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Model of Improving The Utilization of Hospital Management Information System (SIMRS) Based On Human, Organization Technology-Fit (Hot-Fit) Method at RSPI Prof. Dr. Sulianti Saroso

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A B S T R A C T

Introduction: Hospital management requires fast and accurate data management to create quality services. As a result, an assessment is required, particularly utilizing the HOT-Fit method, which was established with knowledge and regulation in mind, to assess the information system in this study.
Objectives: This study aims to analyze the influence of humans, organization, technology, knowledge, and regulation on benefits either simultaneously or partially.
Method: This study uses quantitative research methods with the type of research that is causality explanatory. The analytical method used is multiple linear regression analysis. Respondents in this study were the respondents of RSPI Prof. Dr. Sulianti Saroso who operates SIMRS directly as many as 154 employees.
Result: The results of this study obtained that there is a significant influence from Human, Organization, Technology, Knowledge, and Regulations that affect the benefits of 80.9%. Human, Organization, Technology, Knowledge, and Regulation partially affect the benefit, with the provisions of the regulation being the variable that has the highest influence on the benefit.
Conclusion: Regulation is the most dominant variable affecting the benefits of using SIMRS. Follow-up in this case, especially regulations is that the hospital is expected not to replace the developer and use a qualified developer who understands all business processes in the hospital. For further researchers, it can analyze how the influence of other variables on benefits and analyze how the influence of knowledge and regulation variables if they become mediating variables.

Keywords: HOT-Fit, Information System Evaluation, Information System Governance, Health SIM.

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Introduction

The hospital is a complex, professional, and capital-intensive health care institution. This complexity arises because hospital services involve various service functions, education, and research and include various actions and medical disciplines. For hospitals to be able to carry out such complex functions, hospitals must have professional human resources both in the medical technology field and in health administration. according to (the President of the Republic of Indonesia, 2014), the main function of the hospital is to provide and organize health efforts that are healing and recovering patients.[1]

Hospital Management Information System (SIMRS) is an attempt to provide accurate, timely, and appropriate information to support the process of management functions and decision-making in providing health services in hospitals. Hospital Management Information Systems (SIMRS) have been developed for various clinical functions such as electronic medical records (EHR), computerized physician order entry (CPOE), and clinical decision support systems (CDSS) to support the quality of medical services and improve patient safety.

Evaluation of an information system is also a real effort to find out the actual condition of an information system implementation. With this evaluation, the achievements of the implementation of an information system can be identified and further actions can be planned to improve the performance of its implementation. The Information system evaluation method that can be used is the HOT-Fit method.

This evaluation method according to theory (Yusof, 2008) (Sukma & Budi, 2017) is a method by looks at the whole system by placing 4 important components in the information system, namely humans (Human), organization (Organization), and technology (Technology) and the benefits (Net Benefit) can also be seen from the 4 components of the HOT-Fit variable and the suitability of the relationship between them as the determining factors for the successful implementation of an information system.[2,3]

According to the theory of (Yusof, 2006) provides a new framework that can be used to evaluate information systems is called the Human–Organization–Technology (HOT)–fit framework. This model places important components in information systems, namely humans (humans), organizations (Organization), and technology (Technology).[4]

In this study, researchers will carry out a Model for Increasing the Utilization of Hospital Information Systems (SIMRS) Based on the Human, Organizational Technology-Fit (HOT-FIT) method which was developed by adding elements of knowledge and regulations at the Prof. Infectious Disease Hospital. Dr. Saroso. The results of this model, the system can be developed from the three main factors above, and according to research from (Igiani, 2012) that the HOT Fit model can answer any variables that affect the success of the SIMRS implementation and make it assessment criteria carried out in hospitals in research (Igiani, 2012).[5,6] This study adds the position of knowledge and regulation variables in supporting the improvement of HOT Fit on the implementation of SIMRS RSPI Prof. Dr. Sulianti Saroso has never been measured regarding the success of its implementation.

Infectious Diseases Hospital Prof. Dr. Sulianti Saroso (RSPI Sulianti Saroso) is a Vertical Hospital owned by the Ministry of Health since 1994 which is located on Jalan Sunter Permai Raya, North Jakarta. It has a land area of 4 ha and a building area of 16,487.95 M2,

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then in 2017 and has been declared a Plenary PASS based on the KARS-SERT/667/III/2017 Certification on March 31, 2017, finally on June 9, 2017, RSPI Prof. Dr. Sulianti Saroso based on the Decree of the Head of the Investment Coordinating Board No. 7/1/10/KES/PMDN/2017 regarding the operational permit of RSPI Prof. Dr. Sulianti Saroso became a special class A hospital.

In carrying out good services RSPI Prof. Dr. Sulianti Saroso is supported by the hospital information system contained in the hospital information system Key Performance Indicators (KPI/KPI) and Business Strategic Plan (RSB) for 2020-2024 related to Hospital Management Information System (SIMRS) with program/activity targets to realize a complete and integrated internal and external IT system with integrated IT level performance indicators, according to the following table:

Table 1.1 Key Performance Indicators 2020 – 2024

Program/Activity Target	Performance Indicator	Weight	Target				
			2020	2021	2022	2023	2024
Realization of a complete and integrated internal and external IT system	Integrated IT Level	6%	Integrated Enterprise	Integrated Enterprise	Integrated Enterprise	Advanced	Advanced

In the implementation of SIMRS at RSPI Prof. Dr. Sulianti Saroso still has several problems, such as the operational function of the system, SIMRS that has not been fully integrated between departments, SIMRS responses that are not appropriate when operating, there are still conventional records, and there is no evaluation of the success rate of SIMRS implementation. Specifically, the problem can be described, namely the first on the human aspect, namely the frequent occurrence of misinformation. Second, in the technological aspect, there was a refusal from the IRNA room or the nurse when the Nutrition Application would be socialized. Third, on the organizational aspect, namely the lack of SIMRS training. Fourth, on regulatory aspects that cannot be accessed. Fifth on the aspect of knowledge, namely the lack of experts in the field of technology and information. The results of this study contribute, namely providing an overview of SIMRS achievements and improving or perfecting the SIMRS, so that it will be able to run optimally following the vision and mission of RSPI Prof. Dr. Sulianti Saroso which will then have a positive impact on optimal service.

Based on the explanation, the authors are interested in conducting research entitled "Model for Increasing the Utilization of Hospital Information Systems (SIMRS) based on the Human Method, Organization Technology-Fit (HOT-FIT) at the Infectious Diseases Hospital Prof. Dr. Sulianti Saroso".

The Human Component assesses information systems from the system use side on the frequency and breadth of information system functions and investigation.[4] System use also relates to who uses (who use it), the level of users (level of user), training, knowledge, expectations, and attitudes to accept or reject the system. This component also assesses the system from the aspect of user satisfaction. Research from (Satria, 2015) user satisfaction can be related to the perception of usefulness and user attitudes towards information systems which are influenced by personal characteristics.[7]

Study Laurent Monalizabeth Erlirianto, Ahmad Holil Noor Ali (2015) entitled The Implementation of the Human, Organization, and Technology-Fit (HOT-Fit) Framework to

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Evaluate the Electronic Medical Record (EMR) System in a Hospital found that human influence on EMR is the key to successful technology adoption in a hospital.

The Organizational Component assesses the system from the aspect of the organizational structure and the organizational environment in which the information technology system is implemented according to theory.[4] Research conducted by Lynn, Theo; Liang, Xiaoning; Gourinovitch, Anna; Morrison, John P.; Fox, Grace; Rosati (2018) found that organizational factors significantly influence the organization's cloud computing adoption decisions for *high-performance computing* (HPC).[8]

Technology is the entire means to provide goods needed for survival and comfort of life man according to theory.[4] Research conducted by Mehrbakhsh Nilashi, Hossein Ahmadi, Ali Ahani, Othman Ibrahim (2015) found that Technological factors significantly influence an organization's cloud computing adoption decisions for high-performance computing (HPC).[9]

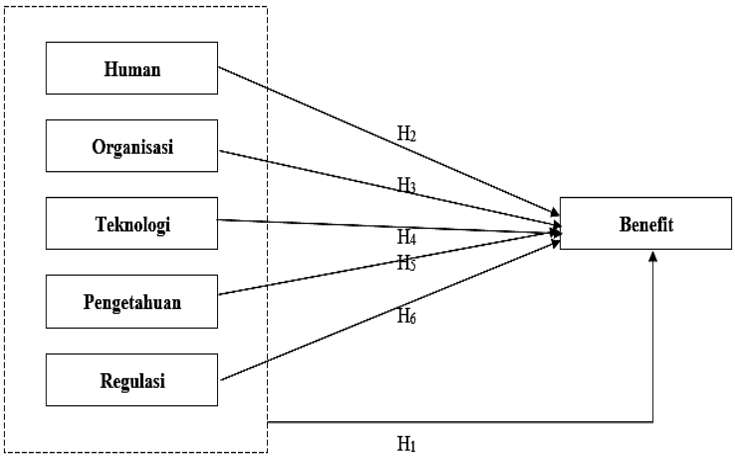
Knowledge is fact, truth, or information obtained through experience or learning according to theory.[10] Notoatmodjo (2012), knowledge is the result of knowing and this occurs after someone has sensed an object. Sensing occurs through the human senses, namely, the senses of hearing, sight, smell, feeling, and touch.[11]

Some human knowledge is obtained through the eyes and ears. The knowledge covered in the cognitive domain according to the theory of Notoatmodjo (2012) has 6 levels, namely knowledge, comprehension, application, analysis, synthesis, and evaluation.[11] Regulation is a regulation that is designed, formulated, compiled, or made in such a way to help control a group of people, institutions, organizations, and companies with certain goals according to theory.[10] In research by (Triyanti and Weningsih, 2018) regulations will adjust the system to be built, for example, administrative data. Based on the research data, the objectives of this study are: to analyze the influence of humans, organization, technology, knowledge, and regulation on benefits.[12]

Method

This study uses quantitative research methods with the type of research that is causality explanatory. The data collection method is a survey, the researcher selects some respondents as a sample and submits a list of questions (questionnaires). A research location is a place or object for conducting research. The research location is at the Prof. Infectious Disease Hospital. Dr. Sulianti Saroso in a period of 3 months, namely June 2021 to August 2021.

Figure 1. Research Constellation



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The population in this study was the staff of RSPI Prof. Dr. Sulianti Saroso who operates SIMRS directly as many as 250 employees. The number of samples in this study was 154 respondents using the Slovin formula and purposive sampling technique. The sample criteria in this study are information system users who work at RSPI Prof. Dr. Sulianti Saroso, has a minimum education of high school, and Information system user with a working period of more than 1 year and interact with SIMRS at RSPI Prof. Dr. Sulianti Saroso for 1 year.

The data in this study were collected through questionnaires distributed to respondents. The research questionnaire consists of 54 question items which are divided into four variables, namely Human, Organization, Technology, Knowledge, Regulation, and Benefit. The research questionnaire was prepared by submitting a closing statement and answer choices to be submitted to the research sample with a Likert interval scale. The questionnaire contains questions about the characteristics of the respondents including gender, age, education, years of service, and duration of SIM usage.

Before conducting research with saturated samples studied, the researchers conducted a validity and reliability test using the SPSS 21 program with the method *Product Moment*, to determine whether the questionnaire is valid and reliable or not. In this study, the validity test used the SPSS 21 program with the method *Product Moment*. In the validity test, a variable is declared valid and can be analyzed further if it meets the criteria, namely if the calculated r-value is greater (>) than the r table. By using an Alpha value of 5%, from all 50 respondents, a rtable value of 0.279 was obtained.

In the human variable, the 6 items have an r count> 0.279 so all items are valid. In the organizational variable obtained the 6 items have r count> 0.279 so that all items are valid. In the technology variable, the 16 items have an r count> 0.279 so all items are valid. In the knowledge variable, the 7 items have an r count> 0.279 so all items are valid. In the regulation variable, the 11 items have an r count > 0.279 so all items are valid. In the benefit variable, the 8 items have an r count> 0.279 so that all items are valid.

The next instrument measurement is the reliability test which is used to measure how far the measuring instrument used can be trusted. The measuring instrument used will be said to be reliable if someone's answer to the question remains consistent or stable if it is done repeatedly. The variable has a reliable instrument if the value of Cronbach's alpha is above 0.60. The calculated value of Cronbach's alpha is human = 0.868; organization=0.863; technology= 0.934; Knowledge=0.875; and Regulation = 0.906; and Benefit=0.923. The results of the reliability test showed that each variable had a Cronbach's alpha value above 0.60. Therefore, it can be interpreted that the instrument for each variable is reliable. This means that the instrument used has consistency as a measuring tool.

Table 2. Validity and Reliability Test Results

Variable	r Table	r limit	Cronbach's Alpha	Information
Human Factor	0.361	0.60	0.868	Valid & Reliable
Organizational Factor	0.361	0.60	0.863	Valid & Reliable
Technological Factor	0.361	0.60	0.934	Valid & Reliable
Knowledge Factor	0.361	0.60	0.875	Valid & Reliable
Regulatory Factor	0.361	0.60	0.906	Valid & Reliable
Benefits	0.361	0.60	0.923	Valid & Reliable

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Then, after the questions were declared valid and reliable, the researchers conducted sampling using descriptive data analysis techniques using the Three Box Method which divided the question score items into low, medium, and high and hypothesis testing techniques through Multiple Regression.

Review Ethics

This research has passed the ethical test by the Esa Unggul University Code of Ethics Enforcement Council, Research Ethics Committee, with an ethical review number: 0219-21219/DPKE- KEP/FINAL-EA/UEU/VIII/2021 dated 6 August 2021 and research permission from the President Director Hospital with Number: LB.02.06/XXXVIII/5132/2021 August 9, 2021.

Result

The number of respondents based on gender obtained the most are women as many as 97 employees or 63% while male respondents as many as 57 employees or 37%. This shows that female employees are the employees who use and operate the SIMRS at RSPI Prof. Dr. Sulianti Saroso.

The number of respondents based on education obtained at the most is the strata 1 or undergraduate level as many as 80 employees or 51.9%, then at the high school level, namely 8 employees or 5.2%, the Diploma level is 32 employees or 20.8%, and the Postgraduate level (S2/S3), namely 34 employees or 22.1%. This shows that employees who use and operate SIMRS at RSPI Prof. Dr. Sulianti Saroso are an employee with a high level of education.

The number of respondents based on age was obtained at the most 36-40 years old, namely 34 employees or 22.1% and at the age of 41-45 years also showed a high number of 32 employees or 20.8%. The number of respondents based on age, aged 20-25 years and 51 years and over showed the least frequency. This shows that employees who use and operate SIMRS at RSPI Prof. Dr. Sulianti Saroso are an employee of productive age.

The number of respondents based on years of service obtained is at most over 10 years, as many as 93 employees or 60.4%, while respondents with working years under 5 years are 26 employees or 16.9%, and respondents with 5-10 years working period are as many as 35 employees or 22.7%. This shows that employees who use and operate SIMRS at RSPI Prof. Dr. Sulianti Saroso at most are employees who have long worked at RSPI Prof. Dr. Sulianti Saroso.

The number of respondents based on the length of use obtained was at most over 5 years, namely 108 employees or 70.1%, while respondents with SIMRS usage duration under 1 year were 11 employees or 7.1%, duration of use 1-3 years, namely 21 respondents or 13.6%, and respondents with 4-5 years of use are 14 employees or 9.1%. This shows that employees who use and operate SIMRS at RSPI Prof. Dr. Most of Sulianti Saroso are employees who have been using SIMRS for a long time. The researcher analyzed with descriptive analysis in which this analysis technique got an overview of the respondents' answers regarding the research variables used. This analysis was carried out using the Index Analysis Technique. Based on the average index score of the Three Box Method, the average score of each variable was obtained as follows:

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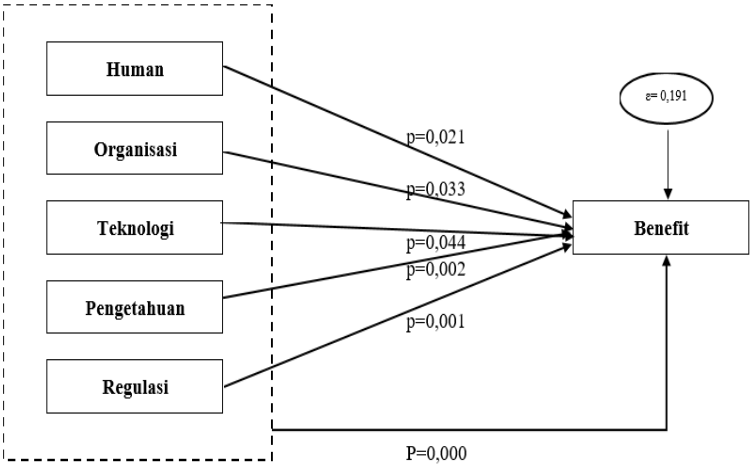
Table 3. Three Box Method Score Matrix

Variable	Score			Results (%)
	Low	Currently	Tall	
Human			□	80.2
Organization			□	79.1
Technology			□	77.1
Knowledge			□	81.4
Regulation			□	81.1
Benefits			□	82.3

The average index score of all research variables obtained a score of >70%. Based on the score index category based on the three-box method, the average is at a high score level. Testing the influence of variables human factors, organization, technology, knowledge, and regulation of benefits used multiple linear regression analysis methods. The results of multiple regression obtained an R2 value of 0.809 so that it is obtained = 1-0,809 = 0.191. Thus the path diagram of the model is obtained as follows:

Figure 2. Multiple Regression Results



Hypothesis Testing Stage

Partial Test

The partial test aims to test the effect of each independent variable on the dependent variable. The independent variable has a significant effect if the significance is valueless than 0.05 and if the value of t count > t tablet (0.05; (154-6) = 1.976.

1) The human factor variable has an at-count value of 2.342 and a significance of 0.021 so that the significance value is less than 0.05, so there is a partially significant influence of the human factor variable on *benefits*. The regression coefficient value of 0.192 indicates a positive influence, meaning that the higher the value of the human factor, the higher the value of the human factor *benefits* will increase and vice versa. This coefficient value also means *benefits* will increase by 0.192 units for every one-unit increase in the human factor.
2) The organizational factor variable has at-count value of 2.146 and a significance of 0.033 so that the significance value is less than 0.05, so there is a partially significant influence of the organizational factor variable on *benefits*. The regression coefficient

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value of 0.155 indicates a positive influence, meaning that the higher the value of organizational factors, the higher the value of the organizational factor *benefits* will increase and vice versa. This coefficient value also means *benefits* will increase by 0.155 units for every one-unit increase in organizational factors.

3) The technological factor variable has an at-count value of 2.031 and a significance of 0.044 so that the significance value is less than 0.05, so there is a partially significant influence of the technological factor variable on *benefits*. The regression coefficient value of 0.182 indicates a positive influence, meaning that the higher the value of the technology factor, the higher the value of the technology factor *benefits* will increase and vice versa. This coefficient value also means *benefits* will increase by 0.182 units for every one-unit increase in the technology factor.

4) The knowledge factor variable has an at-count value of 3.213 and a significance of 0.002 so that the significance value is less than 0.05, so there is a partially significant influence of the knowledge factor variable on *benefits*. The regression coefficient value of 0.203 indicates a positive influence, meaning that the higher the knowledge factor value, the higher the value of the knowledge factor *benefits* will increase and vice versa. This coefficient value also means *benefits* will increase by 0.203 units for every one-unit increase in the knowledge factor.

5) The regulatory factor variable has an at-count value of 3.534 and a significance of 0.001 so that the significance value is less than 0.05, so there is a partially significant influence of the regulatory factor variable on *benefits*. The regression coefficient value of 0.241 indicates a positive influence, meaning that the higher the value of the regulatory factor, the higher the value of the regulatory factor *benefits* will increase and vice versa. This coefficient value also means *benefits* will increase by 0.241 units for every one-unit increase in the regulatory factor.

Simultaneous Test

A simultaneous test aims to determine whether there is a joint effect of the independent variable on the dependent variable. This test can be seen in the ANOVA table output. There is a joint influence between independent variables if the calculated F value is greater than F table and the significance is less than 0.05. The Fcount value is 125.310 and the significance is 0.000 so that the calculated F value is greater than F table (F (0.05;5; (154-6) = 2.275) and the significance is less than 0.05, it can be concluded that there is a simultaneous effect of human factors, organization, technology, knowledge, and regulation of benefits.

Coefficient of Determination

The coefficient of determination aims to determine the magnitude of the influence of the independent variable on the dependent variable. The value of the coefficient of determination will be 0 to 1, the closer to 1 the greater the influence will be. The result of the coefficient of determination above is 0.809 which can be said variable human, organizational, technological, knowledge, and regulatory factors can affect benefits as big as 80.9% while the rest is influenced by other variables that are not the focus of this study.

Based on the results of the analysis with multiple regression, it can be concluded that: Human factors, organization, technology, knowledge, and regulation of benefits, so it can be concluded that H1 is accepted. There is a partially significant influence of the human factor variable on *benefits*, so it can be concluded that H2 is accepted. There is a partially significant influence of organizational factor variables on *benefits*, so it can be concluded that H3 is

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accepted. T against *benefits*, so it can be concluded that H4 is accepted. T against *benefits*, so it can be concluded that H5 is accepted. There is a partially significant influence of the regulatory factor variable on *benefits*, so it can be concluded that H6 is accepted. The following is a hypothetical recapitulation table:

Table 4. Hypothesis Results

No	Hypothesis	Sig.	Information
1	Human, Organization, Technology, User Knowledge and Regulation Simultaneously Significant Effect on Benefit	0.000	H1= Accepted
2	Human Significant Effect on Benefit	0.033	H2= Accepted
3	Organization Significant Effect on Benefit	0.044	H3= Accepted
4	Technology Significant Effect on Benefit	0.002	H4= Accepted
5	Knowledge Significant Effect on Benefit	0.001	H5= Accepted
6	Regulation Significant Effect on Benefit	0.021	H6= Accepted

Discussion

Human, Organization, Technology, User Knowledge and Regulation Simultaneously Significant Effect on Benefit

There is a simultaneous influence of human factors, organization, technology, knowledge, and regulation of benefits. Variable human, organizational, technological, knowledge, and regulatory factors can affect benefits by 80.9%. In the results of the three boxes, it is found that the five variables are *human*, organization, technology, knowledge, and regulation have achievements in the high category so that it is in line with the achievement of variable benefits, namely in the high category. In the results of the frequency distribution of each answer, each variable on each item tends for respondents to agree (option 4). This means that there are benefits that are very good for SIMRS users because employees have human, organizational, technological, and technological factors, knowledge, and good regulation.

HOT Fit is one of the theoretical frameworks used to evaluate information systems. This model was originally developed from the merger of the Delone & Mclean information system success model with the IT Organization Fit Model proposed by Scott Morton. The HOT Fit model comprehensively describes the interpretation of complexity, interrelationships between people, organizations, and technology. This evaluation method makes it clear in research based on the HOT Fit evaluation framework starting from human, organization, and technology according to research.[13]

Research conducted by Erimalata (2016) the success of the application of information technology must be measured comprehensively by including the involvement of the organization in the use of information technology by users.[14] According to theory (Yusof, 2006)To measure the success of a more comprehensive information system in providing benefits to an organization, it is necessary to develop a HOT Fit model with several modifications to assess the success of the information system.[4]

Human Significant Effect on Benefit

There is a significant positive effect of the human factor variable on *benefits*. This shows that the higher the value of the human factor, the *benefits* will increase and vice versa. In the three-box results, it is found that the factor *human* has achievements in the high category so that it will encourage high benefits from using SIMRS. Users who can operate SIMRS properly will encourage hospital performance and services. The existence of SMIRS that synergizes with each other will provide convenience in accessing information, will facilitate

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employee interaction between units and work becomes more flexible so this will increase the usefulness of SIMRS in supporting hospitals to provide the best service which will certainly have a positive impact on customer satisfaction.

The results of this study are in line with (Airo Dhanaris Simorangkir, 2020) which states that the human variable affects the benefits in a case study of SIMRS implementation at Dinda Hospital Tangerang.[15] This research is also in line with (Andika Bayu S and Izzati Muhimmah, 2013) which states that human factors affect the success of SIMRS implementation at the PKU Muhammadiyah Sruweng Hospital.[16]

According to theory Yusof (2006)states that the human component assesses information systems in terms of system use on the frequency and breadth of information system functions and investigations.[4] System use is also related to who uses it (who uses it), the level of users (level of user), training, knowledge, motivation to use, attitudes to accept or reject the system, and user satisfaction with the system. User satisfaction on the system can be related to the perspective of benefits and user attitudes towards information systems which are influenced by personal characteristics. There is an addition to the framework from the previous frameworks, namely to include system development variables (System Development) into it. According to theory (Yusof, 2006), system development consists of planning, project management, project schedule, and relationship with IT strategy to build a highly collaborative system environment to maximize efficiency and accuracy of project monitoring was quite successful.[4]

Organization Significant Effect on Benefit

There is a significant positive effect of organizational factor variables on *benefits*. This shows that the higher the value of organizational factors, the more *benefits* will increase and vice versa. In the three-box results, it is found that the factor the organization has achievements in the high category so that it will encourage high benefits from the use of SIMRS. Hospital management support and good technical support from hospitals in the use of SIMRS will maximize the benefits of SIMRS so that service activities in hospitals can run well too. The existence of support from hospitals regarding network facilities as well as support for good hardware and software will increase hospital productivity and overall will increase the benefits of using the SIMRS.

The results of this study are in line with (Lourent Monalizabeth Erlirianto, Ahmad Holil Noor Ali, 2015) which states that organizational aspects consisting of structure and environment, have a positive and significant influence on the implementation of information systems in hospitals.[17] This research is also in line with (Lynn, Theo; Liang, Xiaoning; Gourinovitch, Anna; Morrison, John P.; Fox, Grace; Rosati, 2018) who found that organizational factors significantly influence organizational cloud computing adoption decisions for high-performance computing (HPC).[8]

According to theory (Hutapea, 2008) Organizational values are values owned by an organization that are felt and understood by all members of the organization.[18] While research from (Ardinasari, 2017) defines organizational culture as patterns of beliefs, symbols, rituals, and myths that function as glue to unite the organization and always develop over time. Organizational culture is often described in a shared sense. Thus, the organizational culture that supports the integration of information technology and organizational growth can be a success factor in developing the implementation of information systems. Thus, organizational

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culture and information systems can influence each other, and the components of information systems are part of organizational culture.[19]

Technology Significant Effect on Benefit

There is a significant positive effect of the technological factor variable on *benefits*. This shows that the higher the value of the technological factor, the higher the value of the technology factor *benefits* will increase and vice versa. In the three-box results, it is found that the factor technology has achievements in the high category so that it will encourage high benefits from using SIMRS. The existence of high access speed and actual technology in SIMRS services will increase the ease of employees in accessing information and providing the best service. The presentation of updated data as well as data security will improve the presentation of complete information and the convenience of employees in working and accessing information.

The results of this study are in line with (Ahmadi, 2017) who found that technology had a significant effect on the adoption of hospital information systems (HIS) in Malaysian public hospitals.[20] The results of this study are also in line with (Mehrbakhsh Nilashi, Hossein Ahmadi, Ali Ahani, Othman Ibrahim, 2015) who found that technology is an important factor in the adoption of information systems in hospitals.[9]

Information technology is one of the technologies that is developing rapidly at this time. With advances in information technology, access to available data or information can take place quickly, efficiently, and accurately. Several important things encourage the need for information technology in organizations, including decision making that is not based on information, the available information is irrelevant, the existing information is not utilized by management, the information is not timely, too much information, the information is available inaccurate, there is duplication of data, and there is data in which the method of utilization is not flexible.

Knowledge has a significant effect on benefits

There is a significant positive effect of the knowledge factor variable on *benefits*. This shows that the higher the value of the knowledge factor, the more *benefits* will increase and vice versa. In the three-box results, it is found that the factor Overall knowledge has an achievement in the high category so that it will encourage high benefits from using SIMRS. User knowledge related to understanding computers, understanding the internet, understanding organizational systems in hospitals, and understanding the benefits of SIMRS shows that there is a very good understanding of SIMRS user employees. SIMRS users who have good knowledge will make it easier for users to use SIMRS so that access to information and use of SIMRS becomes easier and improves employee performance.

According to the Decree of the Minister of Health of the Republic of Indonesia Number 82, Article 4, of 2013, regarding the hospital management information system, institutions are obliged; every hospital must carry out management and development of SIMRS, implementation of management and development of SIMRS as referred to in paragraph (1) must be able to improve and support the process of health services in hospitals which include; speed, accuracy, integration, service improvement, efficiency improvement, ease of reporting in operational implementation, speed of decision making, accuracy and speed of problem identification and ease of strategy formulation in managerial implementation, work culture, transparency, coordination between units, system understanding and cost reduction

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administration in the implementation of the organization. Based on research conducted by (Augustin, 2016) it can be concluded that system quality and service quality affect humans, system quality and service quality affect organizations, humans do not affect benefits, but organizations affect benefits. While the benefits/benefits of using SIMRS in the registration section are to reduce the error rate.[21]

Regulation Has Significant Effect on Benefit

There is a significant positive effect of the regulatory factor variable on *benefits*. This shows that the higher the value of the regulatory factor, the higher the value of the regulatory factor *benefits* will increase and vice versa. In the three-box results, it is found that the factor regulations have achievements in the high category so that it will encourage high benefits from the use of SIMRS. The regulations consist of having a separate unit in the hospital, the existence of SIMRS analyst staff, the presence of programmer staff, the existence of network maintenance staff, the obligation to administer SIMRS, the integration with BPJS Health, the SIMRS decree, cooperation with the developer, the involvement of hospitals with the development of SIMRS, the existence of SIMRS user training. Overall regulatory measurement indicators show high achievement so this will increase the perceived benefits of using SIMRS. Employees find it easier to use SIMRS which will certainly improve hospital performance and productivity.

Regulation is a public activity that will be carried out by the community must meet standards and regulations rule according to service policies that have been set for a service activity. As based on research conducted by (Cheng & Tzeng, 2011). Based on the results of data processing, the Sig.t value <0.05, it is concluded that part there is a significant influence between human, organization, technology, user knowledge, and regulatory factors on the Net Benefit SIMRS.[22]

Conclusion

There is a simultaneous influence of human factors, organization, technology, knowledge, and regulation on the benefits of implementing SIMRS RSPI Prof. Dr. Sulianti Saroso. This shows that there is good continuity between *humans*, organization, technology, knowledge, and regulation will increase the benefits of using SIMRS. The hospital does not only focus on developing one aspect but these five aspects can be further maximized and improved.

There is an influence from human factors on the benefits of implementing SIMRS RSPI Prof. Dr. Sulianti Saroso. This shows that hospitals are expected to be able to improve the quality of SIMRS users, namely by training. There is an influence from organizational factors on the benefits of implementing SIMRS RSPI Prof. Dr. Sulianti Saroso. This shows that the hospital as an organization can maximally provide SIMRS services so that employees are easier and better at completing their work. There is an influence from technological factors on the benefits of implementing SIMRS RSPI Prof. Dr. Sulianti Saroso. This shows that the technology used in SIMRS can be of higher quality and easier to use so the hospital is expected to use quality developers so that the quality of SIMRS is even better.

There is an influence from the knowledge factor on benefits in the implementation of SIMRS RSPI Prof. Dr. Sulianti Saroso. This shows that the knowledge of SIMRS users will increase benefits so that the hospital can provide training to users both regarding the use of SIMRS and other materials such as hospital organizational systems. There is an influence from

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regulatory factors on the benefits of implementing SIMRS RSPI Prof. Dr. Sulianti Saroso. This shows that good regulation will increase the benefits of using SIMRS. Therefore, the hospital can formulate policies that support the development of SIMRS according to the 2020-2024 Business Strategic Plan (RSB) related to the Hospital Management Information System (SIMRS) with the program/activity target of realizing a complete and integrated internal and external IT system with integrated IT level performance indicators.

Conflict of Interest

The researcher states that this research is independent of individual and organizational conflicts of interest.

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