



Hospital Management Information Model Hot-Fit: A Systemic Evaluation At Hospital

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ABSTRACT

Management Information System (MIS) for hospital at RSUD dr. Tjitrowardojo Purworejo has not been evaluated comprehensively. Officers lack competence and discipline, need cognitive contribution and leadership support. There is a lack of technological and equipment support. Culture and work patterns influence technology implementation. The study analyses MIS for hospital services at RSUD dr. Tjitrowardojo Purworejo, utilizing interviews and observations. It identifies challenges, develops recommendations, and utilizes a qualitative approach, including case studies and document analysis, to enhance efficiency and quality. This study uses qualitative methods with interviews, observations, case studies, and document analysis to understand the phenomenon of MIS for hospital. RSUD dr. Tjitrowardojo Purworejo faced obstacles in managing MIS due to insufficient staff needs. Management seeks to address this issue with new hires and internal training. Lack of officer discipline and lack of features that match the needs are also a challenge. Management enforces a reward and punishment system, allocates costs, develops networks, and monitors the evaluation of MIS for hospital. Evaluation of MIS for hospital is important, paying attention to input from health professionals, IT personnel, hospital administrators, and patients to identify weaknesses and improve the system for better health services.

Keywords: Hospital Management, Information Management, Model Hot-Fit, Systemic Evaluation

ABSTRAK

SIM-RS di RSUD dr. Tjitrowardojo Purworejo belum ada evaluasi secara komprehensif. Petugas kurang kompeten dan disiplin, perlu kontribusi kognitif dan dukungan kepemimpinan. Terdapat kekurangan dukungan teknologi dan peralatan. Budaya dan pola kerja mempengaruhi implementasi teknologi. Penelitian bertujuan menganalisis SIM-RS yang digunakan oleh RSUD Dr. Tjitrowardojo Purworejo. Metode wawancara dan observasi untuk mengumpulkan data yang diperlukan. Studi ini bertujuan untuk mengidentifikasi tantangan yang dihadapi oleh sistem SIM-RS, mengusulkan perbaikan, dan menggunakan metode kualitatif termasuk studi kasus dan analisis dokumen untuk meningkatkan efisiensi dan kualitas pelayanan rumah sakit. Penelitian ini menggunakan metode kualitatif dengan wawancara, observasi, studi kasus, dan analisis dokumen untuk memahami fenomena SIM-RS. RSUD dr. Tjitrowardojo Purworejo menghadapi kendala dalam mengelola SIM-RS akibat kebutuhan staf yang belum tercukupi. Manajemen berupaya mengatasi masalah ini dengan perekrutan baru dan pelatihan internal. Kurangnya kedisiplinan petugas dan kurangnya fitur yang sesuai dengan kebutuhan juga menjadi tantangan. Manajemen memberlakukan sistem reward dan punishment, mengalokasikan biaya, mengembangkan jaringan, dan melakukan monitor evaluasi terhadap SIM-RS. Evaluasi SIM-RS penting, memperhatikan masukan dari profesional kesehatan, tenaga IT, administrator rumah sakit, dan pasien untuk identifikasi kelemahan dan perbaikan sistem guna layanan kesehatan yang lebih baik.

Kata kunci: Evaluasi Sistemik, Manajemen Rumah Sakit, Manajemen Informasi, Model Hot-Fit

INTRODUCTION

The implementation of a Management Information System (MIS) for a Hospital is very important in its application in today's era.(Jiang et al., 2020). Collecting, storing, processing, and analyzing data is an infrastructure in information systems(Rialti et al., 2019). This is supported by the increasing complexity of problems in patient medical data and other administrative data related to implementing hospital services these patients receive.

The process of patient care in hospitals, especially medical services, requires accurate data storage (Zdęba-Mozola et al., 2022). However, providing MIS for hospital services is not an easy thing, especially if it is associated with the cost of procuring a driver's license. If done hastily without going through the planning stage, it is feared that it will cost more(Satria Dewi et al., 2021). As a form of healthcare facility that organizes health efforts, hospitals often have difficulty managing

information for both internal and external needs. This requirement includes comprehensive patient information data, including medical history and long-term physician records (Khanra et al., 2020). Therefore, efforts need to be made to improve information management that is efficient, fast, easy, accurate, cheap, safe, integrated, and accountable. One form of application is through a service system by utilizing information technology through computer-based information systems. Information management is part of human work so it requires computer assistance (Chen et al., 2019)

Febrita and friends (2021) In his study, he concluded that user systems, user happiness, and organizational factors had little bearing on system quality ($p = 0.585$, $p = 0.541$, and $p = 0.256$, respectively). Information quality has a positive relationship with system users ($p = 0.004$) and positive relationships with users ($p = 0.000$), but not with organizations ($p = 0.132$). User happiness ($p = 0.000$), organization ($p = 0.000$), and user system all have an impact on the quality of care. There is need for improvement, particularly with regard to the caliber of the current system, in the Hospital Information Management System implementation using the HOT-fit Model at the Sabang Regional General Hospital in Aceh. Users can be trained to use the system more effectively by providing them with a useful and appealing system.

RSUD dr. Tjitrowardojo Purworejo has not conducted a comprehensive evaluation of MIS for hospitals, as it is crucial for policy direction (Liao et al., 2019; Sander et al., 2022). MIS implementation faces obstacles, including incompetent hospital officers, discipline issues, and cognitive contributions from system operations officers. Human factor includes incompetent MIS, which can lead to mistakes and hinder effective implementation (Emmanouilidis et al., 2019; Inokuchi et al., 2015). Leadership support and solid staff are critical to the success of the hospital system (Agustini et al., 2020). MIS for hospitals depends on organizational factors like the hospital's Budget Plan, which determines the increase in MIS. However, technology factors, such as inadequacy of equipment, cultural considerations, and work patterns, also impact the performance of MIS (Rustiana et al., 2023). Addressing these issues is crucial for ensuring optimal MIS in hospitals. (Hughes et al., 2019).

This study aims to gain a deeper understanding of MIS for hospitals at RSUD dr. Tjitrowardojo Purworejo by conducting interviews and observations. The research aims to identify challenges and issues faced in MIS implementation, focusing on human, organizational, and technological factors affecting performance (Trigunarso & Febrihartati, 2023). The results will provide recommendations and solutions to improve efficiency, accuracy, and quality of MIS services, contributing to a broader understanding of the MIS phenomenon in the hospital context (Das & Hussey, 2022).

METHOD

The method in this study uses a qualitative approach that focuses on a deep understanding of the phenomenon under study. This method aims to explore the broader meanings, perceptions, and experiences of individuals. In its implementation, qualitative methods involve the collection and analysis of data that is descriptive, interpretive, and contextual (Calzari et al., 2024).

Research methods in this study can be divided into several stages that include data collection, data analysis, and recommendations. Data collection was conducted through interviews with respondents who have been identified in the Table. Structured interviews use predetermined questions, as well as unstructured interviews with the development of questions based on subject responses. In addition, direct observations were made by researchers on respondents who used MIS in hospitals. Questions should focus on needs, challenges, and advice related to MIS management in hospitals (Pribadi et al., 2024). Related documents, such as hospital policies, MIS usage guidelines, and related regulations, are also collected. This document will provide additional context.

Qualitative Data Analysis is carried out through transcription of interview results and content analysis to identify the main themes, needs, problems, and suggestions that arise from the interview (Abukmail et al., 2024). After analysis, the data is interpreted by identifying patterns and similarities in respondents' responses. The interview results are then combined with findings from document analysis to provide a complete picture.

Based on the results of the analysis, concrete recommendations were formulated to improve MIS management in hospitals. These recommendations cover aspects of training, regulations, infrastructure, and discipline (Böckler, 2023). Research conclusions were also made to summarize research findings and the importance of MIS development in hospitals (Hidayah et al., 2023). The results of the study that include all findings and recommendations are then written.

The results of the study are submitted to related parties in the hospital, including management and related departments. These recommendations are then used as guidelines for the improvement and development of MIS in hospitals, which may involve employee training, changes in regulations, infrastructure improvements, and improvements in user discipline.

RESULTS AND DISCUSSION

The research result highlights the importance of MIS in hospitals to manage data and information related to patients, medical personnel, and health service processes. To improve the quality and efficiency of MIS, interviews with related parties were conducted to identify needs and problems faced. The results will serve as the basis for developing a more responsive, user-friendly, and optimized health service process. Continual improvement and development will strengthen the sustainability of quality health services for patients and medical personnel.

No	Informant	Age	Education	Position	Length of work
1	Informer 1	48 years old	Bachelor	Polyclinic Nurse	28 years old
2	Informer 2	38 years old	Diploma	Medical Recorder	10 years
3	Informer 3	57 years old	Bachelor	Head of Electronic Data Processing Installation	28 years old
4	Informer 4	49 years old	Graduate	Doctor	24 years old
5	Informer 5	50 years old	Bachelor	Head of Medical Records Sub	28 years old
6	Informer 6	56 years old	Graduate	Head of Pharmaceutical Installation	26 years old
7	Informant 7	57 years old	Graduate	Head of Nutrition Installation	30 years
8	Informer 8	44 years old	Bachelor	Chairman of the Stature Committee	20 years

Table 1. Characteristics of respondents

Source: RSUD dr. Tjitrowardojo Purworejo, 2023

Several inputs were obtained after conducting interviews with several respondents, including the Head of the Subcoordinator of Health Information Management, medical employees (doctors, nurses, midwives, and other medical personnel), and non-medical employees. The MIS for hospitals is good and provides benefits, and further development needs to be carried out by government regulations. In addition, MIS for hospital users needs to receive continuous training to keep up with the development of hospital needs and maximize the use of this system.

"... In my opinion, the main thing that must be considered is the internet connection because sometimes there are still frequent problems that are not smooth and infrastructure facilities

such as computers are still limited, they have to queue to use..." (Informant 1, March 12, 2023)

So the point is that this MIS for hospitals which are computer-based and this network for the short term may require high costs because of the needs of devices and facilities that need to be needed..... but in the long run, this will keep costs down because in his papers (Informant 2, March 12, 2023)

"... training is needed for hospital staff and employees on hospital driver's license.... and also for compliance is also applied reward and punishment... (Informant 3, March 14, 2023)

"... in my opinion, Yes.. from the hospital's policy, it is very supportive for the implementation of this hospital MIS for hospitals program.. like that But later there will be obstacles too.., the obstacle is that in the use of this hospital driver's license, we do use it easily, but sometimes it is a few hours. Maybe the rush hour is a bit slow..."(Informant 4.14 March 2023)

".. has been implemented in regulations such as SPO or pro tap.., guidelines and guidelines for organizing service guidelines for juniors in electronic data processing installations Oh yes So when the time needed for data reports is always ready and on time..."(Informant 5, March 14, 2023)

".. yes so those features that don't exist right now I always ask to be developed. Therefore, it is related to the management of our goods, the number of goods is 2000 items, yes, which I must manage properly". (Informer 6, March 27, 2023)

"...if there is support from everyone, God willing, it will be able to run well. This activity must always be monitored and evaluated so that it will always develop and test the best. I think it's sir..."(Informant 7, March 27, 2023)

"..... There is no need for paper everything anymore and maybe the storage place will also be more effective and efficient because, with this electronic system, everything is stored in an electronic database so that there is no need for storage anymore..... (Informant 8, March 27, 2023)

The Respondent emphasized the need for MIS development in hospitals to improve data inputting processes, especially during busy situations. System speed improvement is crucial for efficient work efficiency. Special diagnosis data for nurses is essential for a smoother process. However, additional assistance and training are needed to overcome unfamiliar features and ensure data backup capacity. By addressing these inputs, MIS can meet hospital needs and enhance overall performance.

Evaluation system	Analysis summary
Human	Mis for hospitals requires continuous training for officers to meet staff needs and improve discipline. The system needs to be developed to accommodate all user expectations and demands, ensuring optimal performance and addressing the lack of discipline in officers.
Organization	The management has implemented a reward and punishment system for hospitals to improve officer discipline in mis usage. The system is managed independently, following regulations and providing support through fund allocation and policies. The goal is to enhance efficiency and effectiveness in processing data for hospital purposes.
Technology	Mis in hospitals requires improved computer facilities and technology to support work effectiveness and efficiency. Increased bandwidth is needed to overcome slow connections during busy hours. Monitoring and evaluation of technology are crucial for continuous improvement. Ensuring complete features for each unit is essential for a successful mis implementation.

Benefits	Mis for hospitals enhances work productivity by optimizing data and information management, improving cost efficiency and increasing employee work productivity. It facilitates access and processing of needed data, ensuring speed and accuracy in reports. Mis also supports research needs in hospitals, enhancing overall efficiency and effectiveness.
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Table 2. Of conclusions of analysis results

Source: RSUD dr. Tjitrowardojo Purworejo, 2023

HUMAN

RSUD dr. Tjitrowardojo in Purworejo faces obstacles in managing the MIS for hospitals due to insufficient staff needs. Although the hospital has realized the importance of the presence of MIS for hospitals in improving the efficiency and accuracy of administrative processes, limited manpower hinders the progress of implementation (Oviaño & Bou, 2018). MIS is a major concern in health IT, requiring skilled and experienced experts for optimal services. Efforts include new hires and internal training, but attracting and retaining a qualified workforce remains a major concern (Putro Mudiono et al., 2023). RSUD dr. Tjitrowardojo must continue to meet staff needs to effectively manage MIS for hospitals, ensuring quality health services for the community. (Kim et al., 2019; Semaan et al., 2022).

To improve the management of the hospital management information system at RSUD dr. Tjitrowardojo Purworejo, it is important to organize relevant training for MIS for hospitals users. Through this training, hospital staff will be provided with the necessary knowledge and skills to understand and use such systems effectively (Demir & Ugurluoglu, 2019). This training includes an in-depth understanding of MIS for hospitals features, application usage, accurate data entry, and system management and maintenance (Abera et al., 2022). RSUD dr. Tjitrowardojo Purworejo must ensure regular training and knowledge updates for hospitals users of MIS to optimize their management and utilization of existing information systems. This will help hospitals provide better and more efficient health services to patients (Roldán et al., 2019).

ORGANIZATION

Challenges in managing MIS for hospitals due to lack of discipline of user officers. Although efforts have been made to organize training and socialization on the use of MIS for hospitals, there is a tendency for some officers to lack discipline in complying with established procedures and guidelines. This can lead to data inaccuracies, lags in information processing, and even errors that could potentially cost patients and the hospital itself (Powers et al., 2019; Zabin et al., 2022). The importance of discipline in the use of MIS for hospitals cannot be ignored, because this system plays an important role in hospital administration management (Hou et al., 2020). RSUD dr. Tjitrowardojo Purworejo needs to take firm steps to improve the discipline of MIS for hospitals user officers, such as increasing supervision, providing clear direction on policies and procedures, and providing appropriate sanctions for violations that occur (Johari et al., 2021; Zhang et al., 2020). RSUD dr. Tjitrowardojo Purworejo needs to improve the discipline of MIS for hospitals user officers to ensure the integrity and effectiveness of the information system. Socialization efforts and continuing education can be carried out to increase officers' understanding and awareness of the importance of discipline in the use of MIS for hospitals.

Although RSUD dr. Tjitrowardojo Purworejo has implemented MIS for hospitals, but it has not been able to accommodate all user needs optimally. Several limitations need to be overcome to ensure that MIS for hospitals can meet the needs of users properly (Agustini et al., 2020). The MIS for hospitals faces a gap between user expectations and system capabilities. Users expect more in-depth data analysis, detailed reports, and integration with other systems. To address this issue, RSUD dr. Tjitrowardojo Purworejo must conduct a thorough evaluation of user needs and make adjustments to existing MIS for hospitals. This involves collaborating with system providers and

gathering feedback from users to understand unmet needs.(Fonseka et al., 2020; Rialti et al., 2019). With the right efforts, RSUD dr. Tjitrowardojo Purworejo can develop a more sophisticated and comprehensive MIS for hospitals so that it can accommodate all user needs and improve the efficiency and quality of service at the hospital. Hospitals develop regulations based on the development of hospital needs following data-driven proposals(Powers et al., 2019).

The management of RSUD dr. Tjitrowardojo Purworejo implements a reward and punishment system to encourage hospitals users to comply with established rules and procedures. Rewards can be in the form of recognition, rewards, or other incentives that can increase motivation and job satisfaction for those who consistently comply with the rules and perform their duties well (Saputri et al., 2021). Dr. Tjitrowardojo Purworejo's management of RSUD aims to create a disciplined, efficient, and professional work environment by implementing a reward and punishment system for hospital users who violate the rules or do not carry out their duties properly. This will take the form of reprimands, administrative sanctions, or delays in promotion or promotion. The goal is to improve the quality of services provided to patients.

TECHNOLOGY

RSUD dr. Tjitrowardojo Purworejo manages MIS for hospitals independently, following the needs and applicable regulations. They actively monitor technological developments and the latest trends in the health sector to ensure an efficient and up-to-date hospital driver's license. The development of MIS for hospitals is carried out on an ongoing basis to meet the needs of hospitals in managing patient data, examination schedules, inventory of drugs and medical devices, and other administrative processes(LIU et al., 2022; Ramos-Merino et al., 2018). The management of RSUD dr. Tjitrowardojo Purworejo evaluates the existing system and collaborates with the IT team to identify shortcomings and new needs that may arise(Putro et al., 2018; Rasing et al., 2023). By managing MIS for hospitals independently and following the needs and regulations, RSUD dr. Tjitrowardojo Purworejo can optimize the use of this system to improve operational efficiency, improve service quality, and maintain the security and confidentiality of patient information (Chioncel et al., 2020; Liao et al., 2019).

RSUD dr. Tjitrowardojo Purworejo offers full support for the development of MIS for hospitals, allocating costs and implementing policies. They allocate resources and budget, ensure optimal use, and provide training and education to staff. This support enables the hospital driver's license to become an effective and efficient tool in data processing, increasing productivity, optimizing resource use, and improving overall management and healthcare processes (Irwandy & Sjaaf, 2018).

RSUD dr. Tjitrowardojo Purworejo has provided sufficient computer facilities and infrastructure in each room. Nevertheless, the development of MIS for hospitals is still a need that needs attention. The management recognizes the importance of having a hospital management information system that is constantly updated and improved. In that order, they are committed to continuing the development of MIS for hospitals to meet the operational demands and evolving needs of hospitals. By doing the right development, RSUD dr. Tjitrowardojo.

The development of MIS for hospitals at RSUD dr. Tjitrowardojo Purworejo is an urgent need because of problems related to increasing bandwidth needed to overcome limitations during peak hours. Management realizes that internet speeds that are often slow can hinder operational efficiency and fast access to patient data and other administrative processes (Khanra et al., 2020; Zabin et al., 2022). Therefore, the development of MIS for hospitals must be carried out to increase network capacity and reliability, to overcome speed problems during peak hours (Emmanouilidis et al., 2019). With this development, it is expected that service quality can be improved, the data processing process will be smoother, and patient satisfaction and hospital operational efficiency can be achieved optimally(Zhang et al., 2020). The management of RSUD dr. Tjitrowardojo Purworejo

is committed to allocating the necessary resources to overcome this problem and ensure the development of MIS for hospitals can be carried out successfully (Arifin et al., 2018).

The management of RSUD dr. Tjitrowardojo Purworejo regularly monitors and evaluates the use of MIS for hospitals technology to follow the development and improve the quality of MIS. The IT team and related parties are involved in the monitoring and evaluation process to identify areas that require improvement, evaluate the performance of MIS for hospitals, and identify opportunities for further development. Digital devices with high user rates will affect the mechanisms that can transmit data over the network. (Johari et al., 2021; Singh et al., 2020)

The development of MIS for hospital quality is the main focus of this process. The management of RSUD dr. Tjitrowardojo Purworejo conducted an in-depth analysis of the needs and expectations of MIS for hospital users and compared with other hospitals that have successfully implemented similar technology. From the analysis results, development measures are established and implemented, including improved functionality, increased speed of access, and fulfillment of user needs.

BENEFITS

The management of RSUD dr. Tjitrowardojo Purworejo has implemented MIS for hospitals which can integrate and accelerate the flow of data from various units and departments in the hospital. The system is designed to automatically collect the necessary data and provide accurate and timely reports (Rialti et al., 2019). With the hospital driver's license, hospitals can get quick access to relevant information, including patient data, BPJS policies, and claims submitted (Pan et al., 2021).

With a commitment to the speed and accuracy of data reports, RSUD dr. Tjitrowardojo Purworejo can ensure that hospitals can provide accurate and timely data to BPJS peserta (Librianto et al., 2022). This not only helps hospitals in obtaining appropriate claims but also supports BPJS policies in providing quality health services to participants. Thus, the speed and accuracy of data reports required by hospitals are crucial factors in maintaining good relations with BPJS and ensuring effective and efficient management in hospital administration and financial aspects (Nuraini et al., 2021).

LIMITATION OF THE STUDY

The orientation of researchers can influence the qualitative research process. Participant selection, data collection techniques, and interpretation of study results can be influenced by the researcher's views or personal preferences. As a result, research findings often reflect the researcher's view more than the objective reality of the phenomenon under study.

CONCLUSIONS AND SUGGESTIONS

Evaluation of MIS for hospitals is very important to provide quality health services to patients. This evaluation should take into account suggestions and input from a wide range of stakeholders, including healthcare professionals, Information and Technology (IT) personnel, hospital administrators, and patients. This helps identify weaknesses in the system and make improvements to improve better healthcare.

One important input in the evaluation process is feedback from health professionals who interact with the hospital's informatics system daily. They can identify areas that need improvement and suggest changes that can improve the efficiency of the system, which in turn will improve patient care.

Health IT personnel are one of the important stakeholders in the evaluation process. They have a deep understanding of how the system operates and can identify problems arising from technical

errors. Feedback and input from them allow the team to fix such issues and improve the usability of the system.

Hospital administrators also need to be involved in the evaluation process, as they are responsible for the overall management of the hospital. Their input can help identify areas where the system needs improvement to meet the needs of the agency. In addition, patient participation is strongly encouraged to provide advice and input through surveys and other feedback platforms. Patients have first-hand experience with the system and can identify areas where MIS for hospitals still has deficiencies.

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ETHICAL CONSIDERATIONS

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Conflict of Interest Statement

In this study, we sincerely state that there is no conflict of interest that can affect the objectivity and integrity of the research results.

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