Analysis of Hospital Information System Implementation Using the Human-Organization-Technology (HOT) Fit Method: A Case Study Hospital in Indonesia

Silvanus Chakra Puspita, Supriyantoro, Hasyim

***Abstract* — Background and purpose: The implementation of Hospital Information System (HIS) is important to achieve strategic objectives based on quality services. For this reason, an evaluation is needed to find out how the benefits of HIS in the hospital work unit. This study uses the evaluation framework of Human, Organization, Technology (HOT) Fit which was introduced by Yusof in 2008.**

Methods: This research method was carried out using a mixed method approach where the quantitative approach was processed by using Partial Least Square. The sample was obtained through proportionate stratified random sampling, namely 201 respondents who were employees of HIS users in MHJS hospital. The research instrument used a questionnaire and was measured using a Likert scale

Results: Based on the results of the t-statistic test, there is a misfit which appears in the insignificant direct effect between service quality on user satisfaction (p-value 0.062), service quality on system use (p-value 0.063), organizational structure for system use (p-value 0.492) and user satisfaction with system usefulness (p-value 0.188).

Conclusions: It is necessary to improve the service quality because does not significantly influence user satisfaction and system use. System quality provides a dominant influence on user satisfaction, the use of systems and organizational structures so that management plays a very important role in the implementation of HIS in MHJS hospital.

***Index Terms* — implementation, HIS, HOT-fit, driving factors, inhibiting factors.**

I. INTRODUCTION

In an highly competitive environment, hospitals are required to be increasingly aware of the need to provide the best quality of service for their customers. Service quality is defined as the difference between customer expectations and the reality received [1]. In line with improving the quality of health services in hospitals the Ministry of Health of the Republic of Indonesia has issued policies that guide the implementation of health development carried out by the government and the private sector through a computerized system that processes and integrates the entire flow of business services in the form of coordination networks even for reporting and procedures administration in order to obtain information quickly, precisely and accurately [2].

Information System (IS) is a system that utilizes technology to collect, process, use and disseminate information. The study of IS covers the theory and practice of social and technological phenomena, which determine the development, use, and influence of information systems for society. Information Technology (IT) itself is directly related to technology from IS itself, namely from hardware, software, and telecommunications networks [3].

Hospital Information System (HIS) is defined as "the hospital's socio-technical subsystem, which consists of all information processing as well as related human or technical actors in their respective roles to process information entered by them" [4]. In HIS all integrated information that supports various information needs of clinical services and hospital management [5]. Therefore, the scope of HIS stems from simple systems such as transaction processing systems to complex systems such as clinical decision support systems [6].

The purpose of a hospital using information systems is the more potential to fulfill the strategic goals of the hospital itself, namely to improve the overall quality of patient services and reduce costs through efficiency. Furthermore, HIS will require large capital investment in relation to the utilization of staff and the management of information systems [4].

Some research in the field of information and technology explains that information systems cannot improve organizational performance unless fully utilized [7]. With the right information system, the hospital will be able to achieve its goal of improving the overall quality of patient services and cost efficiency [8].

MHJS Hospital is a private type B hospital in Jakarta (capital city of Indonesia) that uses HIS called WIPRO since it has been operating for 5 years, which is an information system originating from India and adopted directly from hospitals in a group. Of the 40 modules owned by WIPRO, there are 15 modules that are not used so that only 62.5% or as many as 25 modules are used. In addition, from the preliminary survey results obtained by HIS users as respondents as much as 42.1% agree the use of HIS is important in their daily work, 46.1% of respondents have sufficient skills in using HIS, 46.1% of respondents feel the time of accessing HIS not fast enough, 44.7% of respondents felt the improvement of system failure (error) was still lacking, 38.2% of respondents felt HIS was sufficient to provide efficiency at work, 40.8% of respondents thought HIS was still of little benefit in improving communication between departments / units, 38.2% of respondents thought the effectiveness of work achievement with HIS was still

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lacking, and 38.1% of respondents were less satisfied with the existing HIS.

The occurrence of system user dissatisfaction with HIS can affect the quality of services provided by system users to patients and families. Then in the end it will cause patient dissatisfaction with the quality of services provided by hospital staff. This condition will affect word of mouth marketing because of the quality of service and trust from the doctor's relationship with the patient [9]. User satisfaction has a direct relationship with the intention to use information [10] and the level of user satisfaction is positively related to their intention to continue using information systems [11].

Information system evaluation is a process to explore and find out, about the extent to which an information system implementation activities, both from the perspective of the user's perception, organization, and in terms of information systems technology [12]. With this evaluation, hospitals can develop information systems by considering user needs and the factors that influence the use of HIS as well as the expected benefits [13].

The problem discussed in this study is how the implementation of HIS in MHJS hospitals when viewed from the aspects of users, organizations and technology that appears from the influence of technology on humans and organizations, human and organizational influence on the usefulness of the system. In addition, to find out the factors that become obstacles and supporters in the implementation of HIS using the framework of Human, Organization, Technology Fit.

To measure the success of an information system requires a taxonomy in the form of a measurement model. In 1992 a model was developed, one of which was in a framework consisting of six dimensions as a measure of the success of an information system, namely system quality, information quality, system usage, user satisfaction, individual impact and organizational impact where these dimensions are correlated on a temporary basis [14].

In 2003, DeLone and McLean based on several studies conducted by Balaban and Bossen, changed the information system success model by adding a dimension of service quality and changing individual and organizational impacts as final impacts to net benefits [15]. The net benefits dimension is used as an "impact" or the impact caused by the information system that is more than just an impact on direct users. These impacts are interorganizational and industrial impacts, consumer impacts, and social impacts [15], [16].

Starting from DeLone and McLean's research in 2003, Yusof in 2008 developed the research as an evaluation framework that was developed after a critical assessment of the findings of the HIS evaluation study and information system was found. The study uses the SI Success Model in categorizing evaluation factors, dimensions and measurements. The SI success model was adopted based on comprehensive methods, specific evaluation categories, broad validation and its application to HIS evaluations. In addition, the Information Technology Organization Fit Model is also used to combine the concept of compatibility between evaluation factors, namely users, organizations and technology so that the evaluation method developed by Yusof is named Human-Organization-Technology (HOT) Fit Model [6].

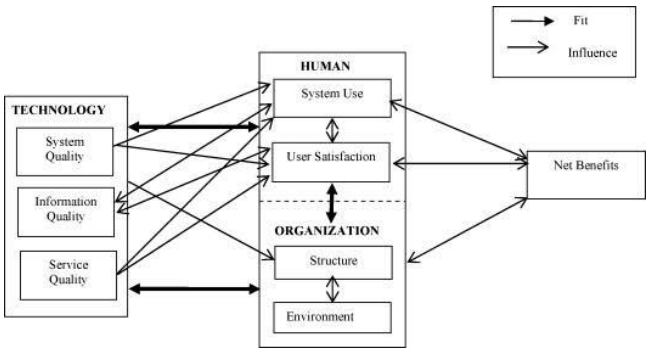

Fig. 1. HOT FIT Model Framework from Yusof.

The human component assesses information systems in terms of system use in the frequency and breadth of information system functions and investigations. The use of the system also relates to who uses it, the level of user, training, knowledge, expectations and acceptance or resistance system. This component also assesses the system in terms of user satisfaction. User satisfaction is the overall evaluation of user experience in using information systems and the potential impact of information systems. User satisfaction can be related to perceived usefulness and user acceptance towards information systems that are influenced by personal characteristics [6].

The organizational component evaluates systems from aspects of organizational structure and organizational environment. The organizational structure consists of type, culture, politics, hierarchy, system planning and control, management and communication strategies. Leadership, support from top management and staff support are important parts of measuring the success of the system [6]. Health organizations, especially hospitals, must have the ability to prepare workers or staff to adapt to new technology or changes that may occur [18]. The organizational environment consists of sources of funding, governance, politics, competition, inter-organizational relations and communication [6].

The technology component consists of system quality, information quality and service quality. At the individual unit of analysis, there is strong support for the relationship between system quality and user satisfaction [19]. The quality of the system in health care institutions involves the linkages 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 information produced by information systems including patient medical records, reports and prescriptions. Criteria that can be used to assess the quality of information include completeness, accuracy, timeliness, availability, relevance, consistency, and data entry. Whereas service quality focuses on the overall support received by the system or technology service provider. Service quality can be assessed by speed of response, assurance, empathy and service follow-up [6].

Hypothesis

H1: The quality of information systems has a significant effect on user satisfaction

H2: The quality of the information system has a significant effect on the use of the system

H3: The quality of information systems has a significant effect on organizational structure
H4: Information quality has a significant effect on user satisfaction
H5: Information quality has a significant effect on system use
H6: Information quality has a significant effect on organizational structure
H7: Service quality has a significant effect on user satisfaction
H8: Service quality has a significant effect on system usage
H9: Service quality has a significant effect on organizational structure
H10: User satisfaction has a significant effect on system usage
H11: Organizational structure has a significant effect on the use of the system
H12: Organizational environment has a significant effect on organizational structure
H13: User satisfaction has a significant effect on benefits
H14: The use of the system has a significant effect on benefits
H15: The organizational system has a significant effect on benefits

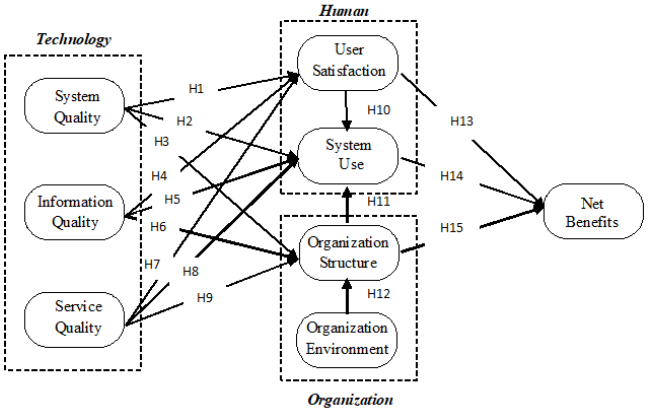

Fig. 2. Research Framework Model.

II. Research Method

This research was conducted at MHJS Hospital from November 2019 to January 2020 using a combination of qualitative and analytic descriptive methods using a quantitative approach through surveys to collect primary data. The questionnaire contained statements of Human variables consisting of system usage and user satisfaction, Organization variables consisting of organizational structure and environment, Technology variables consisting of system quality, information quality, and service quality, and Net benefit variables.

The data of this study used a cross-sectional survey with primary data that were quantitative in nature, obtained by using interval data. Data collection techniques using questionnaires distributed to respondents through the preparation of a list of questions and then respondents answered questions in the column that is available based on a Likert Scale.

In this study the respondents of this study were employees and hospital professionals who used the HIS module and had a user ID of 418 people. From the 418 population based on the formula of Issac and Michael, 201 samples were obtained with a proportion of 21 doctors, 80 nurses, 31 other health workers, 56 administrative staff and 13 management officers. Descriptive analysis is used to provide an overview of employee perceptions based on a questionnaire through the three box method analysis.

Hypothesis testing is done by Partial Least Squares (PLS) analysis with indicator models in the form of reflective and formative indicator models that aim to explore causality relationships between research variables, both directly and indirectly, a set of independent variables to the dependent variable [17]. The hypothesis test proposed uses the t test statistic where the probability of the t test statistic is used to indicate the significance / absence of influence between variables with a significant level of 5%.

III. Result And Discussion

Of the 201 employees and profession staff of MHJS hospitals who have user IDs and can access HIS, there are 36.3% of employees aged less than 30 years. As many as 49.8% of employees aged 30-39 years. Next as many as 10.9% of employees aged 40-49 years. As many as 3.0% of employees aged 50-59 years, and none of the employees aged 60 years and over so that the majority of employees and professionals of MHJS Hospital who have a user id and can access HIS aged 30-39 years.

Based on the work background there are 10.4% of employees having a doctor's background, 39.8% of employees have a nurse's background, 15.4% of the employees have a background in other health workers (pharmacists, radiographers, physiotherapists, dieticians), 27.9% of employees have a background in administrative work (cashier, admin, customer service, call center, back office), and as many as 6.5% of employees have management work background (head unit / department / division).

This research model consists of eight latent variables including system quality, information quality, service quality, organizational environment, user satisfaction, organizational structure, system usage, and usefulness of HIS. Evaluation of the measurement model is a step to test the validity and reliability of a latent variable.

Based on testing the validity of the formative model where the test will be accepted if the value of p-value ≤ level of significance (alpha = 5%), each indicator of the system quality, service quality and information quality has a value of $p \leq 0.05$ so that the value is valid.

As for the validity test the reflective model uses convergent validity where the loading factor is positive and greater than 0.6 followed by discriminant validity where the loading factor value is greater than the correlation between the indicator with other variables. The six latent variables namely Organizational Environment, User Satisfaction, Organizational Structure, System Usage and System Usability are declared valid.

Goodness of fit Model in PLS analysis to determine the contribution of exogenous variables to endogenous variables is done using the coefficient of determination (R-Square) and Q-Square predictive relevance (Q2). R-square variable user satisfaction is 0.717 or 71.7%. This can indicate that the variable user satisfaction can be explained by the variable

system quality, information quality, and service quality by 71.7%, or in other words the contribution of the system quality variable, information quality, and service quality to user satisfaction variables by 71.7%, while the rest 28.3% is the contribution of other factors not discussed in this study. Then the Q-square variable user satisfaction is 0.719. This shows that the system quality, information quality, and service quality variables have a predictive power that is (strong) to the user satisfaction variable.

R-square variable organizational structure is worth 0.808 or 80.8%. This can indicate that organizational structure variables can be explained by the variables of system quality, information quality, service quality, and organizational environment by 80.8%, or in other words the contribution of variables of system quality, information quality, service quality, and organizational environment to organizational structure variables amounted to 80.8%, while the remaining 19.2% was contributed by other factors not discussed in this study. Then the Q-square organizational structure variable is worth 0.809. This shows that the variable system quality, information quality, service quality, and organizational environment have a predictive power that is large (strong) to the variable organizational structure.

R-square variable system use is worth 0.808 or 80.8%. This can indicate that the system use variable can be explained by the system quality variable, information quality, and service quality by 80.8%, or in other words the contribution of the system quality, information quality, and service quality variables to the system use variable by 80.8%, while the rest 19.2% is the contribution of other factors not discussed in this study. Then the variable Q-square system usage is worth 0.807. This shows that the system quality, information quality, and service quality variables have a predictive power that is (strong) to the system use variable.

The R-square variable of HIS usefulness is 0.819 or 81.9%. This can indicate that the variable usefulness of HIS can be explained by the variable user satisfaction, organizational structure, and use of the system by 81.9%, or in other words the contribution of the variable user satisfaction, organizational structure, and the use of the system to the variable usefulness of HIS by 81.9%, while the rest 18.1% is the contribution of other factors not discussed in this study. Then the Q-square variable usefulness of HIS is 0.821. This shows that the variables of user satisfaction, organizational structure, and use of the system have a predictive power that is (strong) to the variable usefulness of HIS.

TABLE 1: GOODNESS OF FIT MODEL

Endogen	*R-squared*	*Q-squared*
User Satisfaction	0.717	0.719
Organization Structure	0.808	0.809
System Use	0.808	0.807
Net Benefits	0.819	0.821

Testing the direct influence hypothesis is used to test whether there is a direct influence of exogenous variables on endogenous variables. The test criteria state that if p-value ≤ level of significance (alpha = 5%), then there is a significant influence of exogenous variables on endogenous variables.

TABLE 2: THE DIRECT INFLUENCE HYPOTHESIS

Exogen	Endogen	Path Coeff	SE	P-Val
System Quality	User Satisfaction	0.621	0.063	<0.001
System Quality	Organization Structure	0.378	0.066	<0.001
System Quality	System Use	0.309	0.066	<0.001
Information Quality	User Satisfaction	0.149	0.069	0.015
Information Quality	Organization Structure	0.156	0.068	0.012
Information Quality	System Use	0.165	0.068	0.008
Service Quality	User Satisfaction	0.107	0.069	0.062
Service Quality	Organization Structure	0.117	0.069	0.046
Service Quality	System Use	0.106	0.069	0.063
Organization Environment	Organization Structure	0.317	0.066	<0.001
User Satisfaction	System Use	0.380	0.066	<0.001
Organization Structure	System Use	0.001	0.071	0.492
User Satisfaction	Benefit	0.062	0.07	0.188
Organization Structure	Benefit	0.462	0.065	<0.001
System Use	Benefit	0.437	0.065	<0.001

Based on testing obtained a significant direct effect of system quality on user satisfaction (p-value <0.001), system quality on organizational structure (p-value <0.001), system quality on system use (p-value <0.001), information quality on user satisfaction (p-value 0.015), information quality on organizational structure (p-value 0.012), quality of information on system use (p-value 0.008), service quality on organizational structure (p-value 0.046), organizational environment on organizational structure (p -value <0.001), user satisfaction with the use of the system (p-value <0.001), organizational structure of benefits (p-value <0.001) and the use of the system of benefits (p-value <0.001). The insignificant direct effect occurred on service quality on user satisfaction (p-value 0.062), service quality on system use (p-value 0.063), organizational structure on system use (p-value 0.492) and user satisfaction on system usefulness (p- value value 0.188).

The conversion of path diagrams into structural models is intended to predict the effect of exogenous variables on endogenous variables which initially form a variety of paths into mathematical equations.

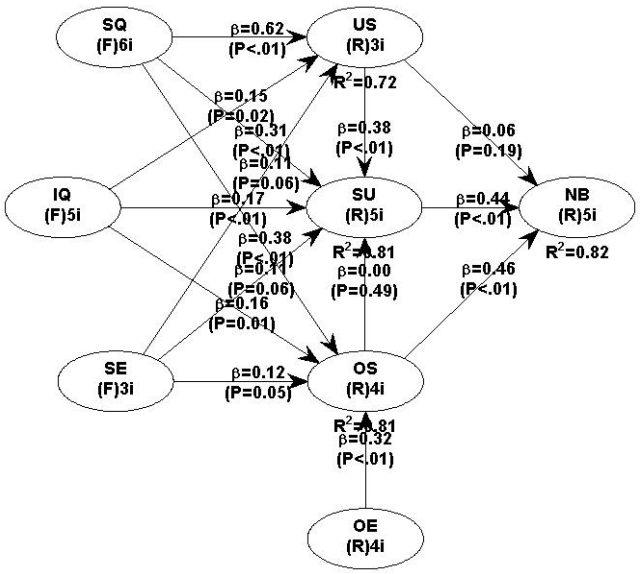

Fig. 3. Pathway Diagram.

Formula 1:

US= 0.621 SQ + 0.149 IQ + 0.107 SE

From formula 1 it can be informed that:

1. The coefficient of the directive effect of system quality on user satisfaction is 0.621 * stating that system quality has a positive and significant effect on user satisfaction. This means that the higher the quality of the system, it tends to increase user satisfaction.

2. The coefficient of the directive effect of information quality on user satisfaction of 0.149 * states that the quality of information has a positive and significant effect on user satisfaction. This means that the higher the quality of information, it tends to increase user satisfaction.

3. Directive effect coefficient of service quality on user satisfaction of 0.107 states that service quality has a positive and not significant effect on user satisfaction. This means that the higher the quality of service, it tends to increase user satisfaction, even though the increase is not significant.

Formula 2:

OS = 0.378 SQ + 0.156 IQ + 0.117 SE + 0.317 OE

From formula 2 it can be informed that:

1. The coefficient of the directive effect of the system quality on the organizational structure of 0.378 * states that the quality of the system has a positive and significant effect on the organizational structure. This means that the higher the quality of the system, it tends to improve the organizational structure.

2. Directive effect coefficient of information quality on organizational structure of 0.156 * states that information quality has a positive and significant effect on organizational structure. This means that the higher the quality of information, it tends to improve the organizational structure.

3. Directive effect coefficient of service quality on organizational structure of 0.117 * states that service quality has a positive and significant effect on organizational structure. This means that the higher the quality of service, it tends to improve organizational structure.

4. The coefficient of direct effect of the organizational environment on the organizational structure of 0.317 * states that the organizational environment has a positive and significant effect on the organizational structure. This means that the more conducive the organizational environment is, it tends to improve organizational structure.

Formula 3:

SU = 0.309 SQ + 0.165 IQ + 0.106 SE + 0.380 US + 0.001 OS

From formula 3 it can be informed that:

1. The coefficient of the directive effect of system quality on system use by 0.309 * states that system quality has a positive and significant effect on system use. This means that the higher the quality of the system, it tends to increase the use of the system.

2. The coefficient of the directive effect of information quality on system use by 0.165 * states that information quality has a positive and significant effect on system use. This means that the higher the quality of information, it tends to increase the use of the system.

3. The coefficient of the directive effect of service quality on system use by 0.106 states that service quality has a positive and significant effect on system use. This means that the higher the quality of service, it tends to increase system usage, even though the increase is not significant.

4. The coefficient of the direct effect of user satisfaction on the use of the system of 0.380 * states that user satisfaction has a positive and significant effect on the use of the system. This means that the higher the user's satisfaction, it tends to increase the use of the system.

5. The coefficient of direct effect of organizational structure on system use of 0.001 states that organizational structure has a positive and significant effect on system use. This means that the better the organizational structure, the more likely it is to increase the use of the system, although the increase is not significant.

Formula 4:

NB = 0.062 US + 0.462 OS + 0.437 SU

From formula 4 it can be informed that:

1. The coefficient of direct effect of user satisfaction on the usefulness of HIS of 0.062 states that user satisfaction has a positive and significant effect on the usefulness of HIS. This means that the higher the user's satisfaction, it tends to increase the usefulness of HIS, even though the increase is not significant.

2. The coefficient of direct organizational structure effect on the usefulness of HIS of 0.462 * states that the organizational structure has a positive and significant effect on the usefulness of HIS. This means that the better the organizational structure, the more likely it is to increase the usefulness of HIS.

3. The dirrect effect coefficient of the use of the system on the usefulness of HIS is 0.437 * states that the use of the system has a positive and significant effect on the usefulness

of HIS. This means that the better the use of the system, it tends to increase the usefulness of HIS.

TABLE 3: DOMINANT FACTOR

Exogen	Endogen	Total Coeff
System Quality	User Satisfaction	0.621
System Quality	Organization Structure	0.378
System Quality	System Use	0.545
System Quality	Net Benefits	0.451
Information Quality	User Satisfaction	0.149
Information Quality	Organization Structure	0.156
Information Quality	System Use	0.222
Information Quality	Net Benefits	0.178
Service Quality	User Satisfaction	0.107
Service Quality	Organization Structure	0.117
Service Quality	System Use	0.147
Service Quality	Net Benefits	0.125
Organization Environment	Organization Structure	0.317
Organization Environment	System Use	0.0003
Organization Environment	Net Benefits	0.147
User Satisfaction	System Use	0.380
Organization Structure	System Use	0.001
User Satisfaction	Net Benefits	0.228
Organization Structure	Net Benefits	0.462
System Use	Net Benefits	0.437

The variable that has the largest total coefficient of user satisfaction is the system quality variable with a total coefficient of 0.621. Thus the quality of the system is the variable that has the most dominant influence on user satisfaction.

The variable that has the largest total coefficient of organizational structure variables is the system quality variable with a total coefficient of 0.378. Thus the quality of the system is the variable that has the most dominant influence on the organizational structure.

Then the variable that has the largest total coefficient of the system use variable is the system quality variable with a total coefficient of 0.545. Thus the quality of the system is the variable that has the most dominant influence on the use of the system.

Whereas the variable that has the largest total coefficient on the usefulness variable of HIS is the organizational structure variable with a total coefficient of 0.462. Thus the organizational structure is the variable that has the most dominant influence on the usefulness of HIS.

Based on the system adaptation process at MHJS Hospital, it was felt that there was a gap between expectations and the reality of HIS implementation. In MHJS Hospital, staff is still categorized as new and inexperienced in implementing HIS especially in the specifics of HIS. The trial was conducted at the beginning, but the real case problems encountered arose when the hospital began operating and the number of implementation complications increased with the increase in the number of patients served.

The conditions of implementing HIS are recorded in the phenomena analyzed using the HOT Fit method. Service quality has insignificant effect because the system used is not well prepared for the MHJS Hospital climate, but rather a direct adaptation of the system that has been used in MHT Hospital. In addition, the quality of system services is greatly influenced by the response of the system to the inputted data so as to produce information that is ready to be executed. HIS does not accommodate this need.

HIS users' perceptions are strongly influenced by exogenous variables that lead to the use of a system that synergies are interconnected with the satisfaction of its users so as to give birth to the benefits of the system. From the results of analysis with HOT Fit, the use of the system is an endogenous variable that most does not get a positive influence from the exogenous variables of service quality and organizational structure. Obviously this condition will bring up the reluctance of staff to use HIS because the system is considered not optimal in the services provided and the management feels rushed to use HIS at MHJS Hospital.

IV. STUDY RESULT

1. There was a discrepancy in the model obtained from the analysis of the implementation of WIPRO as HIS in MHJS with the HOT Fit framework model as a reference. This can be seen from the insignificant direct effect of service quality on user satisfaction, the insignificant direct effect of service quality on system use, the insignificant direct effect of organizational structure on system use and the insignificant direct effect of user satisfaction on system usefulness. The discrepancy produces factors that hinder HIS implementation in MHJS hospitals, where service quality variables are the dominant factor.

2. Based on the calculation of the dominant influence obtained from the largest total coefficient, the factors supporting the implementation of WIPRO in MHJS hospitals in each aspect of the study were obtained. The technological aspect that gives a strong influence is dominated by the quality of the system because it gives influence to user satisfaction, the use of the system and organizational structure.

3. The organizational structure is the only variable that acts as a supporting factor and also a limiting factor in the implementation of HIS. This condition illustrates the importance of management's role in the implementation of HIS starting from the planning, implementation, evaluation and development stages as a strategy in improving hospital performance. This phenomenon can be concluded through the calculation of the most dominant total coefficient on the usefulness of the system derived from the organizational structure and the insignificant influence of the organizational structure on the use of the system.

V. Driving and Inhibiting Factors

Based on the system adaptation process at MHJS Hospital, it was felt that there was a gap between expectations and the reality of HIS implementation. In the MHJS Hospital, employess are still categorized as new and inexperienced in implementing WIPRO. The trial was conducted at the beginning, but the real case problems encountered arose when the hospital started operating and the number of implementation complications increased with the increase in the number of patients served.

From the technological aspect, it is found that the analysis of the supporting factors of the language used in HIS is easily understood by users and the interaction of the system with the user is sufficient to provide a short answer. As for the inhibiting factors the quality of HIS services cannot yet accommodate the need to provide input for its users and excellent system security makes user access hampered because of the repeated authorization input process. For this reason, solutions to barriers to HIS service features are replaced by the needs of users and develop biometric authorization services

From the human aspect, it is found that the analysis of supporting factors is the majority of HIS users skilled in using it. As for the inhibiting factor the information obtained from WIPRO cannot be used to make decisions for all users and system users use manual steps as an alternative if WIPRO cannot provide input on decisions that need to be taken immediately. For this reason, the solution to the obstacles is socialization and education of HIS users by the IT team and senior executives on a regular basis and evaluation of user complaints is done every two weeks to correct the constraints experienced.

From the organizational aspect, it was found that the analysis of supporting factors was that HIS had received careful planning from the management and the hospital provided facilities that supported the implementation of HIS, both in infrastructure and the readiness of the hospital's IT team for repairing error. Whereas the inhibiting factor of the hospital IT team was limited to the problem solver because the strategic development was carried out by the IT group of hospitals, there was no step in evaluating the system from the beginning of its use and the performance of the organization was affected by the lack of similarities teaching methods for new HIS users. For this reason, the solution for the obstacle is the hospital IT team was involved as part of the IT Strategic Developer, a major HIS evaluation is conducted every three years, the Group IT and senior executive staff prepare SOPs for the introduction and use of HIS to new users.

From the usefulness aspect of the system, it is found that the analysis of the supporting factors, the HIS module has different features for each unit and has been tailored to the needs. Meanwhile, for the inhibiting factor, it was found that there was a perception of increasing workload due to using HIS. The solution to this barrier can be done through feature improvements according to evaluation results and where possible the use of artificial intelligence in HIS

VI. Limitations

This study did not conduct an analysis of each of the HIS modules because what was examined was the overall implementation of HIS from the perspective of its users through the HOT-Fit framework. From the results of the study there is still the possibility of other factors that might still be contributed which are not discussed in this study.

VII. Conclusion

From the analysis of HIS implementation in MHJS Hospital, it was found that there was no significant direct effect on service quality on user satisfaction, service quality on system use, organizational structure on system use and user satisfaction on system usefulness.

As for the significant direct effect on system quality on user satisfaction, system quality on organizational structure, system quality on system use, information quality on user satisfaction, information quality on organizational structure, information quality on system use, service quality on organizational structure, environment organization of the organizational structure, user satisfaction with the use of the system, organizational structure of the benefits and use of the system of benefits.

The inhibiting factors for the implementation of HIS are the quality of HIS services not equally distributed, access to use is complicated, information from the system has not comprehensive, frequent implementation by manual step, the hospital IT team only acts as a problem solver, the absence of regular evaluation, non-similarities the education of its users, and the perception of using HIS increase the workload. While the driving factors are easy system language, the system only needs a short answer from its users, the majority of users are skilled, good hospital planning, good supporting facilities, and system features appropriate with the needs in the work unit.

VIII. Implications

Some of the implications of this research include:

First. MHJS Hospital needs to improve the quality of HIS services because this variable has a non-significant direct effect on user satisfaction and system use. Quality improvement is expected to make users safe and comfortable in addition to their satisfaction, so they are expected to use the system optimally.

Second. The quality of the system has a dominant influence on user satisfaction, the use of the system and organizational structure, but not on the benefit of the system. For this reason, the`re is a need for the latest modification and improvement in the quality of the system at HIS in order to provide a complete benefit in its implementation at MHJS.

Third. Hospital management plays the most important role in the implementation of HIS, therefore there is a need for planning, implementation, evaluation and development of HIS. This situation is expected to bring optimal benefits not only to hospital performance but also to users of the management information system itself. If the improvement of HIS from the technological aspect cannot be carried out

optimally, then the recommendation is to replace HIS with the appropriate user and management of MHJS Hospital.

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