The Impact Of System Quality, Information Quality, Service Quality, Use And User Satisfaction On Net Benefit Using The Delone And Mclean Model (Case Study Of Simponis Application At Rsud I. A. Moeis Samarinda)

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ABSTRACT: *Along with technology that continues to develop, it encourages all aspects of life to make changes to its information system into a digital-based system. One of the industries that has begun to transform into the digital era is the health industry by developing a Hospital Management Information System, hereinafter referred to as SIMRS. In line with the Regulation of the Minister of Health No. 82 article 3 which contains every hospital is obliged to organize SIMRS. Due to the change from a manual system to a digital one at I. A. Moeis Hospital, an application called SIMPONIS was created. This study aims to evaluate the SIMPONIS application through user perceptions by knowing the effect of system quality, information quality, service quality, usage, and user satisfaction on the net benefits received by SIMPONIS application users using the Information System Success Model theory proposed by William H. Delone and Ephram R. McLean. This study uses quantitative methods with SEM-PLS data analysis techniques and descriptive analysis. The method of data collection was carried out using purposive sampling technique as many as 400 respondents who were patients using the SIMPONIS application. The questionnaire used has 21 questions with a five-point Likert scale. The distribution of questionnaires was carried out offline to patients who came to I. A. Moeis Samarinda Hospital. The results of this study indicate that all variables are positively and significantly correlated with the user satisfaction variable having the most influence on the net benefit variable and vice versa because it has the highest path coefficient and t-statistic values.*

KEY WORD: *Hospital Information System, DeLone & McLean Model, pls (Partial Least Square), Information System, Application*

I. INTRODUCTION

The development of information and communication technology that continues to this day has entered various aspects of people's lives. This makes activities easier, including work that becomes more effective and efficient. These benefits encourage the creation of the concept of e-activity in Indonesia, which has been started since 1994. In line with the e-activity process that occurs, the health service sector must also keep up with technological developments. One of the application of the concept of technology-based e-activity in the health sector is the Hospital Management Information System (SIMRS) which is able to manage data and present information properly to support hospital activities. In line with the Regulation of the Minister of Health No. 82 article 3 which contains every hospital is obliged to organize SIMRS. Based on data from the Ministry of Health, the number of hospitals throughout Indonesia was 2,813 units by the end of 2018. However, of the 2,813 hospitals throughout Indonesia, only 52% means 1,407 hospitals that already use SIMRS and function well, while 43% means 1,210 hospitals have not used SIMRS, and the remaining 5% means that 140 hospitals already have SIMRS but are not functioning properly. One of the hospitals that have used SIMRS is RSUD I. A. Moeis Samarinda. SIMRS at RSUD I. A. Moeis Samarinda has existed since 2017 but is considered not to be able to run optimally. This information system is named SIMPONIS Application. The importance of system evaluation for companies is that the system must be able to support the company's operational activities and support management in decision making so that the information produced by the system must be accurate and accountable. In addition, by evaluating the information system, the company is also able to assess whether the information system that has been implemented can maintain data integrity so that it is able to produce appropriate information as one of the competitive strategies to achieve company goals effectively. This study focuses on evaluating the SIMPONIS Application using the DeLone and McLean Information System Success

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Theory with six variables as measurement indicators, namely: system quality, information quality, service quality, use, user satisfaction and net benefit.

II.   LITERATURE REVIEW
Relationship between system quality and user satisfaction

Good system quality, information quality and service quality are represented by the usefulness of the system output obtained. The usefulness of the output can affect the level of use of the system in question and user satisfaction. The use and satisfaction of the system is an attitude, so it is influenced by the perception of the object that affects the attitude (Fishbein and Ajzen 1975; McGill et al. 2003; Livari 2005). System quality means the quality of the combination of hardware and software in an information system (DeLone and McLean 1992). The better the quality of the system and the quality of the system output provided, for example the faster time to access and the usability of the output of the SIMPONIS Application will cause users not to feel reluctant to reuse it, so that the intensity of using the SIMPONIS Application will increase. This is in line with user satisfaction because the better the quality of a system, the higher the level of satisfaction felt by users.

H1a: The quality of the system will have a positive and significant effect on the use
H1b: System quality will have a positive and significant effect on user satisfaction

Relationship between information quality and user satisfaction
Information quality is a desirable characteristic of system output (DeLone and McLane, 2016). This variable describes the quality of information expected by users when using the system. Better. The quality of the system presented, the higher the level of use and satisfaction felt by the user.

H2a: The quality of information will have a positive and significant effect on the use of the system
H2b: The quality of information will have a positive and significant effect on user satisfaction

Relationship between service quality and user satisfaction

Service quality is the quality of support that system users receive from information systems organizations and IT support personnel (DeLone and McLane, 2016). Information system users expect services that meet expectations when using an information system. The basic difference between service quality and system quality is that service quality is more directed to the quality provided by staff or information system support, while system quality is the technical quality of the information system itself. The better the quality of service provided, the higher the level of use and satisfaction felt by users

H3a: Service quality will have a positive and significant effect on the use of the system
H3b: Service quality will have a positive and significant effect on user satisfaction

The relationship between system uses and user satisfaction, user satisfaction with system use
This repeated use can be interpreted that the use made is beneficial for the user. The high degree of benefits obtained results in users being more satisfied. DeLone and McLean (1992) stated that the relationship between use and user satisfaction is a reciprocal relationship.

H4a: The use of the system will have a positive and significant effect on user satisfaction
H4b: User satisfaction will have a positive and significant effect on the use of the system

The relationship between system uses and user satisfaction with net benefits

Net benefits refer to the effects arising from the use of information systems, this is in the form of individual impacts, benefits to customers, benefits to society, and benefits to the organization (Saputro, 2017), DeLone and McLean (1992) grouping two dimensions, namely individual impacts and the organization's impact in its information success model, then combines them into one dimension and calls it net benefits. In addition, Petter et al. (2013) stated that net benefits mean increased decision making, increased productivity, increased sales, reduced costs, increased profits, market efficiency, consumer welfare, job creation, economic development. Individual impact is the impact of the information system on the users of the information system in this study the patient. The use of information systems that have been developed refers to how often users use information systems. The more often users use information systems, it is usually followed by the more degree of learning users get about information systems (McGill et al. 2003). This increase in the degree of learning is one indicator that there is an effect of the existence of the system on the individual impact. Organizational impact is the impact of the information system on the performance of the organization where the information system is

applied. Researchers in the field of behavior state that the application of information systems can change the decision-making hierarchy and reduce costs for information distribution (Malone in Radityo and Zulaikha 2007)

H5a: The use of the system will have a positive and significant effect on net benefits
H5b: User satisfaction will have a positive and significant effect on net benefits

Net benefit relationship to system uses and user satisfaction
**The use of information systems and user satisfaction will increase along with the net benefits received. The** greater the net benefits felt by the user, the greater the use of information systems. Likewise with satisfaction, the greater the net benefits obtained from the information system, the higher the satisfaction felt by users.

H6a: Net benefit will have a positive and significant effect on the use of the system
H6b: Net benefit will have a positive and significant effect on user satisfaction

Based on the formulation of hypotheses, the research model proposed by the authors is as shown in Figure 1.

Figure 1: Conceptual Framework
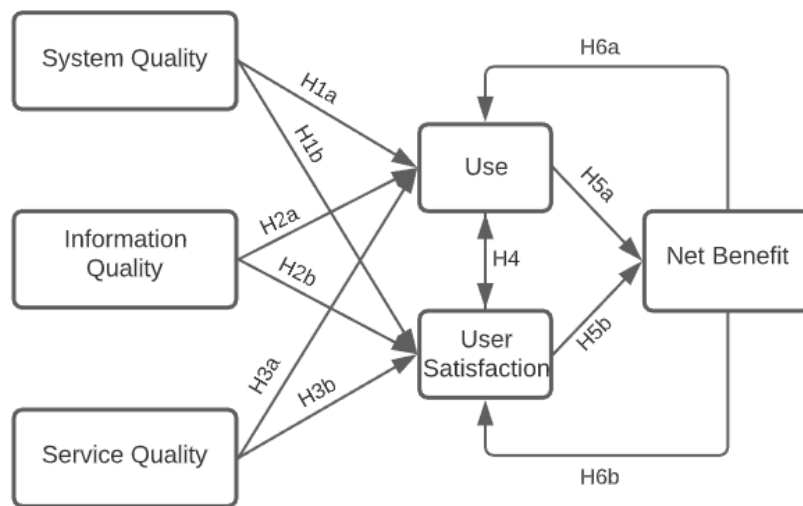
Source: Result of author's analysis, 2021

III. RESEARCH METHODOLOGY

The type of statistic used in this research is quantitative information, it is information in the form of values or information on the results of questionnaire scoring. There is also a source of information used in this research which is the main information. Basic information is information that is obtained directly from the subject being monitored and for related research needs. Main information is obtained by sharing the problem (questionnaire). In this study, the population was all patients at the IA Moeis Samarinda Hospital from January to June 2020. Sampling used purposive sampling with 400 respondents and had the characteristics of patients who had used the SIMPONIS application and came to the IA Moeis Samarinda Hospital at the time of the researcher. is doing sampling. This research was conducted on all I. A. Moeis Samarinda Hospital patients using the SIMPONIS application based on internal data from patient visits at I. A. Moeis Samarinda Hospital (2020) from January - June 2020. In this research, information analysis uses the partial least square (PLS) approach. Partial least square analysis (PLS) is a multivariate statistical method that performs comparisons between multiple limited variables and multiple independent variables. PLS is a version of the SEM statistical procedure designed to solve multiple regressions when special cases exist in information, such as small research illustration dimensions, missing values, and multicollinearity.

IV. RESULT AND DISCUSSION

Data Analysis

The first-stage model evaluation focuses on the measurement model. Examination of the PLS-SEM estimation for the measurement model allows the researcher to evaluate the reliability and validity of the constructs. In particular, multivariate measurement involves using multiple variables to measure a concept indirectly. Evaluation of the measurement model includes tests of internal consistency reliability, indicator reliability, convergent validity and discriminant validity as shown in Table 1. There are two methods can be used to measure reliability of a construct, namely Cronbach's alpha or composite reliability. However, the use of Cronbach's alpha tends to provide a lower estimated value so that PLS-SEM is recommended to use composite reliability. Indicator reliability on PLS-SEM is measured from the outer loading value which shows the correlation between the indicator and its construct. Convergent validity in constructs can be measured using AVE. Discriminant validity can be measured from cross loading or the loading value of other constructs is a comparison to the value of the outer loading indicator associated with a construct where the required loading indicator value must be more than the cross loading value.

Table 1: Evaluation of Measurement Model

Variables and Indicators	Loadings	Composite Reliability	AVE	Cross Loading
• System Quality SQ1 SQ2 SQ3 SQ4	0,879 0,886 0,872 0,845	0,926	0,758	Yes
• Information Quality IQ1 IQ2 IQ3 IQ4 IQ5	0,878 0,880 0,726 0,869 0,843	0,923	0,708	Yes
• Service Quality VQ1 VQ3 VQ4	0,885 0,911 0,875	0,912	0,776	Yes
• Use U2	1,000	1,000	1,000	Yes
• User Satisfaction US1 US2 US3	0,909 0,915 0,923	0,940	0,839	Yes
• Net Benefit NB1 NB2 NB3	0,902 0,899 0,760	0,923	0,734	Yes

Source: Calculated using SmartPLS, 2021

Hypothesis Test

After ensuring that the measurement model of the construct is reliable and valid, then hypothesis testing is carried out. Hypothesis testing in this study is carried out on a structural model or inner model which shows a direct or indirect relationship between exogenous and endogenous latent variables. Hypothesis testing is based on the significance value of the path coefficient after resampling or bootstrapping 5,000 times. The statistical test used is the t test with a confidence level of 95% or a significance level of 5%. The hypothesis is accepted if the t value is more than the t-table value for the two-tailed test, namely 1,96. The results of boostraping procedur as shown in Table 2.

Based on Table 2, the results of hypothesis testing can be interpreted as follows:
1. System quality has a positive and significant effect on the use of the Simponis Case Study Application at I. A. Moeis Samarinda Hospital.
2. System quality has a positive and significant effect on user satisfaction in the Simponis Application Case Study at I. A. Moeis Samarinda Hospital.
3. The information system has a positive and significant effect on the use of the Simponis Case Study Application at I. A. Moeis Samarinda Hospital.
4. The information system has a positive and significant effect on user satisfaction in the Simponis Application Case Study at I. A. Moeis Samarinda Hospital.
5. Service quality has a positive and significant effect on the use of the Simponis Case Study Application at I. A. Moeis Samarinda Hospital.

6. Service quality has a positive and significant effect on user satisfaction. Simponis Application Case Study at RSUD I. A. Moeis Samarinda.
7. Use has a positive and significant effect on user satisfaction. Simponis Application Case Study at RSUD I. A. Moeis Samarinda.
8. User satisfaction has a positive and significant effect on the use of the Simponis Case Study Application at I. A. Moeis Samarinda Hospital.
9. use has a positive and significant effect on the net benefit of the Simponis Case Study Application at I. A. Moeis Samarinda Hospital.
10. User satisfaction has a positive and significant effect on the net benefit of the Simponis Case Study Application at I. A. Moeis Samarinda Hospital.
11. net benefit has a positive and significant effect on the use of the Simponis Case Study Application at I. A. Moeis Samarinda Hospital.
12. net benefit has a positive and significant effect on user satisfaction Simponis Application Case Study at RSUD I. A. Moeis Samarinda.

Table 2. Bootstraping Results

Path Coefficients				
Variable	Original Sample	t Statistics	p Values	5% Significance Level
SQ → U	0,196	2,712	0,003	Significant
SQ → US	0,127	2,541	0,006	Significant
IQ → U	0,217	2,464	0,007	Significant
IQ → US	0,185	3,378	0,000	Significant
VQ → U	0,292	3,464	0,000	Significant
VQ → US	0,432	7,589	0,000	Significant
U → NB	0,145	3,143	0,001	Significant
U → US	0,227	5,373	0,000	Significant
US → NB	0,677	16,408	0,000	Significant
US → U	0,522	8,313	0,000	Significant
NB → U	0,197	2,932	0,002	Significant
NB → US	0,775	30,435	0,000	Significant

Source: Calculated using SmartPLS, 2021

Discussion

The results show that the system quality variable has an influence on use with a T-statistic value of 2.712 > 1.64 which is perceived with a positive path coefficient value of 0.196 and a P-value of 0.003 <0.05 which indicates significance. The results of this study have similarities with research conducted by Trihandayani et al (2018) that system quality has a positive and significant influence on use. It can be said that the quality of the system applied to the SIMPONIS application affects the use. So that the better the system quality of the SIMPONIS application, the higher the level of SIMPONIS use will be.

The results show that the system quality variable has an influence on user satisfaction with a T-statistic value of 2.541 (>1.64) which is perceived with a positive path coeficient value of 0.127 and a P-value of 0.006 <0.05 which indicates significance. The results of this study have similarities with research conducted by Trihandayani et al (2018) and Antong (2017) that system quality has a positive and significant influence on user satisfaction. It can be said that the quality of the system applied to the SIMPONIS application affects the satisfaction of application users. So that the better the system quality of the SIMPONIS application, the more satisfied users.

The results showed that the information quality variable had no effect on use with a T-statistic value of 2.464 (>1.64) which was felt with a positive path coeficient value of 0.217 and a P-value of 0.007> 0.05 which indicated a significance so that this hypothesis is accepted. The results of this study have similarities with research conducted by Trihandayani et al (2018) that information quality has a positive and significant influence on use. It can be said that the quality of information applied to the SIMPONIS application affects the level of application usage. So that the better the quality of information from the SIMPONIS application, the higher the level of use.

The results showed that the information quality variable has an influence on user satisfaction with a T-statistic value of 3.378 (>1.64) which is perceived with a positive path coeficient value of 0.185 and a P-value of 0.000 <0.05 which indicates significance. The results of this study have similarities with research conducted by Trihandayani et al (2018) and Antong (2017) that information quality has a positive and significant influence on user satisfaction. It can be said that the quality of information applied to the SIMPONIS application affects the satisfaction of application users. So that the better the quality of information from the SIMPONIS application, the more satisfied users.

The results show that the service quality variable has an influence on use with a T-statistic value of 3.464 (>1.64) which is perceived with a positive path coeficient value of 0.292 and a P-value of 0.000 <0.05 which indicates significance. The results of this study have similarities with research conducted by Trihandayani et al (2018) that service quality has a positive and significant influence on use. It can be said that the quality of the system applied to the SIMPONIS application affects the level of application usage. So that the better the system quality of the SIMPONIS application, the higher the level of use.

The results showed that the service quality variable has an influence on user satisfaction with a T-statistic value of 7.589 (>1.64) which is perceived with a positive path coeficient value of 0.432 and a P-value of 0.000 <0.05 which indicates significance. The results of this study have similarities with research conducted by Trihandayani et al (2018) that service quality has a positive and significant effect on user satisfaction. It can be said that the quality of service applied to the SIMPONIS application affects the satisfaction of application users. So that the better the service quality of the SIMPONIS application, the more satisfied users.

The results showed that the use variable has an influence on user satisfaction with a T-statistic value of 5.373 (>1.64) which is felt with a positive path coeficient value of 0.227 and a P-value of 0.000 <0.05 which indicates significance. The results of this study have similarities with research conducted by Trihandayani et al (2018) that use has a positive and significant influence on user satisfaction. It can be said that the level of usage on the SIMPONIS application affects the satisfaction of application users. So the higher the level of use, the more satisfied users.

The results showed that the user satisfaction variable has an influence on use with a T-statistic value of 8.313 (>1.64) which is perceived with a positive path coeficient value of 0.522 and a P-value of 0.000 <0.05 which indicates significance. The results of this study have similarities with research conducted by Trihandayani et al (2018) that user satisfaction has a positive and significant influence on use. It can be said that user satisfaction affects the level of use of the SIMPONIS Application. So that the higher the level of user satisfaction, the more patients who use the SIMPONIS application.

The results showed that the use variable had an influence on the net benefit with a T-statistic value of 3.143 (>1.64) which was felt with a positive path coeficient value of 0.145 and a P-value of 0.001 <0.05 which indicated significance. The results of this study have similarities with research conducted by Trihandayani et al (2018) that use has a positive and significant effect on net benefits. It can be said that the level of application use affects the net benefits received by SIMPONIS Application users or in this study the patients of RSUD I.A. Moeis Samarinda. So that the higher the level of application usage, the higher the net benefits received by SIMPONIS Application users.

The results showed that the user satisfaction variable had an influence on net benefit with a T-statistic value of 16,408 (>1,64) which was felt with a positive path coeficient value of 0.667 and a P-value of 0.000 <0.05 which indicated significance. The results of this study have similarities with research conducted by Trihandayani et al (2018) and Antong (2017) that user satisfaction has a positive and significant effect on net benefits. It can be said that the level of user satisfaction affects the net benefits received by users of the SIMPONIS application or in this study the patients of RSUD I.A. Moeis Samarinda. So that the higher the satisfaction of application users, the higher the net benefits received by SIMPONIS Application users.

The results showed that the net benefit variable had an influence on use with a T-statistic value of 2.932 (>1.64) which was felt with a positive path coeficient value of 0.197 and a P-value of 0.002 <0.05 which indicated significance. The results of this study have similarities with research conducted by Trihandayani et al (2018) that net benefits have a positive and significant effect on use. It can be said that the net benefits received by users or in this study were I.A. Hospital patients. Moeis Samarinda affects the level of usage of the SIMPONIS Application. So that the higher the net benefit received by the user, the higher the level of use of the SIMPONIS application.

The results show that the net benefit variable has an influence on user satisfaction with a T-statistic value of 30.435 (>1.64) which is perceived with a positive path coeficient value of 0.775 and a P-value of 0.000 <0.05 which indicates significance. The results of this study have similarities with research conducted by Trihandayani et al (2018) that net benefits have a positive and significant effect on user satisfaction. It can be said that the net benefits received by users or in this study were I.A. Hospital patients. Moeis Samarinda affects the level of satisfaction of SIMPONIS Application users. So that the higher the net benefits received by the user, the higher the level of user satisfaction of the SIMPONIS Application.

V. CONCLUSION, LIMITATION AND FUTURE RESEARCH

Based on the results of research through analysis and discussion in this study, the following conclusions can be drawn: 1) The results of descriptive analysis show that the system quality variable has the highest percentage of 86.7% which is included in the very good category and the lowest percentage is the use variable of 75. % That fall into the good category. 2) The quality of the system has a positive and significant effect on the use of the Simponis Application (Case Study at RSUD IA Moeis Samarinda. 3) The quality of the

system has a positive and significant effect on user satisfaction of the Simponis Application (Case Study at RSUD IA Moeis Samarinda. 4) The quality of information has a positive and significant effect on significantly to the use of the Simponis Application system (Case Study at RSUD IA Moeis Samarinda. 5) The quality of information has a positive and significant effect on user satisfaction of the Simponis Application (Case Study at RSUD IA Moeis Samarinda. 6) Service quality has a positive and significant effect on the use of the Simponis Application system (Case Study at IA Moeis Samarinda Hospital. 7) Service quality has a positive and significant effect on user satisfaction Simponis Application (Case Study at IA Moeis Samarinda Hospital. 8) The use of the system has a positive and significant effect on user satisfaction Simponis Application (Case Study at RSUD I A. Moeis Samarinda. 9) User satisfaction has a positive and significant effect on the use of the Simponis Application system (Case Study at IA Moeis Samarinda Hospital. 10) The use of the system has a positive and significant effect on the net benefits obtained by the Simponis Application (Case Study at IA Moeis Samarinda Hospital. 11) User satisfaction positive and significant effect on the net benefits obtained by the Simponis Application (Case Study at IA Moeis Samarinda Hospital. 12) Net benefits have a positive and significant effect on the use of the Simponis Application system (Case Study at IA Moeis Samarinda Hospital. 13) Net benefits have a positive effect and significant on user satisfaction Simponis Application (Case Study at RSUD IA Moeis Samarinda.

Theoretical Suggestions: 1) Future researchers are expected to expand the object of research. 2) Future researchers are expected to be able to expand the scope of respondents and add indicators so that they can conduct more in-depth research on the condition of information systems that are applied more broadly.

Practical Advice. Suggestions from researchers to companies can be concluded based on the results of the Importance and Performance Matrix Analysis (IPMA) in chapter 4 it can be concluded that: 1) RSUD IA Moeis Samarinda can increase or maintain the existing level of user satisfaction to increase or maintain the net benefits received by SIMPONIS application users because they are in quadrant 1 position "keep up the good work" in Importance and Performance Matrix Analysis (IPMA). 2) RSUD IA Moeis Samarinda can develop use to increase the net benefits received by SIMPONIS Application users because the use is in quadrant IV in the Importance and Performance Matrix Analysis (IPMA) with the U2 indicator "I use the SIMPONIS application as the main source of getting information related to services. at RSUD IA Moeis Samarinda" becomes a top priority because it has the highest importance value. 3) RSUD IA Moeis Samarinda can develop information quality to increase the net benefits received by SIMPONIS Application users because information quality is in quadrant IV in the Importance and Performance Matrix Analysis (IPMA) with IQ1 indicator "I get complete information regarding services and facilities on The SIMPONIS application is a top priority because it has the highest importance value. 4) RSUD IA Moeis Samarinda can develop a quality system to increase the net benefits received by SIMPONIS Application users because the system quality is in quadrant IV in the Importance and Performance Matrix Analysis (IPMA) with 160 SQ3 indicator "I don't have to wait long to get information after accessing the SIMPONIS Application" becomes a top priority because it has the highest importance value. 5) RSUD IA Moeis Samarinda can develop service quality to increase the net benefits received by SIMPONIS application users because service quality is in quadrant IV in the Importance and Performance Matrix Analysis (IPMA) with the VQ3 indicator "The SIMPONIS application provides useful and adequate information for needs me" becomes the top priority because it has the highest importance value.

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