Factors Affecting The Hospital Management Information System In The Hospital Efarina Etaham Berastagi

Predy Roy Suranta Ginting[1], Ermi Girsang[2], Sri Lestari Ramadhani Nasution[3*]

[1,2,3]Faculty Medicine and Health Science, Universitas Prima Indonesia, Medan

Email corespondensi : fredyroy66@gmail.com

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Abstract

Hospital management requires fast and accurate data management to create quality services. This study aims to evaluate the Hospital Management Information System (SIMRS) at Efarina Etaham Berastagi Hospital. The design of this research is quantitative research with a cross sectional approach. This research was conducted at the Efarina Etaham Berastagi Hospital, Karo Regency, North Sumatra Province. The time of the research was carried out from July 2022 to February 2023. The population in this study were all employees who used the Hospital Management Information System (SIMRS) in their work at the Efarina Etaham Berastagi Hospital in 2022 totaling 110 people consisting of department employees medical department. The number of samples taken in this research was 110 people. The variable measurements used are system use, user satisfaction, structure, environment, system quality, information quality, service quality, net benefits. Research data collection instruments are primary, secondary and tertiary. The data analysis used is univariate, bivariate and multivariate analysis. From the research results, it is known that there is a relationship between system use and SIMRS performance, there is a relationship between user satisfaction and SIMRS performance, there is a relationship between structure and SIMRS performance, there is a relationship between the environment and SIMRS performance, there is a relationship between system quality and SIMRS performance, there is a relationship between information and SIMRS performance, there is relationship between service quality and SIMRS performance. The suggestion in the research is that it is necessary to carry out preventive maintenance/maintenance regularly and periodically as well as monitoring maintenance on SIMRS regarding hardware and software in related units. Hospital management needs to pay attention to factors that encourage or hinder the adoption of SIMRS as a reference in SIMRS development, such as network improvements and also improving computer facilities for users.

Keyword : Hospital, Hospital Management Information System, Quality

INTRODUCTION

Hospitals are institutions that provide inpatient services, medical services and continuous nursing services for diagnosis and providing treatment carried out by organized medical staff (Suci, 2015). The function of the hospital is to provide curative and rehabilitative services as well as improve health (Rukun, 2018). individuals as well as providing education and training for human resources in order to increase capacity in providing health services (Indonesia, 2017).

WHO (World Health Organization) regarding e-health number WHA (World Health Assembly Resolution on e-health) number 58.28 In 2005, World Health Organization encouraged every country to plan and implement e-health services in the health sector (Kemenkes, 2012). E-health is a developing field of science and is a combination of knowledge between medical informatics, public health and business (Bayu, 2013). E-health refers to health services and the provision of health information delivered via internet networks and related technologies. In a broader sense, this term not only marks technical developments, but also ideas, ways of thinking, attitudes, and commitment to global thinking and networks, and going global using information and communication technology (Handayani, 2018).

In Indonesia it is regulated in Law no. 44 of 2009 concerning hospitals, where every hospital is obliged to record and report all hospital management activities in the form of a Hospital Management Information System (SIMRS) (Hidayat, 2019). Therefore, every hospital is obliged to run Hospital Management Information System using open source as regulated in Minister of Health Regulation No. 82 of 2013 concerning Hospital Management Information System. Based on data from the Program and Information Section, out of a total of 2734 hospitals, only 1423 hospitals have Hospital Management Information System and are functioning (Jalaludin, 2011). Meanwhile, 134 of them already have Hospital Management Information System but it is not functioning and as many as 1177 hospitals still do not have Hospital Management Information System. Later, with Hospital Management Information System, data analysis can be obtained quickly which can then be used to support regulatory policies at the center, such as BPJS management, knowing data on what diseases the community suffers most, as well as other related matters that can be used as reference data for decision making (Care, 2017).

The aim of Hospital Management Information System is to ease the administrative burden in hospitals, both from patient service processes recorded medically, financially, human resources (HR), assets and so on related to hospital processes (Lestari, 2017). Because so far it has often been felt that the payment process for returning patients takes a long time if the implementation still uses a manual pattern3. With a Hospital Management Information System you can streamline the process of recording, calculating and reporting. The system will be increasingly needed if the hospital gets bigger, there are more patients and more administrative processes are required (Thakare, 2016).

The obstacles that occur are a lack of understanding and concern for human resources in carrying out their functions, duties and responsibilities because there is no clear main task, SPO and education and socialization are not optimal and not all units use Hospital Management

Information System (Murnita, 2014). Lack of personnel to handle system problems. Direct users also still don't understand how to use the system. Users cannot keep up with the high level of technology of medical Hospital Management Information System which creates a gap during implementation (Nurlaila, 2017).

The results of interviews conducted by researchers with the Hospital Director and Head of the IT (Information Technology) Department at Efarina Etaham Berastagi Hospital in August 2022, have clarified that the system application known as the Hospital Management Information System (SIMRS) has been implemented since 2014. Several The problem that has occurred is that errors in data entered into SIMRS often occur due to lack of data entry/input delays. This is because the input process often takes time and also the user's lack of knowledge in using the SIMRS application. This happened due to a lack of supervision over the implementation of SIMRS at Efarina Etaham Berastagi Hospital, so that errors were not known in detail and they still occur to this day. SIMRS at Efarina Etaham Berastagi Hospital is under the organizational structure of the General Administration and Finance Manager. This SIMRS installation has 2 (two) IT experts who are responsible for implementing the SIMRS installation. Overall, the SIMRS coordinator is responsible for the implementation of SIMRS at Efarina Etaham Berastagi Hospital so that it can run well and optimally, as well as ensuring that services are provided to patients by working together harmoniously with all units. Technological problems also often occur in implementing the SIMRS application and Efarina Etaham Berastagi Hospital has changed vendors several times. The management of Efarina Etaham Berastagi Hospital said that the problems related to SIMRS occurred due to a lack of supervision over the technological field of implementing SIMRS, so that problems were not known in an integrated manner. Apart from that, until now the SIM RS Efarina Etaham Berastagi or IT have never carried out any evaluation actions to assess the achievement of the SIMRS objectives.

In this research, the HOT-Fit Theory will be used which is aimed at the core components in an information system, namely Human (Human) - Organization (Organization) - Technology (Technology) and Net Benefits (System Benefits). The HOT-Fit Model approach was chosen in this research because it provides a new framework that can be used to evaluate the performance of the management information system at Efarina Etaham Berastagi Hospital. The HOT Fit model approach focuses on analyzing human, organizational and technological aspects. These aspects will be used to assess the success of the implementation of the hospital management information system (SIMRS), because several studies have shown a significant influence on the Net Benefit (NB) from the implementation of SIMRS.

METHOD

The design of this research is quantitative research with a cross sectional approach, which is a data analysis research design carried out by describing or illustrating the data that has been collected to explore facts about factors related to the performance of the hospital management information system (Net Benefit) at Efarina Etaham Hospital Berastagi in 2023 which was observed in the same period. This research was conducted at the Efarina Etaham Berastagi Hospital, Karo Regency, North Sumatra Province.

This research was conducted from July 2022 to February 2023. The population in this study were all employees who used the Hospital Management Information System (SIMRS) in their work at the Efarina Etaham Berastagi Hospital in 2022 totaling 110 people consisting of department employees medical department as many as 62 people, general department/HRD as many as 24 people, finance/accounting department as many as 8 people, marketing department as many as 5 people, registration department 4 people, cashier 4 people and IT department 3 people. The sampling technique in this research uses the entire population as the sample (total population). The number of samples taken in this research was 110 people. Aspects of data collection in this research are independent variables, namely system use, user satisfaction, structure, environment, system quality, information quality service quality and the dependent variable, namely net benefits. Data collection instruments are primary data, secondary data and tertiary data. Method of Collection Primary data is collected from the subject's answers to questions given by researchers which are obtained from the variables System use, User satisfaction, Structure, Environment, System quality, Information quality, Service quality and Net Benefits that will be studied. Secondary data was collected by researchers indirectly based on descriptive data at the research location, namely data from Efarina Etaham Berastagi Hospital.

Tertiary data is collected through the results of previous research, proposals, both from the internet and libraries which can be used to support discussions. The measuring tool in this research is a questionnaire. The data analysis carried out was univariate analysis which aims to explain the frequency distribution of each variable, namely the System use, User satisfaction, Structure, Environment, System quality, Information quality, Service quality and Net Benefits variables. Analysis, namely the data used to see the relationship between the variables System use, User satisfaction, Structure, Environment, System quality, Information quality, Service quality and Net Benefits is by using the Pearson Product Moment correlation test, and multivariate analysis, namely using logistic regression test.

RESULT

Bivariate Analysis

Table 1. Pearson Product Moment Correlation Statistical Test Results

No	Variable	*Correlation Coefficient (r)*	Sig. (*p*)
1.	system use	0,650**	0,000
2.	user satisfaction	0,217*	0,023
3.	Structure	0,488**	0,000
4.	Environtment	0,425**	0,000
5.	system quality	0,262**	0,006
6.	Information	0,556**	0,000
7.	service quality	0,651**	0,000

The relationship between the system use variable and Hospital Management Information System performance shows a very strong relationship (r=0.650) and has a positive pattern, meaning that the higher the system use, the higher the Hospital Management Information System performance. The relationship between the user satisfaction variable and Hospital Management Information System performance shows a very strong relationship (r=0.217) and has a positive pattern, meaning that the higher user satisfaction, the higher Hospital Management Information System performance will be.

The relationship between the structure variable and Hospital Management Information System performance shows a very strong relationship (r=0.488) and has a positive pattern, meaning that the higher the structure, the higher the SIMRS performance. The relationship between environmental variables and Hospital Management Information System performance shows a very strong relationship (r=0.425) and has a positive pattern, meaning that the higher the environment, the higher the SIMRS performance.

The relationship between the system quality variable and Hospital Management Information System performance shows a very strong relationship (r=0.262) and has a positive pattern, meaning that the higher the system quality, the higher the SIMRS performance. The relationship between the information variable and Hospital Management Information System performance shows a very strong relationship (r=0.556) and has a positive pattern, meaning that the higher the information, the higher the SIMRS performance.

The relationship between the service quality variable and Hospital Management Information System performance shows a very strong relationship (r=0.651) and has a positive pattern, meaning that the higher the service quality, the higher the SIMRS performance.

Multivariate Analysis

Multivariate analysis aims to see the significance of the relationship between independent variables and dependent variables simultaneously while determining the factors that more dominantly influence SIMRS performance. The statistical test used is logistic regression (p-value <0.25) presented as follows.

Table 2. The statistical test used is logistic regression

No	Variable	B	S.E	Wald	df	Sig	Exp (B)
1.	system use	21,150	4128,147	0,000	1	0,996	1,532
2.	user satisfaction	-1,528	1,179	1,679	1	0,195	0,217
3.	Structure	2,463	1,129	4,757	1	0,029	11,735
4.	Environtment	3,326	1,342	6,142	1	0,013	27,829
5.	system quality	-2,222	1,692	1,725	1	0,189	0,108
6.	Information	0,736	1,064	0,479	1	0,489	2,088
7.	service quality	22,895	4128,147	0,000	1	0,996	8,771
	Constant	**-70,908**	**12384,440**	**0,000**	**1**	**0,995**	**0,000**

Analysis results it is known that the largest p-value is the variable system use (0.996), user satisfaction (0.195), system quality (0.189), information (0.489) and service quality (0.996) where these variables are greater than the sig value. (sig>0.05) so it must be removed from the model for multivariate.

Based on the results above, it is known that there are 2 independent variables that significantly influence SIMRS performance because each of these variables has a significance value that is smaller than a=5%. These variables are the Structure (sig. = 0.000) and Environment (sig. = 0.000) variables.

The magnitude of the influence is shown by the EXP value (B). The amount of EXP (B) in this research is as follows: The Structure variable has an EXP (B) value of 15.158, so respondents who have a good Structure have a useful SIMRS tendency of 15.158. The B value or natural logarithm of 15.158 is 2.719. Because the B value is positive, the Structure variable has a positive relationship with SIMRS performance or if the respondent has a good structure, SIMRS tends to be useful.

The Environment variable has an EXP (B) value of 11.646, so respondents who have a good Environment have a beneficial SIMRS tendency of 11.646. The B value or natural logarithm of 11.646 is 2.455. Because the B value is positive, the Environment variable has a positive relationship with SIMRS performance or if the respondent has a good Environment,

SIMRS tends to be useful. The variable that most significantly influences SIMRS performance is the Structure variable which has the largest EXP (B) value, namely 15.158. From the calculation of the logistic regression equation above, it is known that the probability or predicted value in this study is 0.921039. This means that together the structure and environment variables influence or contribute to SIMRS performance by 0.921039 or 9.21%.

DISCUSSION

The Influence of System Use on SIMRS Performance at Efarina Etaham Berastagi Hospital

Based on the results of research conducted at the Efarina Etaham Berastagi Hospital, using bivariate analysis it was found that the p value = 0.000 (<0.05), this shows that there is a relationship between system use and SIMRS performance at the Efarina Etaham Berastagi Hospital. From the multivariate results using the logistic regression test, the System use variable does not significantly influence patient satisfaction with a sig. value >0.05.

The results of this research are not in line with the theoretical framework and also with research conducted by (Permana, 2017) and (Evania, 2016) which states that the high level of user behavioral intention to use the system has been empirically proven to have a significant effect on the net benefits obtained. In other words, the intensity of system use has an influence on the benefits produced by a system.

The results of research using logistic regression analysis show that system use does not significantly influence SIMRS performance at Efarina Etaham Berastagi Hospital. This can happen because there are still quite a lot of respondents who feel uncomfortable using the existing SIMRS application and there are also several respondents who state that the SIMRS application feels complicated.

The Influence of User Satisfaction on SIMRS Performance at Efarina Etaham Berastagi Hospital

Based on the results of research conducted at the Efarina Etaham Berastagi Hospital, using bivariate analysis it was found that the p value = 0.023 (<0.05), this shows that there is a relationship between user satisfaction and SIMRS performance at the Efarina Etaham Berastagi Hospital. From the multivariate results using the logistic regression test, the User satisfaction variable does not significantly influence patient satisfaction with a sig. value >0.05.

In line with (Yusuf, 2016) theory, user satisfaction has a reciprocal relationship with net benefit. User satisfaction is also influenced by system quality, information quality and service quality. User proficiency depends on the user's knowledge of the use of information systems.

The results of this research are in accordance with research by (Abdau, 2018) and (Santoso, 2017) which shows that there is a unidirectional (positive) relationship between user satisfaction and net benefits. According to (Kushartanti, 2018), satisfaction is the response and feedback that users receive after using an information system.

Research by (Gursel, 2016) states that the level of satisfaction directly influences system use. If SIMRS is satisfactory then the level of use will become more frequent. User satisfaction is a factor that encourages system use and influences user perceptions of the benefits obtained. According to respondents, SIMRS is easy to learn. However, there are some functions that users do not know and need continuous retraining.

Influence of Structure on SIMRS Performance at Efarina Etaham Berastagi Hospital

Based on the results of research conducted at the Efarina Etaham Berastagi Hospital, using bivariate analysis it was found that the p value = 0.000 (<0.05), this shows that there is a relationship between Structure and SIMRS Performance at the Efarina Etaham Berastagi Hospital. From the multivariate results using the logistic regression test, the User satisfaction variable significantly influences patient satisfaction with a sig. <0.05.

(Betri, 2017) also explains that encouragement from the organization can only significantly motivate users to use the system. Once users are motivated to use the system, then only then will they be able to increase the perception of usefulness (net benefit) and the quality of the technological factor must still be developed and improved. So an organization must continue to make efforts to evaluate the existing organizational structure in order to continue to improve the success of the system.

The organizational structure in supporting the implementation of SIMRS at Efarina Etaham Berastagi Hospital is considered by respondents to be still not good. This is because the user assesses that the facility assistance is still lacking. In line with the results of the questionnaire tabulation which showed that 29.1% of respondents stated that they did not agree that technicians were ready to come to carry out repairs and maintenance on computers and networks, 26.4% of respondents stated that they did not agree that Top Management as superiors were responsible for operations. services, 15.5% of respondents stated that they did not agree that Top Management as superiors routinely checked the running of SIMRS, 26.4% of respondents stated that they did not agree that management always completes all information system needs and 46.4% of respondents stated that they did not agree that fellow officers could establish good relationships and communication.

Influence of Environment on SIMRS Performance at Efarina Etaham Berastagi Hospital

Based on the results of research conducted at the Efarina Etaham Berastagi Hospital, using bivariate analysis it was found that the p value = 0.000 (<0.05), this shows that there is a relationship between Environment and SIMRS Performance at the Efarina Etaham Berastagi Hospital. From the multivariate results using the logistic regression test, the Environment variable significantly influences patient satisfaction with a sig. <0.05.

This research is in line with (Erlirianto, 2016) who shows that the organizational environment shows a significant influence on the implementation of information systems. The regulations in force in an organization will influence management information system development plans and the policies implemented by the organization in implementing its information system.

According to (Izzati, 2017), encouragement from the organizational environment can significantly provide motivation to improve the performance of organizational members and system providers. This can be achieved through strategy and management such as leader support, team work and effective communication which are formed by involving the roles and abilities of employees.

From the results of the questionnaire tabulation, it shows that 52% of respondents agree that the SIMRS used is very helpful in saving time in presenting information and also 55% of respondents agree that SIMRS helps in improving communication between data in each work unit and has been integrated with computerization facilities. It's just that sometimes the obstacle in integrating this data is the quality of the network which sometimes has problems causing reporting to be hampered.

Influence of System Quality on SIMRS Performance at Efarina Etaham Berastagi Hospital

Based on the results of research conducted at the Efarina Etaham Berastagi Hospital, using bivariate analysis it was found that the p value = 0.006 (<0.05), this shows that there is a relationship between System Quality and SIMRS Performance at the Efarina Etaham Berastagi Hospital. From the multivariate results using the logistic regression test, the System Quality variable does not significantly influence patient satisfaction with a sig. value >0.05.

According to (Hakam, 2016) in developing information systems, management or organizational managers must also be observant in looking at the condition and availability of existing infrastructure, because even though they have good applications, but are not supported

by adequate infrastructure or technology, the SIM will not be able to operate effectively. maximum.

This is in accordance with James' theory in (Bustamam, 2016) that a system is considered to be running effectively if it is able to meet the needs and desires of quality information for users in the company both individually and as a group. The information is quality if it is accurate, timely, complete and concise.

The Influence of Information on SIMRS Performance at Efarina Etaham Berastagi Hospital

Based on the results of research conducted at the Efarina Etaham Berastagi Hospital, using bivariate analysis it was found that the p value = 0.000 (<0.05), this shows that there is a relationship between Information and SIMRS Performance at the Efarina Etaham Berastagi Hospital. From the multivariate results using the logistic regression test, the Information variable does not significantly influence patient satisfaction with a sig. value> 0.05.

According to (Yusuf, 2016), the quality of information is assessed from the level of accuracy and level of relevance of the information data. It is said to be accurate if the information is free from error and is not biased. Meanwhile, information is said to be relevant if the information has benefits for its users. The relevance of information for each person to another is different. So if the quality of the information in a system is very good or is considered to have good quality, it will increasingly attract users to use the system.

In this research, the quality of information does not affect SIMRS performance, this can happen because users still do not fully use the menus that can be accessed from the SIMRS application.

The Influence of Service Quality on SIMRS Performance at Efarina Etaham Berastagi Hospital

Based on the results of research conducted at the Efarina Etaham Berastagi Hospital, using bivariate analysis it was found that the p value = 0.000 (<0.05), this shows that there is a relationship between Service Quality and SIMRS Performance at the Efarina Etaham Berastagi Hospital. From the multivariate results using the logistic regression test, the Service Quality variable does not significantly influence patient satisfaction with a sig. value> 0.05.

(Yessy, 2016) which states that the higher the service quality, the higher the user satisfaction. This indicates that the better quality of information system services will influence increased user satisfaction. If information system users feel that the quality of service provided by the application program provider is good, then the user will tend to feel satisfied using the system.

In line with the respondents' answers in the questionnaire, 41.8% of respondents answered that they agreed that the SMIRS application service provider was willing to provide assistance to users, 40% of respondents agreed that printers were available to print the required reports and 38.2% of respondents answered that they agreed. Application provider SIMRS provides a server as the main database for the data that has been input. However, 23.6% of respondents stated that they did not agree that SMIRS application service providers were willing to provide assistance to users. This is because human resources in the IT department are still lacking.

CONCLUSION

Based on the results of the research and discussions that have been carried out, the conclusions of this research are as follows is there is a relationship between system use and Hospital Management Information System performance at Efarina ETaham Berastagi Hospital, there is a relationship between user satisfaction and Hospital Management Information System performance at Efarina ETaham Berastagi Hospital, there is a relationship between structure and Hospital Management Information System performance at Efarina ETaham Berastagi Hospital, there is a relationship between environment and Hospital Management Information System performance at Efarina ETaham Berastagi Hospital, there is a relationship between system quality and Hospital Management Information System performance at Efarina ETaham Berastagi Hospital, there is a relationship between information and Hospital Management Information System performance at Efarina ETaham Berastagi Hospital, there is a relationship between service quality and Hospital Management Information System performance at Efarina ETaham Berastagi Hospital, the results of the univariate analysis show that there are 2 variables that significantly influence Hospital Management Information System performance

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