Jurnal Kesehatan Vokasional, Vol. 10 No. 2 (Mei 2025)
ISSN 2541-0644 (print), ISSN 2599-3275 (online)
DOI https://doi.org/10.22146/jkesvo.106279

The Influence of Digital Transformation and Information Management on the Efficiency of Hospital Services

Pengaruh Transformasi Digital dan Manajemen Informasi terhadap Efisiensi Layanan Rumah Sakit B

Muhamad Bayhaqi[1]✉, Asri[2], Irwan Syahrir[3], Pipit Festi Wiliyanarti[1]
[1]Magister of Hospital Administration, Muhammadiyah University Surabaya, Indonesia
[2]Faculty of Nursing, Muhammadiyah University Surabaya, Indonesia
[3]Faculty of Engineering, Muhammadiyah University Surabaya, Indonesia

ABSTRACT

Background: Digital transformation in healthcare aims to enhance service quality and efficiency. However, implementation of Hospital Information Systems (HIS), Electronic Medical Records (EMR), and integrated health information systems still faces various obstacles, including infrastructure limitations, low digital literacy among healthcare professionals, and data security concerns. Evaluating the effectiveness of digitalization and its influencing factors is essential.

Objective: This study aims to analyze the impact of digital transformation and information management on healthcare service efficiency at Hospital B.

Methods: This research employed a quantitative correlational approach using Likert scale questionnaires. A total of 57 respondents comprising healthcare professionals and management staff were selected through purposive sampling. Data were analyzed using multiple linear regression after validity, reliability, and classical assumption tests.

Results: The majority of respondents were female (63%), had worked for >10 years (58%), and held functional positions (62%). Digital transformation did not significantly affect service efficiency ($p = 0.432$), whereas information management showed a significant impact ($p = 0.012$). Both variables explained 19.8% of the variation in service efficiency ($R^2 = 0.198$).

Conclusion: Hospitals are advised to prioritize strengthening information management through human resource capacity building, information system integration, and digital infrastructure development. Further research should explore other variables such as organizational culture and digital leadership.

***Keywords*:** Digital Transformation, Information Management, Service Efficiency, Hospitals, SIMRS

ABSTRAK

Latar Belakang: *Transformasi digital di sektor kesehatan bertujuan untuk meningkatkan mutu dan efisiensi layanan. Namun, implementasi SIMRS, RME, dan SATUSEHAT masih menghadapi berbagai hambatan, seperti keterbatasan infrastruktur, rendahnya literasi digital tenaga kesehatan, serta isu keamanan data. Evaluasi terhadap efektivitas digitalisasi dan faktor-faktor yang memengaruhinya menjadi penting.*

Tujuan: *Penelitian ini bertujuan menganalisis pengaruh transformasi digital dan manajemen informasi terhadap efisiensi layanan kesehatan di Rumah Sakit B.*

Metode: *Penelitian ini menggunakan pendekatan kuantitatif korelasional dengan kuesioner skala Likert. Sebanyak 57 responden dari tenaga kesehatan dan manajemen dipilih secara purposive sampling. Data dianalisis menggunakan regresi linier berganda setelah melalui uji validitas, reliabilitas, dan asumsi klasik.*

Hasil *Mayoritas responden adalah perempuan (63%), memiliki masa kerja >10 tahun (58%), dan menduduki posisi fungsional (62%). Transformasi digital tidak berpengaruh signifikan terhadap efisiensi layanan ($p = 0,432$), sedangkan manajemen informasi berpengaruh signifikan ($p = 0,012$). Kedua variabel menjelaskan 19,8% variasi efisiensi layanan ($R^2 = 0,198$).*

Kesimpulan: *Rumah sakit disarankan memprioritaskan penguatan manajemen informasi melalui peningkatan kapasitas SDM, integrasi sistem informasi, dan pengembangan infrastruktur digital. Penelitian lanjutan disarankan mengeksplorasi variabel lain seperti budaya organisasi dan kepemimpinan digital.*

Kata Kunci: *Transformasi Digital, Manajemen Informasi, Efisiensi Layanan, Rumah Sakit, SIMRS*

✉Corresponding author: embayhaqi@gmail.com

Submitted 26 April 2025 **Revised** 19 May 2025 **Accepted** 26 May 2025

https://jurnal.ugm.ac.id/jkesvo
Published online May 31, 2025

INTRODUCTION

Digital transformation in healthcare represents a strategic initiative aimed at enhancing hospital service efficiency through the implementation of information technology and management systems that improve the accessibility, accuracy, and timeliness of healthcare delivery (Santoso et al., 2025). Despite its potential benefits, implementation faces significant challenges including infrastructure readiness, healthcare professionals' technological competence, and regulatory frameworks governing patient data security and privacy (Pesqueira et al., 2025).

Health information management systems play a crucial role in facilitating evidence-based decision-making processes. Suboptimal management of these systems can lead to operational inefficiencies, including service delays and documentation errors that potentially compromise the quality of hospital care (Oloyede, et al., 2023).

Patients derive substantial benefits from healthcare digitization, including convenient access to electronic medical records and telemedicine services (Izza et al., 2024). From a regulatory perspective, governmental bodies are responsible for policy formulation, infrastructure provision, and enforcement of security standards and data protection protocols within health information systems. The successful digital transformation of the healthcare sector depends significantly on the synergistic collaboration and preparedness of all stakeholders (Pesqueira et al., 2025). The ecosystem of hospital healthcare services, digital transformation, and information management encompasses diverse stakeholders, including healthcare professionals, hospital administrators, patients, and governmental regulatory authorities (Santoso et al., 2025).

On a global scale, healthcare digital transformation has become a priority, particularly following the COVID-19 pandemic, which catalyzed medical technology adoption. Developed nations such as the United States and United Kingdom have extensively implemented Electronic Health Records (EHR) systems and developed Artificial Intelligence (AI) applications to enhance diagnostic capabilities and patient data management. Concurrently, telemedicine services have experienced significant growth, facilitating remote medical consultations in geographically underserved regions (Saputra Mokoagow et al., 2024).

In Indonesia, healthcare digitization as outlined in the Blueprint for Digital Health Transformation 2024 emphasizes the implementation of Hospital Management Information Systems (SIMRS) and the SatuSehat platform for cross-facility data integration. However, the transformation process encounters substantial impediments including limited technological infrastructure, inadequate digital literacy among healthcare professionals, and persistent data security concerns (Kemenkes, 2021).

The planning phase of digital transformation frequently reveals deficiencies in infrastructure development and localized strategic planning (Erwin et al., 2023). Implementation phases encounter resistance from healthcare personnel, system complexity issues, and software interoperability challenges (Naurah et al., 2024), while evaluation efforts are compromised by inadequate monitoring mechanisms and the absence of standardized performance indicators (Malahayati & Syamsuar, 2022).

Hospital B was selected as the research site due to its recent establishment in early 2024, ongoing service digitization initiatives, and evolving information management framework. These conditions present an optimal context for

investigating the interrelationships between digital transformation, information management, and service efficiency. This research aims to establish an empirical foundation for policymakers in formulating technology-enhanced healthcare service improvement strategies.

Research conducted by Santosa et al. (2023) demonstrates that Hospital Management Information Systems can effectively reduce patient waiting times and enhance medical record accuracy. Rambe et al. (2025) emphasized the contribution of information systems to achieving the quadruple aim framework, encompassing service quality improvement, cost efficiency, healthcare provider well-being, and patient satisfaction.

A. Digital Transformation

Digital transformation constitutes a systematic organizational change facilitated through digital technology utilization to enhance operational efficiency, service effectiveness, and competitive advantage (Santoso et al., 2025). Within the healthcare sector, digital transformation expands medical service accessibility, accelerates patient data management processes, and improves the quality of data-driven decision-making (Syahwali et al., 2023).

Organizational digital transformation encompasses several principal dimensions, including the technological dimension, which involves the adoption of software solutions and digital infrastructure such as hospital information systems and artificial intelligence applications for patient data analytics (Dameria et al., 2025). The organizational dimension addresses structural readiness, digital leadership capabilities, and change management strategies in response to technological innovation (Santoso et al., 2025). The human resources dimension focuses on workforce competency development for technological adaptation and organizational culture transformation to support digitalization initiatives (Mubarokah & Pribadi, 2025). The policy and regulatory dimension ensures compliance with legal standards and data protection requirements in digital system implementation (Pesqueira et al., 2025).

B. Information Management

Information management represents a systematic process encompassing the collection, storage, processing, and dissemination of information to support effective and efficient organizational decision-making (Maha et al., 2025). n the healthcare context, Hospital Management Information Systems (SIMRS) implementation has facilitated electronic medical record management, patient administration processes, and digital healthcare service optimization (Fladyan Grace Wulur et al., 2023).

The organizational information management concept is underpinned by Management Information Systems Theory, which emphasizes technology's pivotal role in enhancing information management efficiency and effectiveness (Westerhof et al., 2025). This theoretical framework posits that organizations must develop integrated information systems to systematically manage data and support evidence-based decision-making processes (Ennajeh et al., 2025). Additionally, the Knowledge-Based View conceptualizes information as a strategic organizational asset requiring proper management to create sustainable competitive advantage (Syahwali et al., 2023).

Organizational information management can be categorized into several key dimensions. The technology dimension encompasses hardware and software components supporting data management and information security systems (Senthilrajah & Ahangama, 2025). he organizational dimension involves policies, management structures, and

strategies for effective information governance (Silitonga, 2019). The human resources dimension addresses workforce competencies in information system utilization and organizational culture supporting information digitization (Chang et al., 2012). The regulatory and policy dimension ensures compliance with legal and ethical standards in data management and protection, particularly in sectors handling sensitive information such as healthcare (Pesqueira et al., 2025).

Effective information management substantially contributes to operational efficiency, decision-making acceleration, and organizational transparency enhancement (Westerhof & Bos, 2025). Within the healthcare sector, structured information systems enable real-time patient data access, reduce information redundancy, and strengthen inter-departmental coordination, thereby improving care quality and patient safety outcomes (Pesqueira et al., 2025; Putri et al., 2025).

C. Efficiency of Health Services in Hospitals

Healthcare efficiency in hospital settings refers to the optimization of resources, time, and human capital to deliver high-quality medical services while minimizing costs (Santosa et al., 2023). This concept aims to ensure effective operation across all healthcare service aspects without compromising patient care quality (Mubarokah & Pribadi, 2025). Hospital service efficiency can be evaluated through various metrics, including patient waiting time duration, medical facility utilization rates, and healthcare provider-to-patient ratios (Biantara & Dety Mulyanti, 2023).

The healthcare efficiency concept is grounded in production efficiency theory, which stipulates that hospitals must optimally allocate resources to maximize service output while controlling costs (Pesqueira et al., 2025). Lean Healthcare theory emphasizes waste elimination within healthcare systems, including patient waiting time reduction and administrative process simplification, to enhance operational efficiency (Westerhof et al.,2025). The integrated health system theory highlights the importance of information technology integration and service unit coordination in improving hospital service efficiency and effectiveness (Ahmad Juan Syahwali et al., 2023).

Effective information management ensures accurate and real-time data processing, enabling healthcare professionals to make timely and appropriate clinical decisions (Ponggele et al., 2025). Well-implemented information systems enhance service efficiency through patient waiting time reduction, administrative process acceleration, and medical facility optimization (Naurah et al., 2024). Consequently, optimal digital transformation implementation improves information management practices and service efficiency from operational, technological, and financial perspectives (Vissers et al., 2022).

Based on this theoretical and empirical foundation, the present study aims to analyze the influence of digital transformation and information management on healthcare efficiency in hospital settings, with particular emphasis on digital technology's role in enhancing information management practices and operational efficiency. The research findings are expected to inform evidence-based recommendations for hospital administrators regarding effective and sustainable digitalization strategies.

MATERIALS AND METHODS

This investigation employed a quantitative methodology with a cross-sectional survey design to examine the relationship between digital transformation, information management, and healthcare service efficiency. Data collection was conducted through

structured questionnaires administered to healthcare professionals and hospital administrative personnel, consistent with methodological approaches established in previous studies by Zhang et al., (2025) and Syahwali et al., (2023).

A. Research Design

A correlational quantitative design utilizing multiple linear regression analysis was implemented to assess the influence of digital transformation and information management on healthcare service efficiency (Pandey et al., 2024). Prior to regression analysis, the measurement instruments underwent rigorous validity and reliability testing to ensure measurement precision (Hardani, et. al., 2020). Additionally, classical assumption testing—including normality, multicollinearity, and heteroscedasticity assessments—was performed to verify the statistical adequacy of the regression model (Muin, 2023).

The quantitative correlational approach facilitated simultaneous examination of inter-variable relationships, with data collection conducted during a defined three-month period (October-December 2024) (Nurfalah et al., 2023). This timeframe was specifically allocated for data acquisition and preliminary analysis, while research proposal development, comprehensive data processing, and manuscript preparation were conducted outside this interval to ensure analytical thoroughness and methodological rigor.

B. Population and Sample

The study population comprised healthcare professionals and managerial personnel directly engaged in service delivery and information management processes at Hospital B, including physicians, nursing staff, health information management specialists, administrative personnel, and information technology managers. This population was selected based on their professional knowledge and experiential understanding of digital transformation implementation and information system management that influence healthcare service efficiency. According to Hospital B's 2024 staffing records, the total eligible population consisted of 135 personnel.

The research sample was derived through purposive sampling, specifically targeting individuals with direct involvement in digital technology utilization and information management systems at Bhayangkara Hospital. Sample size determination employed the Slovin formula, calculating from the 135-person population with a 10% margin of error, yielding 57 respondents in accordance with quantitative research sampling principles (Duevel, 2020).

C. Data Retrieval Technique

Data collection was conducted via electronic questionnaire surveys distributed through Google Forms to healthcare professionals and hospital management personnel to evaluate the impact of digital transformation and information management on healthcare service efficiency (Creswell, 2018).

The instrument utilized a 5-point Likert scale to quantify respondents' perceptions regarding digital transformation, information management, and healthcare service efficiency (Muin, 2023). Purposive sampling was employed with specific inclusion criteria targeting healthcare institutions that had implemented digital systems (Sugiyono, 2020). Inclusion criteria encompassed healthcare practitioners and administrative personnel with minimum one-year employment duration, involvement in service provision or information system utilization, and willingness to complete the questionnaire. Exclusion criteria comprised inactive personnel, those declining participation, and respondents submitting incomplete questionnaires.

D. Research Instrumens

The primary research instrument consisted of a structured questionnaire employing a 5-point *Likert* scale to assess respondents' perceptions regarding digital transformation, information management, and healthcare service efficiency, with response options ranging from 1 (strongly disagree) to 5 (strongly agree). This measurement scale was selected for its capacity to capture nuanced response variations and facilitate robust quantitative analysis in socio-empirical research contexts (Sugiyono, 2020).

The Likert scale was selected for its ability to capture gradations in respondent agreement levels and generate quantitative data suitable for inferential statistical analysis (Sugiyono, 2020). Instrument development was grounded in theoretical frameworks and previous empirical investigations to ensure valid and reliable variable measurement. Validity testing confirmed that all measurement items demonstrated r-calculated values exceeding r-table threshold (0.261) with significance levels below 0.05. Reliability assessment yielded Cronbach's Alpha coefficients of 0.799 for digital transformation, 0.700 for information management, and 0.838 for service efficiency, all surpassing the 0.7 threshold, thereby establishing instrument reliability and applicability.

E. Data Analysis Technique

The analytical framework employed multiple linear regression to quantify the influence of digital transformation and information management on healthcare service efficiency (Pandey et al., 2024). Prior to regression analysis, the research instruments underwent validity and reliability assessment to ensure measurement accuracy (Hardani et al., 2020).

Furthermore, classical assumption testing encompassing normality, multicollinearity, and heteroscedasticity assessments was conducted to ensure the regression model satisfied fundamental statistical prerequisites (Muin, 2023).

F. Research Ethics

This investigation adhered to established research ethics principles to ensure responsible data collection and analysis processes in accordance with academic standards. The study obtained formal approval from the Education and Research Affairs department under the Subdivision of Binfung hospital (Reference Number: SRk/002/X/KES.23.2./2024/Rumkit).

All study participants provided *informed consent* following comprehensive explanation of research objectives, participant rights, and personal data confidentiality assurances (Sugiyono, 2020). Participation was strictly voluntary without coercion, and non-participation carried no adverse consequences. All collected data were managed with strict confidentiality and utilized exclusively for scientific purposes, in accordance with anonymity and confidentiality principles (Duevel, 2020).

RESULT AND DISCUSSION

Table 1. Demographics of Respondents on the Effect of Digital Transformation and Information Management on Health Service Efficiency at Bhayangkara Blora Hospital

No	Variables	Category	n	%
1.	Gender	Male	21	37
		Female	36	63
2.	Length of Service	< 5 Years	12	21
		5-10 Years	12	21
		> 10 Years	33	58
3.	Position	Functional	35	62
		Structural	11	19
		Management	11	19

This study analyzes the effect of digital transformation and information management on the efficiency of health services at Bhayangkara Hospital. The results of statistical analysis using Pearson correlation and multiple regression

showed a significant relationship between the variables tested, illustrating how the application of digital technology in hospital information systems affects operational efficiency and patient service quality.

The majority of respondents in this study were female (63%) with >10 years of service (58%) and occupied functional positions (62%), reflecting direct involvement in the operation and implementation of hospital information systems.

Training programs and adaptation to digital systems need to be adjusted to be optimally accepted by female workers, especially in health information management and digital services that demand speed Pedro and Tahapary (2025) emphasize the importance of gender inclusiveness in technology development to avoid acceptance gaps. Several studies show that female workers tend to focus more on aspects of ease of use, clarity of instructions, and responsive technical support, while men emphasize system efficiency and data processing speed (Morisna & Hidayat 2025; Pamungkas et al., 2023).

Most of the hospital workforce is highly experienced, with 58% of respondents having worked for more than 10 years. Long tenure reflects a deep understanding of the hospital system. Sinubu et al., (2021) stated that tenure increases organizational knowledge, while Kusumadewi et al. (2023) emphasized its role in decision making and information technology adaptation.

With long experience, they certainly have a good understanding of the procedures and challenges that exist in the workplace. According to Ahmad Juan Syahwali et al. (2023) , a workforce with a long tenure tends to have a deeper understanding of the systems and procedures that exist in the organization, and can play an important role in the experience-based decision-making process.

The use of information systems and digital services by hospital staff is strongly influenced by their level of experience and readiness to adopt new technologies. A study by Ahmed et al. (2025) shows that staff who are already familiar with digital work processes tend to accept and utilize SIMRS more quickly and effectively, thus improving operational efficiency.

Hospitals need to have long experience in handling health service operations, so they understand the systems and procedures deeply (Tilahun et al., 2025) This supports the successful implementation of service digitization in hospitals. The dominance of functional personnel indicates the hospital's focus on technical efficiency and direct services, while fewer managerial roles reflect limited strategic support and management of organizational change (Zhao et al., 2024).

The proportion of workers with more than 10 years of experience and the dominance of functional positions reflect the stability of the workforce, which is a strategic asset to support the effectiveness of digital transformation and information management. Stable and adaptive organizations are better equipped to deal with change, accelerating the transformation process (Fadaie et al., 2023).

The regression model shows a moderate positive correlation between the independent and dependent variables with a value of R = 0.445 (Costigliola, 2019). However, the R^2 value of 0.198 indicates that only about 19.8% of the data variability can be explained by the model, while 80.2% is influenced by other factors outside the model, indicating limitations in explaining variability thoroughly (Widgery, 1988).

The lower Adjusted R^2 value (0.166) and the large Standard Error of the Estimate (3.912) indicate that this model is still not accurate in predicting the value of the dependent variable (Widgery, 1988). To improve accuracy, it is recommended to add more relevant independent variables

or use more complex regression techniques such as multivariate regression or *machine learning methods*. Thus, improving this model can improve the predictive and explanatory ability of existing data (Sugiyono, 2020).

Table 2. Regression Model Fit

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.445	0.198	0.166	3.912

Table 3. ANOVA Analysis

No.	Source	Sum of Squares	df	Mean Square	F	Sig.
1.	Regression	128.024	2	64.012	6.243	0.004
2.	Residuals	515.234	53	9.724		
3.	Total	643.258	55			

The *ANOVA* analysis results show that the regression model is statistically significant with p = 0.004. However, the *Sum of Squares Residual* value of 515,234 and *Mean Square Residual* of 9,724 indicate that there is variation in the data that is not explained by the model, so other factors need to be considered to improve prediction accuracy.

The F value of 6.243 indicates that this regression model explains data variability better than a model without independent variables. With a significant p value, this model is feasible to use because it statistically contributes to reducing data uncertainty (Sugiyono, 2020).

Table 4. Regression Coefficients

No.	Variables	Coefficient B	Std. Error	*t* Count	Sig. (*p*)
1.	Constant	20.815	2.934	7.094	0
2.	Digital Transformation (X1)	0.061	0.077	0.792	0.432
3.	Information Management (X2)	0.354	0.135	2.611	0.012

Based on the regression results, Digital Transformation (X1) has no significant effect on the efficiency of health services at Bhayangkara Hospital, with a p value = *0.432*, which is greater than *0.05*. This may be due to the suboptimal implementation of digital transformation or the lack of adequate understanding and training for medical personnel and hospital staff.

Research by Popa et al., (2018) shows that although organizations invest heavily in digital technologies, their impact is only felt if they are applied according to practical needs and accompanied by adequate training.

In contrast, Information Management (X2) was shown to have a significant influence on healthcare efficiency with a p value = *0.012*, which is less than *0.05*. This suggests that effective information management plays an important role in improving hospital operations. Good information management accelerates decision-making, improves response and strengthens coordination, making it important for hospitals to focus on information management to improve service performance and efficiency (Santosa et al., 2023).

Previous research shows findings that are relevant to the results of this study related to Digital Transformation (X1) and Information Management (X2) at Bhayangkara Hospital. Majeed et al. (2024) found that a good information management system improves coordination and efficiency of decision making, in line with the results that Information Management (X2) has a significant effect *(p = 0.012)* on service efficiency. Similar findings were put forward by Sihole et al. (2024) , which states that efficient information management can reduce medical errors and speed up response, thereby improving hospital operational efficiency.

Previous research has also consistently shown that digital

transformation and information management have an important role in improving the efficiency of healthcare services in hospitals (Santoso et al., 2025; Rambe et al., 2025) highlighted that good information systems contribute to achieving the quadruple aim, including improved service quality, cost efficiency, and patient satisfaction. Meanwhile, Putri et al., (2025) emphasized that the successful implementation of digital technology is highly dependent on the usability aspect and the availability of training for medical personnel, which are key factors in supporting hospital operational efficiency.

The results of this study on the contrary, for the Digital Transformation variable (X1) had no significant effect ($p = 0.432$), in line with the findings of Sariyildiz (2025) which shows that challenges such as unprepared infrastructure and lack of training often hinder the effectiveness of digitalization.

Zhang et al. (2025) also emphasized the importance of organizational readiness and training in the success of digital transformation. This suggests that without such support, the potential of digitalization is difficult to realize to its full potential.

The low influence of digital transformation in this study could also reflect the lack of integration between new technology and existing work processes. According to Aqil & Rumianti (2025), adjustments to work systems and organizational culture, digital technology is difficult to have a real impact on performance. Therefore, hospitals must ensure the thorough integration of digital innovations in the service process.

Robust information management enables real-time response and flexibility in hospital operations. Accurate information makes it easier for medical personnel to make quick and appropriate decisions, so investment in integrated information systems is essential to maintain the quality of health services (Westerhof & Bos, 2025).

CONCLUSION

This research shows that information management plays a significant role in improving service efficiency at Bhayangkara Hospital, while digital transformation has not had a significant impact. The success of digitalization depends on organizational readiness, such as infrastructure and workforce competencies. Therefore, strengthening information management through SOPs, staff training, and data security policies should be prioritized. Digital transformation needs to be carried out in a targeted manner with an integrated system, adequate infrastructure, and management commitment. These findings provide a strategic basis for the development of health services in the digital era.

LIMITATIONS OF THE RESEARCH

This research has several limitations, which are the basis for further research to expand the sample population and use other broader methods.

1. The sample of respondents was limited to one hospital, so the results may not be generalizable to other hospitals with different characteristics.
2. The use of perception-based questionnaires may lead to subjective bias from respondents.
3. This study used a correlational quantitative design so that it could not identify cause-and-effect relationships definitively.

REFERENCES

Ahmad Juan Syahwali, Bagas Piwari, Aris Prabowo, & Tata Sutabri. (2023). Transformasi Digital Untuk Pengembangan Pelayanan Kesehatan di Rumah Sakit. *Journal.Csspublishing*, *1*(5), 1770–1777.

Ahmed, N., Wahab, S. N., Othman, N., & Balasubramanian, S. (2025). A Sustainable eHealth Program to Enhance the Healthcare Sector. *Journal of Information Technology Management*, *17*(1), 131–148. https://doi.org/10.22059/jitm.2025.99928

Aisah, S., & Maharani, L. (2024). *Peran Sistem Informasi Manajemen Dalam Meningkatkan Efisiensi Rumah Sakit*. *4*(2), 283–292.

Al-saleem, A. I., & Aldakheel, M. K. (2024). *Barriers to Workforce-Driven Innovation in Healthcare*. *16*(10). https://doi.org/10.7759/cureus.72316

Ammarzuq, F. N. (2024). *Penerapan Metode Human Resources Scorecard Untuk Pengukuran Kinerja Pegawai di Rumah Sakit : Literature Review*. *4*, 2851–2862.

Aqil, M., & Rumianti, C. (2025). JURNAL E-BUSSINESS Digitalisasi Pelayanan dan Transformasi Digital Terhadap Kualitas Pelayanan RSUD Provinsi Sulawesi Barat. *JURNAL E-BUSSINESS*, *4*(2), 28–38.

Biantara, I., & Dety Mulyanti. (2023). Strategi Manajemen Informasi Layanan Kesehatan Di Rumah Sakit. *MANABIS: Jurnal Manajemen Dan Bisnis*, *2*(1), 10–18. https://doi.org/10.54259/manabis.v2i1.1544

Chang, C. S., Chen, S. Y., & Lan, Y. T. (2012). Motivating medical information system performance by system quality, service quality, and job satisfaction for evidence-based practice. *BMC Medical Informatics and Decision Making*, *12*(1). https://doi.org/10.1186/1472-6947-12-135

Costigliola, F. C. (2019). Library of Congress Cataloging in Publication Data. *Awkward Dominion*, 381–382. https://doi.org/10.7591/9781501721144-016

Creswell, John W.Mackiewicz. (2018). A Mixed-Method Approach. In *Writing Center Talk over Time*. Sage Publications, Inc. https://doi.org/10.4324/9780429469237-3

Dameria, K., & Jane, O. (2025). *Konteks Transformasi Digital di Sektor Usaha Kesehatan*. *5*(1), 75–87

Duevel, C. (2020). SAGE Research Methods. In *The Charleston Advisor* (Vol. 20, Issue 4). https://doi.org/10.5260/chara.19.4.38

Ellief Fariha Rahmawati, W. J. P. (2022). *Analisis Kepuasan Pasien Terhadap Kualitas Pelayanan dengan Teori Donabedian*. *2*, 67–74.

Ennajeh, L., Najjar, T., & Aloui, A. (2025). Digital Transformation through Artificial Intelligence in Organizations: A Systematic Literature Review. *Journal of Information Technology Management*, *17*, 55–80. https://doi.org/10.22059/JITM.2025.100697

Erwin, E., P, A. C., Pasaribu, A. W., Novel, N. J. A., Sepriano, Thaha, A. R., Adhicandra, I., Suardi, C., Nasir, A., & Syafaat, M. (2023). *Transformasi Digital* (Efitra & Y. A. Penyunting (eds.); Cetakan Pe, Issue June). PT. Sonpedia Publishing Indonesia.

Fadaie, N., Lakbala, P., & Ghanbarnejad, A. (2023). Impact of knowledge management on job satisfaction and organizational performance among healthcare employees: A structural equation modeling approach. *Health Science Reports*, *6*(9), 1–9. https://doi.org/10.1002/hsr2.1560

Fladyan Grace Wulur, Ida Fitriyani, & Vip Paramarta. (2023). Analisis Pengaruh Pemanfaatan Sistem Informasi Manajemen Pada Layanan Kesehatan Rumah Sakit: Literature Review. *Jurnal Ilmu Kedokteran Dan Kesehatan Indonesia*, *3*(2), 187–202. https://doi.org/10.55606/jikki.v3i2.1725

Hardani, Helmina Andriani, Jumari Ustiawaty, Evi Fatmi Utami, Ria Rahmatul Istiqomah, Roushandy Asri Fardani, Dhika Juliana Sukmana, N. H. A. (2020). Buku Metode Penelitian Kualitatif. In *Revista Brasileira de Linguística Aplicada* (Vol. 5, Issue 1).

Izza, A. Al, Lailiyah, S., & Izza, A. Al. (2024). Kajian Literatur : Gambaran Implementasi Rekam Medis Elektronik di Rumah Sakit Indonesia berdasarkan Permenkes Nomor 24 Tahun 2022 tentang Rekam Medis Literature review : Overview of the Implementation of Electronic Medical Records in Indonesian Hospitals. *Media Gizi Kesmas*, 549–562.

Kementerian Kesehatan Republik Indonesia. (2021). *Cetak Biru Strategi Transformasi Digital Kesehatan 2024*. *1*, 78.

Kusumadewi, N., Razak, A., & Mukhlis, N. (2023). Pengaruh Kepuasan Kerja Dan Kepemimpinan Transformasional Terhadap Kinerja Asuhan Keperawatan di Instalasi Rawat InapRSUD Labuang Baji Makassar. *Journal of Muslim Community Health (JMCH) 2023*, *4*(3), 222–239. https://doi.org/10.52103/jmch.v4i3.1232JournalHomepage:https://pasca-umi.ac.id/index.php/jmch

Le, T., Bishop, S., & Macrae, C. (2024). Human resource management in homecare in England: managing people for safe care during crisis. *BMC Health Services Research*, *24*(1). https://doi.org/10.1186/s12913-024-11842-y

Magdalena, S., Paramarta, V., Laksono, P. A., & Gusti, R. S. (2023). Pengembangan Sistem Informasi Sumber Daya Manusia Rumah Sakit. *Jurnal Anastesi : Jurnal Ilmu Kesehatan Dan Kedokteran*, *1*(3), 149–155.

Maha, R., Chaniago, S. N., Nasution, W. I. A., & Hajijah Purba, S. (2025). Sistem Informasi Manajemen Rumah Sakit (SIMRS) Untuk Jurnal Kesehatan dan Teknologi Medis (JKTM). *Jurnal Kesehatan Dan Teknologi Medis (JKTM)*, *07*(01), 8–14.

Majeed, R. A., Yamani, H. F., Alsharif, M. H., Sindi, S. S., Aljohani, R. Y., Kalkatawi, H. M., Alqiri, A. T., Hawsawi, H. S., Alabdali, M. H., & Noori, A. A. (2024). The Impact of Health Administration on Healthcare Quality: A Systematic Review of Effective Management Practices. *Journal of Ecohumanism*, *3*(7), 2909–2917. https://doi.org/10.62754/joe.v3i7.4687

Malahayati, M., & Syamsuar, D. (2022). Investigasi Hambatan dan Tantangan Penerapan Sistem Informasi Manajemen di Rumah Sakit. *Jurnal Teknologi Informasi Dan Ilmu Komputer*, *9*(5), 901–910. https://doi.org/10.25126/jtiik.2022944954

Mubarokah, L., Pribadi, K., Jember, U. M., Komunikasi, I., Digital, T., & Inovasi, T. D. (2025). *Analisis Upaya Dinas Komunikasi Dan Informatika (Diskominfo) Jember Dalam Mewujudkan Transformasi Digital Pelayanan Publik Di Pemerintahan Kabupaten Jember Analysis Of The Efforts Of The Jember Communications And Informatics Office (Diskominfo) In Rea*. *2*(1), 105–114.

Muin, A. (2023). *Metode Penelitian Kuantitatif*.

Morisna, T., & Hidayat, M. R. (2025). *Pengaruh Gender dan Team Work terhadap Efektivitas Kinerja Karyawan Rumah Sakit Harapan Sehat Meulaboh*. *11*(1), 87–96

Naurah, G., Simarmata, M., & Sidi Jambak, R. (2024). Hak dan Privasi Pasien Rumah Sakit di Era Digitalisasi. *COMSERVA : Jurnal Penelitian Dan Pengabdian Masyarakat*, *3*(12), 4798–4805. https://doi.org/10.59141/comserva.v3i12.1295

Nurfalah Setyawati, Hartyowidi Yuliawuri, S. R. (2023). Metodologi Riset Kesehatan. In *Eureka Media Aksara*. http://www.nber.org/papers/w16019

Oloyede, A.S., Igbinlade, A.S., Aina, O.O., & OPELE, J. . (2023). Satisfaction of health information managers with health information management system implementation in selected hospitals in Ogun State. *Journal of Applied Information Science and Technology*, *16*(2), 184–186.

Pamungkas, G., Tamara, M. D., & Rahmawati, P. (2023). Faktor-Faktor Yang Berhubungan Dengan Kinerja Petugas Unit Front Office Di Rumah Sakit Ibu Anak Limijati Kota Bandung Tahun 2022. *Jurnal Ilmu Kesehatan Immanuel*, *16*(2), 65–72. https://doi.org/10.36051/jiki.v16i2.191

Pandey, P. K., Tiwari, S. S., Debnath, I., & Gupta, M. (2024). *Role of Hospital Administrator in Medical and Clinical Operations in The Hospital*. *2*(12), 1957–1961. https://doi.org/10.5281/zenodo.14460983

Pedro, L., & Tahapary, B. (2025). Digital Transformation of Hospitals in Indonesia : Economic Analysis and Innovative Financing Models. *Researchgate.Net*, *January*. https://doi.org/10.13140/RG.2.2.15453.52966

Pesqueira, A., de Bem Machado, A., Bolog, S., & Costa, C. (2025). EU privacy law and B2B digital manufacturing platforms in mental health. *Innovation and Green Development*, *4*(1), 100196. https://doi.org/10.1016/j.igd.2024.100196

Ponggele, R. M., Paramata, V., Sofia, E., & Asnar, M. (2025). *Pengaruh Manajemen Talenta , Infrastruktur , dan Kompensasi terhadap Kunjungan Pasien di Rumah Sakit Umum Sinar Kasih Gereja Kristen Sulawesi Tengah Tentena Kabupaten Poso*. *5*, 5773–5789.

Popa, I., Ştefan, S. C., Morărescu, C., & Cicea, C. (2018). Research regarding the influence of knowledge management practices on employee satisfaction in the Romanian Healthcare System. *Amfiteatru Economic*, *20*(49), 567–582. https://doi.org/10.24818/EA/2018/49/553

Pratici, L., Francesconi, A., Lanza, G., Zangrandi, A., & Fanelli, S. (2023). The managerial role of healthcare professionals in public hospitals: a time-driven analysis of their activities. *BMC Health Services Research*, *23*(1), 1–11. https://doi.org/10.1186/s12913-023-09395-7

Putri, D. N., Purba, S. H., Layana, K., & Lubis, K. (2025). Tantangan dan Solusi dalam Implementasi SIMRS di Rumah Sakit Pemerintah di Indonesia Universitas Islam Negeri Sumatera Utara , Indonesia. *JRIKUF: Jurnal Riset Ilmu Kesehatan Umum*, *3*(Desember), 13–22. https://doi.org/10.57213/jrikuf.v3i1.480

Rambe, D. H., Lubis, M., Ritonga, N., & Purba, S. H. (2025). Solusi Teknologi SIMRS dalam Meningkatkan Kualitas Layanan Kesehatan Publik di Indonesia. *JRIKUF: Jurnal Riset*

Ilmu Kesehatan Umum, *3*(12), 33–43. https://doi.org/10.57213/jrikuf.v3i1.488

Romadoni, N. R., Purwaningtyas, L., Anggraini, N., Ramadani, L., & Agus Santoso, A. P. (2024). Implementasi Nilai-nilai Pancasila dalam Pelayanan Administrasi Kesehatan. *MARAS: Jurnal Penelitian Multidisiplin*, *2*(1), 89–93. https://doi.org/10.60126/maras.v2i1.133

Sadikin, M., Adtitya, E., Ihsan, M., & Lubis, H. N. (2024). Transformasi Digital Layanan Kesehatan Gigi dan Mulut Melalui Sistem Berbasis Web. *CORAL Community Service Journal*, *3*(2).

Santosa, I. V., Subekti, M. N., Jagaddhito, G. S., & Susanti, A. D. (2023). Analisis Implementasi Sistem Informasi Manajemen Rumah Sakit (SIMRS) dalam Meningkatkan Pengelolaan Rumah Sakit yang Efisien di Rumah Sakit Umum Daerah Surakarta. *Sejahtera: Jurnal Inspirasi Mengabdi Untuk Negeri*, *3*(1), 189–197. https://doi.org/10.58192/sejahtera.v3i1.1716

Santoso, F. S., Ramadhani, P. A., Amnamuchlisah, D., & Hajijah, S. (2025). *Cindoku : Jurnal Keperawatan dan Ilmu Kesehatan Transformasi Digital Dalam Sektor Kesehatan Kajian Literatur Untuk Mendukung Inovasi dan Efisiensi Layanan Kesehatan Cindoku : Jurnal Keperawatan dan Ilmu Kesehatan*. *1*, 1–12.

Saputra Mokoagow, D., Mokoagow, F., Pontoh, S., Ikhsan, M., Pondang, J., & Paramarta, V. (2024). Sistem Informasi Manajemen Rumah Sakit dalam Meningkatkan Efisiensi: Mini Literature Review. *COMSERVA : Jurnal Penelitian Dan Pengabdian Masyarakat*, *3*(10), 4135–4144. https://doi.org/10.59141/comserva.v3i10.1223

Sariyildiz, A. Y. (2025). *TALENT MANAGEMENT IN HEALTHCARE WORKERS DURING International Journal of Social Sciences and Management Review*. *February*, 120–131.

Senthilrajah, T., & Ahangama, S. (2025). The Sri Lankan enigma: demystifying public healthcare information systems acceptance. *BMC Health Services Research*, *25*(1). https://doi.org/10.1186/s12913-024-12173-8

Sihole, P. O., Lesmana, A. E., & Wasir, R. (2024). Strategi Dan Evaluasi Sistem Informasi Kesehatan Di Indonesia : Tinjauan Literatur. *Jurnal Kesehatan Tambusai*, *5*(2), 4811–4819.

Silitonga, T. D. (2019). Implementation of Hospital Management Information System. *Jurnal Kesehatan Komunitas*, *5*(3), 161–165. https://doi.org/10.47505/IJRSS.2025.2.5

Sinubu, T. J. ., Gannika, L., & Buanasari, A. (2021). Hubungan Pengalaman Kerja Perawat Dengan Perspektif Kolaborasi Perawat-Dokter Di Rsu Gmim Pancaran Kasih. *Jurnal Keperawatan*, *9*(2), 24. https://doi.org/10.35790/jkp.v9i2.36778

Sugiyono. (2020). *Metode Penelitian Pendekatan Kuantitatif Kualitatif* (Issue August). Meedia Sains Indonesia.

Tilahun, B., Endehabtu, B. F., Minyihun, A., Zayede, T., Nigusie, A., Atnafu, A., Derseh, L., Hialemarima, T., & Amare, G. (2025). Practice, enablers and barriers of health information system accountability framework in Northwest Ethiopia 2023. *BMC Medical Informatics and Decision Making*, *25*(1). https://doi.org/10.1186/s12911-025-02942-8

Vissers, J., Elkhuizen, S., & Proudlove, N. (2022). Operations Management for

Healthcare. In *Operations Management for Healthcare*. Routledge. https://doi.org/10.4324/9781003020011

Westerhof, A., & Bos, W. J. (2025). *Health Information Technology in Hospitals : Impact of Effective Use on Quadruple Aim Performance*. *8*, 3433–3442.

Widgery, D. (1988). Health Statistics. In *Science as Culture* (Vol. 1, Issue 4). https://doi.org/10.1080/09505438809526230

Zhang, L., Bullen, C., & Chen, J. (2025). *Digital Health Innovations to Catalyze the Transition to Value- Based Health Care Patient-Reported Outcome*. *13*, 1–9. https://doi.org/10.2196/57385

Zhao, J., Wang, B. L., Qin, X., Liu, Y., & Liu, T. (2024). Core elements of excellent hospital leadership: lessons from the five top-performing hospitals in China. *International Journal for Quality in Health Care*, *36*(2). https://doi.org/10.1093/intqhc/mzae046

Zulfa, A. I., Febriani, D., Siregar, A. F. P., & Agustina, D. (2023). Manajemen Strategi Dalam Meningkatkan Mutu Pelayanan Kesehatan Di Rumah Sakit: Literature Review. *Jurnal Kesehatan Tambusai*, *4*(2), 1008–1016.