



EVALUATION OF GENERIC REGIONAL HEALTH INFORMATION SYSTEMS (SIKDA) WITH THE SUCCESS MODEL APPROACH OF DELONE AND MCLEAN INFORMATION SYSTEMS IN AMBON CITY HEALTH DEPARTMENT.

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Article History: Received: 07.05.2023

Revised: 19.06.2023

Accepted: 14.07.2023

Abstract

Object: This research is to evaluate the generic Regional Health Information System (SIKDA) with the Delone and Maclean Information System Success Model Approach at the Health Office in Ambon City.

Method: Using analytic observational method as a research design. The population and sample are the same because they use a total sampling technique which involves 118 respondents, namely employees from 3 Community Health Centers in Ambon city who have applied Generic SIKDA for 1 year. Data obtained by distributing questionnaires and measured by analysis using Structural Equation Modeling (SEM) will be processed using AMOS software version 24.00

Results: System quality has an effect on Generic SIKDA user satisfaction and User satisfaction has a significant effect on net benefits.

Conclusion: Information quality and quality have no significant effect on user satisfaction, system quality has an effect on Generic SIKDA user satisfaction and user satisfaction has a significant effect on net benefits.

Keywords: Generic SIKDA, Delone and Mclean Success Model Approach

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DOI: 10.31838/ecb/2023.12.s3.678

1. Introduction

In the context of implementing effective and efficient health efforts, a Health Information System is needed to produce reliable and easily accessible data and information¹. The embodiment of integrated development planning, implementation, evaluation and control needs to be supported by data that is accurate, up-to-date, integrated, accountable, easily accessible, used and managed in an integrated and sustainable manner².

Health information is defined as health data that has been processed or processed into a form that contains value and meaning, useful for increasing knowledge in supporting health development. This data and information then becomes a reference in the process of management, decision making, planning and accountability³.

The Ambon City Health Office with the support of the Ambon City Government has inaugurated the Generic Regional Health Information System Application (SIKDA), which is a health information system application that integrates information systems in health centers, hospitals and other health facilities, both government and private. . The Generic SIKDA application was designed and created to make it easier for Puskesmas workers to report to various programs within the Ministry of Health. Thus it is expected that the flow of data from the lowest level to the central level can run smoothly, in a standardized, timely and accurate manner as expected.³

Measuring or assessing the quality of an effective information system is difficult to do directly such as measuring the cost-benefit (Laudon and Laudon, 2000). The difficulty of assessing the success and

effectiveness of information systems has directly encouraged many researchers to develop models to assess information system success. One of the popular models in the second stream, namely the flow that focuses on implementation success at the organizational level is the model developed by DeLone and McLean (1992) known as the DeLone and McLean Information Systems Success Model. There have been many empirical studies conducted in various fields. and research objects to test the model developed by Delone and McLean (1992) which later underwent an update in 2003 to become system quality, information quality, service quality, use, user satisfaction and net benefits.⁴⁻⁶

This study intend to measure system quality, information quality, service quality which has a significant effect on user and user satisfaction has a significant effect on the net benefit of using generic SIKDA at health center in the Ambon City Health Office.

2. Method

This type of the research is analytic observational, namely research that aims to describe or describe the characteristics of a situation or object of research which is carried out through the collection and analysis of quantitative data and statistical testing⁷. The population in this study are employees or users of SIKDA Generic health centers at the Ambon City Health Office that have implemented Generic SIKDA for at least 1 (one) year. The sample in this study was taken using total sampling, where the entire population was used as the sample. The research instrument used was a questionnaire, namely a number of written questions that were used to obtain information about respondents' perceptions where the data measurement of the variables studied was

based on a four-level scale ranging from numbers 4 to 1. ⁸ Therefore indicator will be described in a statement where each indicator or statement is given an assessment score of 1 to 4. Each score for each statement item in one variable is added up and divided by the number of statements. The questionnaire that will be given is first tested for its validity and reliability by using a validity test and a reliability test. The data in the research using analysis using Structural Equation Modeling (SEM) will be processed using AMOS software version 24.00

3. Result

The characteristics of the respondents in this study based on age, gender, level of education and length of work can be seen in table 1. For the age of employees at the Health Center in Ambon City, the majority were aged 23-40, namely 77 employees (65%). For the gender category, the majority of employees are women, namely 86 employees (73%). For the level of education, it can be seen that the majority of employees are Diploma III educated as many as 58 respondents (49%). For the category of employee length of work at the health center in Ambon City, the majority is 1-5 years with a total of 52 respondents (44%)

Table 1. Characteristics of Respondents

Number	Characteristics	Frequency		
		Average \pm Std.D	n	%
1	Age	1.34 \pm 0.47		
	23 - 40		77	65
	41-59		41	35
2	Gender			
	Man		32	27
	Women		86	73
3	Education			
	Masters (S2)		2	2
	Bachelor Degree		38	32
	Profession		12	10
	Diploma IV		6	5
	Diploma III		58	49
	High School		2	2
4	Length of Work			
	15 and above		36	31
	11-15		18	15
	6-10		12	10
	1-5		52	44

Data Source: Primary Data, 2023

Hypothesis test results

SEM Data Analysis

The data in this study with analysis techniques using Structural Equation Modeling (SEM) will be processed using

AMOS software. The steps in modeling are as follows

a. Model Development Based on Theory

The first step of developing a model is based on theory. The strength of the relationship between variables does not lie in the chosen analytical method, but is derived from previous theories to support the analysis.

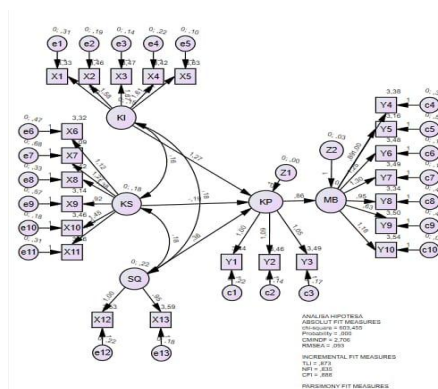
b. Path Diagram

Perform a Flowchart design in accordance with exogenous variables and endogenous variables.

c. Structural Equation Model Testing

Structural equation model analysis is carried out after confirmatory factor

analysis and ensures that the confirmatory model is valid and reliable for each variable. With the proposed model, this study includes several variables, namely in the form of exogenous variables are information quality (IC), system quality (KS), service quality (SQ), and endogenous variables are user satisfaction (KP), and net apology (MB) Results analysis for the full Structural equation model shown in the image below:



Picture 1. Structural Equation Model Analysis (beginning)

d. Test Model Goodness of Fit

Analysis of the results of data research on the full SEM model was carried out by carrying out suitability and

statistical tests. The test for the feasibility of the model in this study is as shown in the table below:

Table 2 Results of the Goodness of Fit Model Test (Initial)

Suitability size	Cut off value	Analysis Results	Evaluation
Absolut Fit Measures			
χ^2 Chi-Square	603.55	563.486	Good
χ^2 Significance probability	≥ 0.05	.000	Not Good
Relative χ^2 (CMIN/DF)	≤ 2.00	2.790	Not Good
RMSEA	≤ 0.08	0.095	Not Good
Incremental Fit Measures			
TLI	≥ 0.95	0.866	Not Good
NFI	≥ 0.90	0.830	Not Good
CFI	≥ 0.95	0.883	Not Good
Parsimony Fit Measures			
PNFI	≥ 0.60	0.726	Good
PCFI	≥ 0.60	0.772	Good

Source: primary data, 2023

In the table above, explaining the value of standardized regression weights, it can be seen that there is one that is still below 0.5,

so this model is not feasible for hypothesis testing.

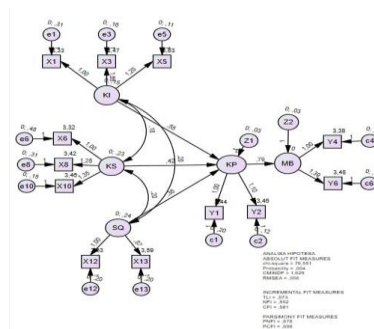
Table 3 Result of Standardized Regression Weight

	Estimate	C.R.
Information Quality on User Satisfaction	1,094	0,966
System Quality on User Satisfaction	-0,092	-0,177
Service Quality on User Satisfaction	0,429	0,760
User Satisfaction of Net Benefit	0,850	9,533

Source: primary data, 2023

After testing the model and seeing the cut off value from the SEM assumptions, there is still a research index that is still far from the cut off value, so it is necessary to modify the model by removing indicators that have a loading factor value that is still less than 0.6 (Garson, 2008) namely

indicators: X2, X4, X7, X9, X11, Y3, Y1, Y2, Y3, Y4, Y5, Y7, Y8, and Y9. After modifying the model by removing these indicators, the results of data analysis with the Amos program are shown in the image below:



Picture 2. Structural Equation Model Analysis (Final)

To see the results of the feasibility test with the goodness of fit index after the model revision was carried out by eliminating indicators that were below 0.6, it can be seen in the table below, with a description of the goodness of fit index

values for all the criteria used, then all the goodness of fit criteria have been meets the eligibility requirements because it has a value within the expected range and thus the indicators used in the study are quite feasible to test the hypothesis.

Table 4 Test Results of the Model Revision Goodness of Fit Model

Suitability size	Cut off value	Analysis Results	Evaluation
Absolute Fit Measures			
χ^2 Chi-square	237.240	76.55	Good
χ^2 significance probability	≥ 0.05	0.04	Good
Relative χ^2 (CMIN/DF)	≤ 2.00	1.68	Good
RMSEA	≤ 0.08	0.05	Good
Incremental Fit Measures			

TLI	≥ 0.95	0.95	Good
NFI	≥ 0.90	0.98	Good
CFI	≥ 0.95	0.993	Good
Parsimony Fit Measures			
PNFI	≥ 0.60	0.67	Good
PCFI	≥ 0.60	0.69	Good

Source: primary data, 2023

Hypothesis test

The next step is hypothesis testing. Testing the hypothesis in this study using a regression weight. According to Ghozali¹⁰, the criterion for testing the hypothesis is

that if the critical ratio (CR) is > 1.96 and the p-value is with a significance level ratio ($\alpha = 5\%$) or 0.05, then the exogenous variables have no effect on the endogenous variables. CR with three stars (***) means very low value, namely < 0.001 .

Table 5 Structural Equation Regression Test Results (End)

Number	Category	Estimate	C.R.	P	Information
1	Information Quality on User Satisfaction	0,549	1,593	0,111	Not significant
2	System Quality on User Satisfaction	0,417	1,989	0,047	Significant
3	Service Quality on User Satisfaction	0,357	1,909	0,056	Not significant
4	User Satisfaction of Net Benefit	0,792	8,623	***	Significant

Source: primary data, 2023

4. Discussion

The Influence of Information Quality on User Satisfaction

The results of hypothesis testing on this variable show that the quality of information does not affect user satisfaction. The results of this test are in contrast to DeLone and McLean's information system success model. To assess the success of the mandatory system, it cannot be judged from the level of use of the SIKDA service system by users, in this case the human resources at the public health center. The results of this study provide an explanation that the information presented is inaccurate, incomplete, and there is a lack of outreach to application users. SIKDA is at the

health center level, so it will not encourage users to use SIKDA more often.

Effect of System Quality on User Satisfaction

The results of hypothesis testing on this variable indicate that system quality has a significant effect on user satisfaction. An application system that is comfortable and has an easy-to-use interface can encourage users in this case to use SIKDA. The faster SIKDA in responding to commands will affect the level of usage. The results of this study also prove that an application system that is less reliable, less flexible and has features and functions that are not well understood by users will affect user satisfaction. According to Yuliasari (2014), a good quality system will also

produce a good response from users. On the other hand, there may be rejections if the quality of the system is poor. The results of research by Hudin and Riana (2016) show that system quality affects usage.

Effect of Service Quality on User Satisfaction

The results of hypothesis testing on this variable show that service quality has no significant effect on user satisfaction. The results of this study are in contrast to DeLone and McLean's success model. To assess the success of the mandatory system, it can be assessed from the use of the Regional Health System (SIKDA). The part of developers who quickly solve problems when errors occur and responsively respond to all forms of user complaints can encourage users to continue using. The form of concern for the needs of system users by the developer, makes the developer's department continue to update the system according to needs. If the desired needs have been met, it can encourage users to use it so that the level of use increases.

Effect of User Satisfaction on Net Benefits

The results of testing the hypothesis on this last variable indicate that user satisfaction has a significant effect on net benefits. The results of this test support the success model of DeLone and McLean's information systems. High user satisfaction will increase the net benefits to be received. The more user satisfaction with the system, the more useful it will be in carrying out service tasks or service processes so that the benefits or objectives of SIKDA can be achieved quickly and easily. In line with this study, research by Adholay et al. (2018) shows the same thing. In their research on the context of online systems in Yemen, found that user

satisfaction has a positive effect on performance impact.

Conclusions and Recommendations

5. Conclusion

1. Information quality has no significant effect on user satisfaction.
2. The quality of the system affects SIKDA user satisfaction.
3. Service quality has no significant effect on user satisfaction.
4. User satisfaction has a significant effect on net benefits

Suggestion

1. The research results can be used as a consideration for increasing regional health information system resources which include the use of information technology with the addition of features to facilitate and expedite the use of SIKDA
2. Conducting bridging with other applications to optimize the available human resources at Public health center in the Ambon City Public Health Office.

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