# Effectiveness of the use Hospital Information and Management System (SIMRS) for Services Based on Hot-Fit Theory

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A B S T R A C T

The use of a computer-based Hospital Information and Management System (SIMRS) in the Medical Record unit is carried out in an integrated manner. The data management process includes, among others, data collection (registration), data processing (assembling, coding, indexing), and data reporting. The SIMRS implementation at the general hospital of Az-Zahra has not yet been fully implemented. The objective of this study was to determine the effectiveness of the use of hospital information and management systems (SIMRS) for services at the general hospital of Az-Zahra Kalirejo through the HOT-FIT theory. This type of research was qualitative, the research design used exploratory with the objective of describing the effectiveness of the use of Hospital Information and Management systems for services at the general hospital of Az-Zahra Kalirejo. The population in this study was 134 people, and the sample in this study was 9 informants, namely the doctor in charge of services (DPJP), general practitioner and head of finance. The results of the study are known in the human aspect, SIMRS officers at the general hospital of Az-Zahra already understand how to use SIMRS, but for specialist doctors and general practitioners they are still assisted by nurses in inputting. In the organizational aspect, it is known that the directors, management and staff of the hospital fully support the use of SIMRS. The technology aspect of SIMRS at the general hospital of Az-Zahra is in accordance with the accreditation standards of the Hospital and Social Security Administrator's Health, but often experiences problems with the internet network, which can interfere with the operation of using SIMRS. Researchers suggest that SIMRS training be held for general practitioners and specialists, as well as improving the internet network so that the connection is even better.

## INTRODUCTION

The hospital is one of the organizations engaged in the field of health services which is very complex and full of professions, technology-intensive, and rules-intensive. Organizations in hospital health services often experience difficulties in processing information for both internal and external needs, so it is necessary to improve the management of information that is efficient, fast, easy, accurate, and safe. One form of its application is through a service system by utilizing information technology through the use of a computer-based management information system (Herlambang, 2016).

The Hospital Management Information System is known as SIMRS. SIMRS is an application program or computer software created to assist hospital management in performing data entry, processing data and making patient data reports. Hospital management information systems are an inseparable part of overall hospital services, and are even one of the main joints in daily activities.

The general hospital of Az-Zahra is one of the Type C Hospitals located in the Kalirejo Region, Central Lampung. SIMRS at the general hospital Az-Zahra is a computer-based program that has been used since 2014. SIMRS is used to carry out data collection activities, data processing, data information, data analysis and conclusion, as well as

conveying information stored in hardware systems. SIMRS at the General Hospital of Az-Zahra is not yet fully operational.

The use of computer based SIMRS in the Medical Record unit is in the form of a series of integrated activities for management processes such as data collection (registration), data processing (assembling, coding, indexing), and data reporting. The implementation of SIMRS in the medical record section still has obstacles, including the lack of SIMRS members or officers where the members only consist of two people who have duties as system support hardware, system support software, and system support networks.

The SIMRS officer said that the SIMRS at the General Hospital of Az-Zahra had not been running properly. Not all units are integrated because there is still much to be prepared and the large cost required to develop an integrated SIMRS, but the SIMRS application in the medical record section has been used for 7 years. The problem faced in the implementation of SIMRS is the lack of experts in the field of technology and information.

SIMRS officers only consist of two people who have duties as system support hardware, system support software, system support network which should ideally be four people. Another obstacle faced by medical record officers is related to information systems, including the medical record information system that sometimes experiences errors and takes a long time to respond (loading) so that it can hinder service to patients. Based on this, researchers are interested in conducting research with the title "Effectiveness of the Use of Hospital Information and Management Systems (SIMRS) for Services at the General Hospital Az-Zahra Kalirejo."

## METHOD

### a. Variable Identification

This type of qualitative research is a research method used to examine the condition of a natural object (as opposed to an experiment) where the researcher is the key instrument, data collection techniques are carried out by triangulation, data analysis is inductive, and qualitative research results emphasize meaning rather than generalization (Sugiyono, 2018).

The variables in this study are based on the Hot-Fit theory, namely: Human, Organization, Technology, SIMRS.

### b. Research Subject

#### 1. Informants

In this study, the population was 134 health care workers consisting of 13 doctors in charge of services, 8 general practitioners, 75 nurses/midwives in inpatient rooms and polyclinics, 6 laboratory officers, 4 radiology officers, 9 nutritionists, 10 pharmacists, 7 registrations, 2 finances.

#### 2. Sample

In this study, the research samples were informants and key informants as data sources. The sampling technique in this study uses the Snowball technique, in this technique the researcher will get participation in accordance with the information desired by the researcher, namely informants who have been validated and analyzed reach saturation point, the sample in this study was 9 informants.

### c. Research Instruments

Based on the data collection method in this study, the instruments used consisted of:
1. Researcher and research assistant (nurse) Mr. A as data collector
2. Interview guide
3. Android phone for recording
4. Stationery (Sugiyono, 2018)

### d. Research Method

In processing data, using in-depth interviews is a means of re-checking or proving the information or information obtained previously. The interview technique used is in-depth interview, which is the process of obtaining information for research purposes by means of question and answer while face to face between the interviewer and the informant, with or without using interview guidelines, where the interviewer and informant are involved in a relatively long social life (Saryono, 2013).

Qualitative data analysis is as follows:

### 1. Discourse Analysis

Discourse analysis is an analysis that is more qualitative in nature and can be an alternative to complement and cover the quantitative content that has been widely used by researchers. Discourse analysis places more emphasis on the meaning of texts rather than the summation of categorical units such as focusing on hidden messages.

### 2. Triangulation

The first step in data analysis is triangulation of data collectors, where the researcher compares the results of the data that have been observed with interviews. Then, by triangulating various sources, namely comparing the data findings from one informant and other informants at different places and times. Furthermore, using theoretical triangulation, namely the data obtained during (in) and after (from) the field abstracted with the relevant theoretical perspective. This triangulation process is carried out by researchers since obtaining data in the field and after the data in the field has been comprehensively collected.

The first step in data analysis, namely the validity test, the researcher uses data triangulation (Sugiyono, 2018)

1. Source triangulation
   Source triangulation means to get data from different sources with the same technique. Collecting data from different informants through in-depth interviews.

2. Triangulation Method
   This is done by collecting data in different ways, namely in-depth interviews. In this case the researcher uses data collection techniques using data collection techniques using in-depth interviews.

3. Data Analysis Triangulation
   The data that has been reduced in the form of a matrix is analyzed and then re-confirmed to the informants regarding the results of the data analysis. In this study, the results were analyzed to confirm the informants.

### 3. Audit Trail

Next, make an audit trail to check the accuracy of the data that has been obtained in the form of field notes, examine the results of data synthesis, examine the results of data analysis in the form of summaries, concepts, and examine the research process that has been carried out from beginning to end.

The steps of data analysis can be concluded as follows:

1. Categorization
2. Creating a matrix
3. Simple math
4. Summary of each respondent
5. Contextualization
6. Narrative analysis
7. Develop theory(Affifuddin, 2012)

## RESULTS AND DISCUSSION

### Result

### a. Human

The Human / HR section is used to assess information in terms of system use, (system use) on the frequency and breadth of information system functions and investigations. System use is also related to who uses it, the level of use (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. Support, empathy and follow-up services.

This is in accordance with the informant's statement as follows:

*"...the finance department can use SIMRS, but there are limitations, such as the head of the finance department can have full access, and the staff is limited ...".*
*"...Thank God RM employees*
*"...As for SIMRS, I've been using it since 2014 sir, so it's estimated to be around 8 years..."*
*"...As for SIMRS, I happened to be assisted by my assistant at the Polyclinic, and for the nurses it was possible for about 2 years to use this...".*
*"...For pharmacists, thank God, they understand..."*

Based on the results of in-depth interviews, it can be concluded that Human or HR at the general hospital of Az-Zahra already understand in using SIMRS to assist services at the general Az-Zahra, both from specialist doctors, general practitioners, nurses, midwives, medical records, pharmacists, and others. In SIMRS, specialist doctors and general practitioners are still assisted by nurses in inputting, to overcome this, the IT team at general hospital of Az-Zahra can provide socialization or training for specialists and general practitioners so that they can use it without the help of an assistant. In addition, the IT team must always be ready at any time within 24 hours, if there are problems with SIMRS, they can be handled quickly.

### b. Organization

The organizational component (organization) assesses the system from the aspect of the organizational structure. The organizational structure consists of the type, culture, politics, hierarchy of planning and control systems, strategies, top management and staff support is an important part in measuring financing, governance, politics, competition, inter-organizational relations and communication.

This is as stated by the informant:

*"...Hopefully in the future, SIMRS will be connected to all divisions to finance so that the conclusions can be drawn the same, no there was a miscommunication with another room....". ".....The hospital's support is very supportive, from the owner, director, management to SIMRS.....".*
*"...Hopefully for SIMRS this will be more complete, sir, so that later reporting will be easier, so data can be drawn from the report and more complete". ".....The support is very supportive, sir, because SIMRS this is very helpful for us....".*
*".....Hopefully in the future all data will be inputted and can be accessed via SIMRS, there is no manual, and it will be neater"......"The hospital's support is very supportive, because I heard that I will upgrade this SIMRS for better features. ...".*
*"...Hopefully in the future that the network will not be slow and slow, because it will affect the speed of service...."*
*"...In the future, maybe, it expected for the menu to be more complete, effective, and faster......"*
*".....Support from the hospital is very supportive to fulfill this SIMRS, sir....."*

Based on the results of in-depth interviews, it was found that the general hospital Az-Zahra from the directors, management ranks to the hospital staff were very supportive of the use of SIMRS, this is because SIMRS has good benefits to facilitate reporting both internally and externally, besides that SIMRS is a one of the requirements for hospital accreditation and assessment requirements from Social Security Administration to facilitate services. Thus, it is suggested to the general hospital to be able to monitor the use of SIMRS on a regular basis in order to control the use of SIMRS.

### c. Technology

The technology component (technology) consists of system quality, information quality and service quality. System quality concerns the interrelation of features in the system including system performance and user interface. Ease of use, ease of learning, response time, usefulness, availability, flexibility, and security are variables or factors that can be assessed from the quality of the system. Information quality focuses on the information generated by the information system. The criteria that can be used to assess the quality of information include completeness, timeliness, availability, relevance, consistency, and data entry. Meanwhile, service quality focuses on the overall support received by the system or technology service provider. Service quality can be assessed by the speed of response.

This is in line with the statement submitted by the informant:

*"......The network is pretty fast, but sometimes something doesn't connect......"*
*"...If the accuracy of this SIMRS is almost 80% accurate......"*

*"......The problem, uuummm.... Maybe it's just the network, Sir, we usually report it to the IT department..."*

*"......To use this SIMRS, we are trained first, and for internet connection we often have trouble..."*

Based on the results of in-depth interviews, it was found that SIMRS at the general Az-Zahra still often experienced problems, such as the internet network which was often interrupted and slow, but there were 2 IT teams who were always ready within 24 hours to overcome these obstacles. In addition, SIMRS at the general hospital of Az-Zahra is firendly, easy to understand and use, in its implementation, the IT team first conducted training to all sections to be able to use SIMRS, besides that there were still some requests for additional menus from work units to improve SIMRS. Based on this, it is recommended for the IT team of the hospital to be able to provide training to officers.

Furthermore, the IT team must be ready within 24 hours if there are signal problems or problems with SIMRS. Then the IT team in order to meet the demands of work units such as improving SIMRS in adding new menus.

## Discussion

### a. Human

Based on the results of in-depth interviews with participants that HR staff at the general hospital of Az-Zahra in the Human or HR section at the general hospital of Az-Zahra already understand how to use SIMRS to assist services at the general hospital of Az-Zahra, both from specialist doctors, general practitioners, nurses, midwives, medical records, pharmacists, and others. In using SIMRS, specialist doctors and general practitioners are still assisted by nurses in inputting, to overcome this, the IT team at the general hospital of Az-Zahra can provide socialization or training for specialists and general practitioners so that they can use it without the help of an assistant.

This is in accordance with the research conducted by Mahendra (2016) regarding the Evaluation of Hospital Information and Management Systems (SIMRS) with the Hot-Fit Theory. The study was conducted in a private type C special hospital with employee respondents who use SIMRS regularly. The results of the analysis show that there is a *mis-fit* between technology and humans which has an impact on the perception of less benefits for users. The inhibiting factors include SIMRS not in accordance with the needs, the perception that using manual recording is easier and faster, the perception that the use of SIMRS adds to the workload, and the SIMRS output is considered not relevant to the user's needs. However, strong organizational factors encourage the sustainable use of SIMRS such as work culture and leadership. SIMRS development can be directed to support organizational management and quality of medical services.

The results of this study, in accordance with Akdon's theory Akdon (2007) which states that the function of evaluation is to see the level of success and failure of an organization and inputs to overcome existing problems. The benefits of evaluation are useful for improving planning, strategy, policy; for decision making; for program/activity control purposes; for improvement of inputs, processes, and outputs, improvement of order or system procedures.

Based on the results of the study, it can be concluded that there are 2 parts of HR that have not used SIMRS to the maximum, namely specialist doctors and general practitioners, because special training has not been carried out for specialist doctors and general practitioners. SIMRS training for specialist doctors and general practitioners has not been carried out, due to the difficulty of managing time in these sections, this is due to the doctors' flight hours which are quite dense in other workplaces, apart from the general hospital of AZ-Zahra. Thus, it is suggested to the General Hospital of Az-Zahra to be able to conduct special training on SIMRS to specialist doctors and general practitioners, so that SIMRS can be used optimally and maximally in supporting services at the hospital.

### b. Organization

Based on the results of in-depth interviews with participants that from the director, management to hospital staff, they fully support the use of SIMRS, this is because SIMRS has good benefits to facilitate reporting both internally and externally, besides that SIMRS is one of the requirements for hospital accreditation and assessment requirements from Social Security Administration to facilitate service. Thus, it is recommended to the general hospital to be able to monitor the use of SIMRS on a regular basis in order to control the use of SIMRS.

This is in accordance with research conducted by Saragi (2016)in his thesis entitled Application of Hospital Information and Management Systems (SIMRS) in Improving Public Health Services. This study uses descriptive research methods with a qualitative approach, namely the method of collecting data for a good sample of informants from Efarina Etaham Hospital officials and patient samples by using direct interviews in order to get complete and clear answers. The questions were arranged based on the purpose of this research, namely the system theory, namely input, processing and output and the theory of service quality. The implementation of the Hospital Information and Management Systems (SIMRS) in general has constraints on Facilities and Human Resources but the results of data analysis from this study indicate that the implementation of the Hospital Information and Management Systems (SIMRS) at Efarina Etaham Hospital is only constrained by human resources. The service felt by the community has been maximized in terms of ease of access, completeness of facilities, alertness of hospitality services, and availability of services.

The results of this study, in accordance with the theory of Siswanto (2008) which states that organizational elements consist of groups of people who of course interact with each other, consciously coordinating, meaning that human interaction is regulated so that it is a unity that goes in a certain direction, is sustainable, has a common goal.

Based on the results of the study, it can be concluded that the general hospital of Az-Zahra has a goal in using SIMRS, namely to facilitate services in the input process to integrated reporting through information systems. In addition, the management of the general hospital of Az-Zahra fully supports, from the directors to the staff, in running this SIMRS.

### c. Technology

Based on the results of in-depth interviews with participants that SIMRS at the General Hospital of Az-Zahra often experiences interference with the internet network, which can interfere with the operational use of SIMRS. The SIMRS used by the General Hospital of Az-Zahra is in accordance with the standards of the Ministry of Health, Hospital Accreditation Commission (KARS), Social Security

Administrator to support the hospital accreditation process. SIMRS used by the general hospital of Az-Zahra has a display that is easy to understand and easy to use.

This is in accordance with the research conducted by Andi (2020) with the title Evaluation of the Hospital Information and Management System (SIMRS) With the Hot Fit Method at Andi Makkasau Hospital, Parepare City. The type of research used is qualitative research with a descriptive approach with structured interviews. Instruments in the research used were interview guides, recording devices for deaf cameras. Informant research using purposive sampling method and obtained as many as 12 informants. Data collection techniques were carried out by in-depth interviews and observations with data analysis using the triangulation method. The results showed that this study concluded that SIMRS Andi Makkasau City of Parepare was categorized as good because it was able to meet the indicators from the human aspect, from the organizational aspect it was also good enough to meet the indicators from the organizational aspect, from the technological aspect it was also good enough to meet the indicators. from technology, in terms of benefits it is also quite useful.

The results of this study are in accordance with Putu (2018)theory that a communication information technology system that processes and integrates the entire flow of hospital service processes in the form of a network of coordination, reporting and administrative procedures to obtain precise and accurate information.

The results showed that SIMRS at the General Hospital Az-Zahra still often encountered problems, such as the internet network which was often interrupted and slow, but there were 2 IT teams who were always ready within 24 hours to overcome these obstacles. In addition, the SIMRS at the general hospital of Az-Zahra is firendly, easy to understand and easy to understand used, in its implementation, the IT team first conducted training to all parts to be able to use SIMRS, besides that there were still some requests for additional menus from work units to improve SIMRS. Based on this, it is recommended for the IT team of the hospital to be able to provide training to officers. Furthermore, the IT team must be ready within 24 hours if there are signal problems or problems with SIMRS. Then the IT team in order to meet the demands of work units such as improving SIMRS in adding new menus.

## CONCLUSIONS AND SUGGESTIONS

### Conclusions

1. It is known that SIMRS officers at the general hospital of Az-Zahra already understand how to use SIMRS to assist services at the general hospital of Az-Zahra both from specialist doctors, general practitioners, nurses, midwives, medical records, pharmacists, and others, but for specialist doctors and general practitioners are still assisted by nurses in inputting.
2. It is known that the directors, management and hospital staff fully support the use of SIMRS, this is because SIMRS has good benefits to facilitate reporting both internally and externally, besides that SIMRS is one of the requirements for hospital accreditation and assessment requirements from BPJS to facilitate service. Thus, it is suggested to the general hospital to be able to monitor the use of SIMRS on a regular basis in order to control the use of SIMRS.

3. It is known that SIMRS technology at the general hospital of Az-Zahra is in accordance with hospital accreditation standards and BPJS Health, but often experiences interference with the internet network, which can interfere with the operation of using SIMRS.

### Suggestion

1. For writers

    As a reference for the authors for the development of research with the same title for the perfection of this research.

2. For Educational Institutions

    As a source of information at the institution of Aisyah University of Pringsewu, Lampung to be used as scientific documentation to stimulate the interest of further researchers, especially the use of SIMRS.

3. For Professional Science

    As a meaningful input for the development of the nursing profession. Input for the nursing profession in related research areas to determine policies in order to improve the quality of health services in the more optimal use of SIMRS.

4. For Research Places

    Help to provide information to hospitals regarding the effectiveness of using SIMRS, in fact, there are still shortcomings in SIMRS such as networks that often have problems, doctors who have not used SIMRS independently.

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