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The Effect of Hospital Management Information Systems on Human Resources Services in Haji General Hospital Medan, Sumatera Utara Province

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ABSTRACT

Utilizing information technology by hospital human resources is essential for improving the efficacy and efficiency of hospital service administration. This study examines some variables in the management information systems on human resources services at Haji General Hospital Medan in Sumatera Utara Province using quantitative research methods with an associative research approach. The method is employed to identify the relation between some variables. This study has three independent variables: utilization of management information systems, satisfaction with information system use and ease of use of information systems. Meanwhile, the dependent variable is human resources services. Tests were conducted to evaluate the impact of independent factors on RSU Haji Medan's human resources services, individually and collectively. This study finds that each independent variable had a substantial effect on human resources services at RSU Haji Medan. Furthermore, the combination of these elements has a significant impact on human resources services at RSU Haji Medan.

Keywords: human resources services, hospitals, information systems, management

1. Introduction

Planning at the regional level is a component of national planning to improve the community's welfare [1]. Technology is one of the three pillars of regional development [2]. Hospital services are a public sector agency that uses information system technology. This information technology must be used to improve hospital service management efficiency and productivity. All hospitals in Indonesia must have a management information system following the minimum standards the Minister of Health established [3]. Management could implement a Management Information System using computer-based information technology, which can provide data to assist management in making decisions.

Haji General Hospital Medan (RSU Haji Medan) Sumatera Utara Province began implementing a management information system in 2017 to replace its manual management system. Using computer-based information technology, the hospital will quickly identify, access, and interpret data applied to the work environment. It allows management to plan, budget, and make decisions to improve services that will increase the number of patients at the hospital. Management could implement a Management Information System using computer-

based information technology, which can provide data to assist management in making decisions. According to data from the Hospital's Medical Records Department, patient visits increased yearly from 2014 to 2016. However, patients decreased after implementing the management information system from 2017 to 2020. The poor implementation of the management information system might be one of the explanations for the fall in patient numbers. The challenge in implementing the management information systems at RSU Haji Medan is the lack of computer technology knowledge among the employees. The employee needs to be more proficient in technology and requires training in the management information system. Employee services are greatly affected by how easily information technology may be used [4]. A study finds a strong correlation between information technology and improved service [5].

Many studies have found a link between the utilization of technology, the ease of using technology, and user satisfaction with the management information system. The use of information technology has an impact on the user. It can suit individual demands in carrying out and completing their jobs, resulting in better service [6] [7]. The usability of information technology, including ease of learning, ease of use, and flexibility, might impact employee service. It demonstrates that the easier it is for employees to use information technology, the better the service they will receive [8] [4]. Furthermore, a number of studies have looked at the connection between user satisfaction with information systems and specific services. The utilization of information systems for individual assistance and user satisfaction are relatively connected [9]. When users are more satisfied with an information system, its service improves [5].

Based on the problems with the implementation of management information systems at Medan Haji General Hospital and the results of previous studies, it is necessary to conduct research at this hospital. This research is expected to contribute new knowledge to research on information systems. Earlier research has covered various topics related to information management systems in workplaces. A research study was conducted to explore mobile apps for employee services [10]. Additional studies were also carried out to determine the effect of information technology on the efficiency of accounting systems [11]. These studies were carried out for private corporations. Also, a different survey was carried out to examine how practical and straightforward academic information systems were assessed to use [12]. However, there is currently a lack of studies on information management systems for human resources in hospitals, particularly public hospitals in the province of Sumatera Utara. Furthermore, it is expected that this research will provide new information on the deployment of the information system at the RSU Haji Medan to improve the hospital's services.

Based on the background and problems stated previously, the objective of this study is to analyze the effect of the utilization of management information systems, ease of use of management information systems, and user satisfaction with management information systems on Human Resources services at RSU Haji Medan.

2. Research Method

This research employs quantitative research techniques. This study employs multiple linear regression analysis and hypothesis testing (simultaneous F and partial T). The Slovin formula used to determine a sample size that is considered to be representative of the full population [13].

This study is conducted in RSU Haji Medan Sumatera Utara Province. The population of this study consisted of 150 employees who utilize management information systems. These workers are distributed between 50 users of administration and general affairs, 45 users of medical support services, and 55 users of medical services. The Slovin formula determines the research sample with 60 samples of hospital staff with the function below :

$$\mathbf{n = N/(1+Nd2) = 150/1+(150x0.01) = 60} \quad \mathbf{(1)}$$

N represents total population, d is the error tolerance and n is the number of samples.

The variables in this study are classified as independent and dependent. The variable is the target of research or the focus of a study. There are three independent variables in this study (X): Utilization of Management Information Systems (X1), Ease of Use of Information Systems (X2), and Satisfaction with Information System Use (X3). The dependent variable (Y) in this study is Human Resources Services.

Multiple linear regression is the next step in the process. The purpose of this step is to assess the effect of one independent variable (X) on one dependent variable (Y) as well as to predict the dependent variable (Y) using only one independent variable (X). The influence of management information systems' utilization, convenience, and user satisfaction on human resources services is studied using multiple regression analysis to test the first, second, and third study hypotheses.

This research utilizes a multiple linear regression equation models, with the function expressed as follows:

$$\mathbf{Y = a + b1X_1 + b2X_2 + b3X_3 + \mu} \quad \mathbf{(2)}$$

Y represents Human Resources Service, and X1, X2, and X3 denote the use of an information system, Information System Ease and Satisfaction with the Information System. Meanwhile, a, b, and μ denote the constant, regression coefficient, and error standard.

Furthermore, the Simultaneous F and T Partial Tests were used to test hypotheses. The simultaneous test was created to examine how well the independent factors employed concurrently might explain the dependent variable. The verification is performed by contrasting the calculated F value from the analysis of variance with the critical F value (F table).

3. Result & Discussion

3.1 Result

3.1.1. Validity and Reliability Test

A validity test is performed to determine a questionnaire's dependability. When all statement items for each variable had an R-value (table in Cronbach's alpha column) higher than the R table, all statement items were valid.

The statement "Feeling enough with the use of management information systems" has the highest R-value (table in the column Cronbach's alpha) on the variable Utilization of Management Information Systems (X1). This statement can expose the factors of the management information system used in RSU Haji Medan's management information, which is carried out according to the needs of each sector. The type of attention offered is routine information management, which can assist employees in improving their performance.

The highest R-value (table in the column Cronbach's alpha) in the variable of Satisfaction with Information System Use (X3) is the statement "feeling satisfied with the management information systems." This statement can expose the satisfaction variable by utilizing an information system tailored to each area's requirements.

The statement "feel easy in utilizing management information systems" has the most excellent R-value (table in the Cronbach's alpha column) in the variable of usability of information systems (X2). The type of attention offered is the provision of information that can help employees enhance their performance in a timely and cost-effective manner.

A reliability test is a strategy for evaluating whether a questionnaire is valid. The reliability of a questionnaire is determined by how consistently or steadily a subject responds to statements. The Cronbach Alpha statistic test was used to assess the level of reliability. If a variable's Cronbach Alpha value exceeds 0.60, it is considered reliable. The test results are presented in the table below:

Table 1. Reliability Test Result

No.	Variabel	*Cronbach Alpha*	Remarks
1.	Utilization of Management Information Systems (X1)	0.762	Reliable
2.	Ease of Use of Information Systems (X2)	0.704	Reliable
3.	Satisfaction with Information System Use (X3)	0.831	Reliable
4.	Human Resources Services (Y)	0.889	Reliable

Based on all the tests, all variables have Cronbach Alpha values greater than 0.60. The Cronbach alpha value for the human resources variable (Y) is 0.889. The value for Utilization of Management Information Systems (X1) is 0.762. The Ease of Use of Information Systems (X2) has a Cronbach Alpha of 0.704, and the Satisfaction with Information System Use variable (X3) gets a Cronbach Alpha of 0.831. As a result, the

indicators utilized by each dependent and independent variable can be relied upon as a variable measuring instrument. This research can be continued because the test results are valid and reliable. The indicator can only be trusted as a variable measuring instrument if the research is credible and dependable.

3.1.2 Hypothesis Testing

3.1.2.1 Multiple Linear Regression Test

The independent variables (X1, X2, and X3) were tested on Human Resources Services (Y) using multiple regression analysis tests. The analysis is employed if there are at least two independent variables. The following table presents the results of the multiple linear regression equation:

Table 2. Multiple Regression Test Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8,199	3,707		-2,212	,031
	X1	,633	,132	,524	4,782	,000
	X2	,367	,083	,309	4,438	,000
	X3	,239	,116	,213	2,064	,044

Based on the table above, the regression equation is derived from the calculation results as follows:

$$\mathbf{Y = -8,199 + 0.524\ X1 + 0.309\ X2 + 0.213\ X3 + e} \quad \mathbf{(3)}$$

Based on the formula above, if the variables Utilization of Management Information Systems (X1), Ease of Use of Information Systems (X2), and Satisfaction with Information System Use (X3) are all set to 0, the Human Resources Service variable (Y) will have a negative value of 8,199. The regression coefficient value of the Management Information System Utilization variable is positive at 0.524. The employee's performance will increase by 0.524, assuming that the other factors remain constant. The regression coefficient of the usability information system variable has a positive value of 0.309, based on the regression results in the table, which means that the better the Ease of Use Information System, the better the employee's performance will also increase by 0.309, assuming the other variables remain constant. The regression coefficient value of the Information System Use Satisfaction variable has a positive value of 0.213, based on the regression results in the table, which means that the better the Information System Use Satisfaction, the better the employee's performance will also increase by 0.213, assuming the other variables remain constant.

3.1.2.2 Partial Test (T-test)

The T-test assesses the partial significance of the role of the independent variable on the dependent variable under the premise that all other independent variables are constant. The calculated findings are then compared to the t-table with a 0.05 error rate. The criteria are H0 is accepted when the value of t count ≤ t table or sig value >α and rejected if the value of t count ≥ t table or sig value <α.

Table 3. Hypothesis Test (Partial)

Variable	Beta	T count	T table	Sig t	α	Remarks
X_1	0.633	4.782	2.00324	0.000	0,05	Ha : Accepted
X_2	0.367	4.438	2.00324	0.000	0,05	Ha : Accepted
X_3	0.239	2.064	2.00324	0.044	0,05	Ha : Accepted
Y	-8.199	-2.212	2.00324	0.031	0,05	Ha : Accepted

The T-test on the Utilization of Management Information Systems (X1) indicator yielded a t-count of 4.782 and a significance of 0.000. Since T-count > T-table (4.782>2.00324) or the significance of t is less than 0.05 (0.000<0.05), the indicator of Utilization of Management Information Systems (X1) in RSU Haji Medan has a significant effect on human resources Services (Y).

Next, the usability of information systems (X2) indicators received T-count of 4.438 with a significance of T = 0.000 in the T-test. Since the t count > t table (4.438>2.00324) or the significance of t is less than 0.05 (0.000<0.05), the usability information system (X2) indicator in RSU Haji Medan has a positive effect on human resources Services (Y).

Furthermore, the T-test on the X3 indicator of satisfaction with information system use yielded a T-count of 2.064 and a T significance of 0.044. Because T count > T table (2.064>2.00324) or the significance of T is less than 0.05 (0.044<0.05), the indicator of satisfaction with the usability of information systems (X2) in RSU Haji Medan has a favorable effect on human resources services (Y).

The human resources Service indicator (Y) received a T-count of -2.212 and a T-significance of 0.031 in a T-test. Because T-count > T-table (-2.212 > 2.00324) or the significance of t is less than 0.05 (0.031< 0.05), the human resources Service indicator (Y) has a negative and significant influence at RSU Haji Medan.

3.1.2.3. Simultaneous Significance Test (F Test)

The F test compares the values in the estimated F with those in the F table in hypothesis testing. If the F-value exceeds the 5% confidence level, Ho is rejected, or Ha is approved. All independent factors have a significant impact on the dependent variable at the same time. If the estimated F-value exceeds the F-table, Ho will be rejected, and Ha will be accepted. The results of the F test are shown in the table below:

Table 4. Simultaneous Significance Test (F Test)

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	912,221	3	304,074	69,231	,000[b]
	Residual	245,963	56	4,392		
	Total	1158,183	59			

a. Dependent Variable: Y
b. Predictors: (Constant), X3, X2, X1

According to the data above, the F-count is 69.231, and the sig is 0.000. F-table at level α = 0.05, df 1 = (k – 1 = 3 – 1 = 2) and df2 (n – k–1 = 60 – 3 – 1= 56), where n is the number of respondents and k is the number of research variables used. The value of F-table = 2.54. If F-count > F-table (69.231> 2.54) and sig < 0.05 (0.000 < 0.05), the hypothesis that all variables (Utilization of Management Information Systems (X1), Ease of Use of Information Systems (X2), and Satisfaction with Information System Use (X3) affect human resources Services is accepted (Y).

3.1.2.4. The determination coefficient (R^2)

The coefficient of determination (R^2) indicates how well the model can explain changes in the dependent variable. The coefficient of determination is zero to one ($0 < x < 1$). A low R^2 value indicates that the independent variables' ability to explain the dependent variables is severely limited. A number close to 1 indicates that the independent variables supply nearly all the information required to forecast the dependent variable's variance.

R-Square is a metric for determining how well a regression model predicts a dependent variable's value. This number represents the percentage of variation that the model can explain. The R-square value falls anywhere between 0 and 1. Meanwhile, the Adjusted R Square value is used to quantify the confidence level in adding the proper independent variable to boost the model's predictive potential, and it rarely exceeds the R-Square value.

Table 5. Determination coefficient (R^2)

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,887[a]	,788	,776	2,09576

a. Predictors: (Constant), X3, X2, X1
b. Dependent Variable: Y

The table above shows that the coefficient of determination (modified R square) derived from the regression calculations is 0.776. The use of Utilization of Management Information Systems (X1), Ease of Use of Information Systems (X2), and Satisfaction with Information System Use (X3) influence 77.6% of human resources services (Y) at RSU Haji Medan, while other variables not examined in this study, such as social

factors, communication, work environment, work discipline, and employee motivation, influence the remaining 22.4 percent of human resources services (Y) at RSU Haji Medan.

3.2. Discussion

3.2.1. The Effect of Utilization of Management Information Systems on Human Resources Services

The management information system is a comprehensive data analysis system to support management, operations, and decision-making within a company. This system uses computer technology, software, management, and decision-making models [14]. The accuracy and dependability of the data based on the human resources information system are essential for making rational human resource decisions.

Based on the test, the effect of the utilization of management information systems on human resources services is demonstrated by the t-count value is larger than t-table (4.782>2.00324). The data showed that utilizing management information systems at RSU Haji Medan has a favorable and significant impact on human resources services.

The findings of this study support prior research. The studies show that information technology and personal technical abilities positively impacted accounting information system efficacy. The more effectively employees use information technology, the better the accounting information system [11] [15].

3.2.2. The Effect of Ease of Use of Information Systems on Human Resources Services

In this study, the usability of information systems for human resources services is indicated by the higher value of t count than t table (4.438 > 2.003242) with Sig 0.000 0.05. Therefore Ha is accepted, and H0 is rejected. These numbers indicate that the usability of information systems and human resources services at RSU Haji Medan are significantly correlated.

The perception of usability is a limited resource for those who will allocate it to various activities. usability is defined as a person's confidence that using the technology of an information system will be effortless [16]. Information systems can be made more effective by using appropriate information technology.

3.2.3. The Effect of Information System Satisfaction on Human Resources Services

Based on the results of the author's tests, the value of the t count, which is greater than the t table (2.064 > 0.00324), indicates satisfaction with using information systems for human resources services. The probability t-value is 0.001 while the significance level was set at 0.05, so Ha is accepted, and H0 is rejected. This value indicates a significant relationship between RSU Haji Medan users' satisfaction with information systems and human resources services.

The result is consistent with empirical research indicating that the quality of information systems positively and substantially affects user satisfaction. The level of satisfaction of the end-user of an information system is proportional to the quality of the information system [17]. In addition, other studies have demonstrated that the usability of data indicates a customer information system's success [18].

If the quality of the hospital's information system exceeds the users' expectations, not just technically, users will probably be happy with the system. [19]. The level of satisfaction with using information systems is proportional to the system's quality.

3.2.4. The Effect of Utilization of Management Information Systems, Ease of Use of Information Systems, and Satisfaction of Use of Information Systems on Human Resources Services

This study reveals that RSU Haji Medan's human resources services were significantly impacted by the usage of information technologies, their usability, and their satisfaction.

Based on the F-test, utilization of management information systems, usability of information systems, satisfaction with the use of information systems, and human resources Services are found to have a significant relationship, as indicated by the F-table value of 2.54. The test shows that F-count is greater than F-table

(69.231> 2.54) with sig is less than 0.05. The hypothesis that Utilization of Management Information Systems (X1), Ease of Use of Information Systems (X2), and Satisfaction with Information System Use (X3) affect human resources Services can be accepted (Y). In this study, boosting the quality of human resources is a service sector with activities that provide good services to hospital visitors. With higher-quality human resources, it will be smoother to improve the quality of hospitals.

3.2.5. Research Limitation

The current study has provided data on the effect of hospital management information systems on human resources services at Haji General Hospital in Medan, Sumatera Utara Province. However, a few things could be improved in this research. This study was conducted during the pandemic. Therefore data collection time was limited because some employees were working from home. This study only used quantitative research methods. Qualitative research involving decision-makers could enrich future research.

4.Conclusion

This study examines the effect of utilization of management information systems, ease of use of information systems, and satisfaction with information system use on human resources services at RSU Haji Medan. Individually as well as collectively. Based on the test, the influence of the usage of management information systems on human resource services is indicated by the t-count value being more than the t-table (4.782>2.00324). The usability of information systems for human resource services test also revealed that the t count is more than the t table (4.438 > 2.003242). According to the tests for satisfaction with using information systems for human resources services, the t count is greater than the t table (2.064 > 0.00324). Based on the findings, each independent variable had a significant impact on human resources services at RSU Haji Medan. Furthermore, the test results for the effect of all the independent variables on the human resources service reveal that the F-count is higher than F-table (69.231> 2.54). The combination of these aspects has a considerable effect on RSU Haji Medan's human resources services.

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