bali: The impact of the COVID-19 pandemic. *International Journal of Applied Business and International Management, 7*(3), 1–20. https://doi.org/10.32535/ijabim.v7i3.1789

Sholehah, F. P. F., Iswandi, I., & Peranginangin, J. M. (2024). Development and evaluation of drug management information system in Mijen Community Health Center Demak. *Jurnal Manajemen dan Pelayanan Farmasi (Journal of Management and Pharmacy Practice), 14*(1), 51–63. https://doi.org/10.22146/jmpf.82802

Sugiyono, S. (2019). *Metode penelitian kuantitatif, kualitatif, dan R&D*. Alfabeta.

Wirayani, N. A., Suarjaya, I. M. A. D., & Buana, P. W. (2023). SIMRS analysis using SUS and PIECES for user satisfaction (case study: XYZ Hospital). *Journal of Computer Science and Informatics Engineering (J-Cosine), 7*(1), 52–59. https://doi.org/10.29303/jcosine.v7i1.500