Model for Measuring the Success of the State Asset Management Information System (SIMAN) at the Ministry of Finance of the Republic of Indonesia

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Abstract— *This study aims to provide empirical evidence regarding the effect of system quality, information quality, service quality, system usage, user satisfaction, and net benefits. Consist of 18 tested hypotheses. The sample of this study were users and managers in the Directorate General of State Assets (DJKN) and Institutions or Ministries and obtained 380 respondents from the total number of active SIMAN users as many as 46,984. Data were analyzed by using Structural Equation Model (SEM) method. The result shows several findings about the quality of the system, but have positive effect to user satisfaction, while the quality of servide has positive effect on the use of the system, but has no significant effect on user satisfaction. The net benefit factor has positive effect for system quality, system usage and user satisfaction, but not significantly for information quality and service quality, information quality and service quality on system use, and has positive effect for system quality, information quality on user satisfaction. And for the service quality has no significant effect to the net benefits of user satisfaction. The result of this study can be used as consideration in making improvements in the implementation and development of SIMAN.*

Keywords— *Delone and Mclean development models, system quality, information quality, service quality, SIMAN.*

I.   INTRODUCTION

Government Regulation Number 6 of 2006 (PP No.6 / 2006), Regulation of the Minister of Finance Number 120 of 2007 (Permenkeu Number 120 / PMK.06 / 2007), and Regulation of the Minister of Finance Number 29 of 2010 (Permenkeu Number 29 / PMK.06 / 2010) The three regulations were made as a form of BMN management in general for all government agencies. This State Asset Management is packaged in an integrated manner by the Directorate General of State Assets (DJKN) of the Ministry of Finance of the Republic of Indonesia. To support the management of state assets, a management information system was formed that covers all state assets which are managed comprehensively through an application or software called the SIMAN application in accordance with the Letter of the Minister of Finance S-220 / MK.6 / 2015 which contains "Launching SIMAN Features Asset Master, Recording SK, Updating Data and RKBMN ".

SIMAN application stands for State Asset Management Information System. This application is an application or software that is operated to support the process of managing State Property. The process includes planning, using, utilizing, maintaining, administering, eliminating and transferring state assets. This application is internet-based and can be accessed by managers and users. This application can process and produce reports on State assets in a good and informative manner.

The success of information systems can be seen from several things such as how good the quality of the system is, the information provided, how the level of use, and usage satisfaction and other things that show how much effect is obtained by the existence of the information system. The model provided by the Updated D&M IS Success Model according to the author has a match with the SIMAN characteristics which are required to produce quality BMN needs planning. In the context of a government system where the use of the system is mandatory. In the mandatory system, mandatory use of the system is defined as actual use..

So far there has never been an evaluation of the success of using SIMAN so it is not yet known whether this system is truly effective and efficient in answering needs. The Directorate General of State Assets (DJKN) has implemented SIMAN for almost 5 (five) years. Users are deemed to have sufficient knowledge and skills about this system. So that it is sufficient to evaluate and assess whether the SIMAN system can be said to be successful when measured by the Updated D & M IS Success Model.

II.   LITERATURE REVIEW

This study uses the Information Systems Success Model of Delone and McLean (1992) and the updated model of DeLone and McLean (2003). This model is a development of a behavioral information system that studies organizational efforts in developing information systems to direct the behavior of individuals in interacting with the information technology system to help achieve their goals.

III.   RESEARCH METHOD

This study refers to research conducted by Wang and Liao (2007). The difference is the arrow direction of the user satisfaction variable to use and the researcher develops the Updated D&M IS Success Model, including the addition of the relationship between the variables of information quality, system quality, and service quality on net benefits and variables of information quality, system quality, and quality. service towards net benefits through user satisfaction and system usage.
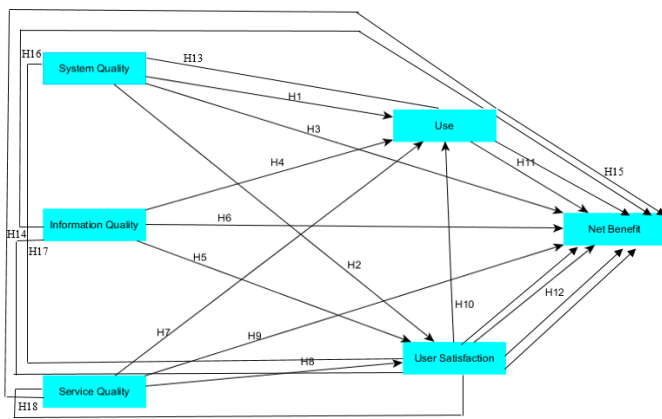
Fig. 1 Research metodology.

A. Hypothesis development

Ease of use of the system has a positive impact on system use, this was done by Rai et al. (2002) and Kositanurit et al. (2006) Hsieh and Wang (2007) also found that system quality has a positive effect on expanding / adding to the use of information systems. And it can be said that it is useful if the information system can have an impact on the user's work environment. This is similar to the research of Wixom and Watson (2001) that a high level of system quality is associated with a high level of perceived net benefits. So the research hypothesis is:

H.1 : System quality has a positive effect on SIMAN users

H.2 : System quality has a positive effect on SIMAN user satisfaction

H.3 : System quality has a positive effect on net benefits

The quality of information that is getting better is marked by the increasing use of the system and the quality of the output produced. Of course this will increase user satisfaction. The positive relationship between information quality and system use has been proven empirically by, among others, Livari (2005), Kelkarni et al. (2006), Wu and Wang (2006), Chiu et al. (2007) and Halawi et al. (2007) . From some of the empirical evidence, the hypothesis in this study is:

H.4 : The quality of information will have a positive effect on the use of SIMAN

H.5 : The quality of information will have a positive effect on user satisfaction

H.6 : The quality of information will have a positive effect on user satisfaction

The relationship between service quality and user satisfaction using a user satisfaction approach. Expect the quality of services provided by information system providers to have an impact on user satisfaction. Empirical evidence is also found by Halawi et al. (2007). Good service quality will increase the net benefits received by users of information systems. Based on the results of previous research, the hypothesis in this study is:

H.7 : Service quality will have a positive effect on SIMAN usage.

H.8 : Service quality will have a positive effect on user satisfaction.

H.9 : Service quality will have a positive effect on net

benefits.

Research conducted by McGill et al. (2003) which states that the more satisfied users are with information systems, the higher the user's desire to use information systems for the next period. So the hypothesis in this study is :

H.10 : User satisfaction will have a positive effect on the use of SIMAN.

The benefits of information system applications will affect the acceptance attitude of users and this also helps users to more easily manage State Property (called BMN). By using information system applications correctly, it will improve the performance and quality of work of SIMAN employees towards the better and accelerate work so that work is more effective and efficient. Based on these studies, the hypothesis in the context of this study is:

H.11 : The use of the system will have a positive effect on net benefits

H.12 : User satisfaction will have a positive effect on net benefits

A system featuring high data quality and system quality can provide a net benefit to a wide range of stakeholders, including individuals, groups of individuals, and organizations. It can make users better understand the context in which to increase the productivity of decision making, and change the way people carry out their tasks. Therefore, in this study the following hypothesis is formulated:

H.13 : system quality has a positive effect on net benefits through the use of the system

Research conducted by Wahyuni (2011) explains that the quality of information is proven to affect the intensity of use. So, it can be concluded that based on user perceptions, the higher the quality of information generated from the system, the greater the intensity of use. In this study, the following hypothesis is formulated:

H.14 : information quality has a positive effect on net benefits through the use of the system

The better the quality of service produced by an information system, the greater the intensity of use. so that it will provide benefits in the form of a positive impact on individual users and organizations. Therefore, in this study the following hypothesis is formulated:

H.15 : service quality has a positive effect on net benefits through the use of the system

Usage satisfaction is used as a mediating variable for the effect of system quality on net benefits, supported by several previous studies that show that system quality produces a significant positive effect. Chiu et al. (2007), Halawi et al. (2007), Wu & Wang (2006), Wahyuni (2001), Efendy (2013) on the use of information systems in the public sector.

H.16 : system quality has a positive effect on net benefits through user satisfaction

User satisfaction is used as a mediating variable on the effect of information quality on net benefits. If users of information systems believe that the quality of the system and the quality of information generated from the system used is good, they will feel satisfied using the system. With the support of fifteen researchers collected by Petter et al. (2008),

it produces a significant positive effect. Therefore, in this study the following hypothesis is formulated:

H.17 : information quality has a positive effect on net benefits through user satisfaction

user satisfaction has a reciprocal relationship. Seddon (1997) states that the impact of using information systems in the form of increasing individual performance will affect the level of user satisfaction. From some of the empirical evidence, the hypothesis in this study is :

H.18 : Service quality has a positive effect on net benefits through user satisfaction

IV.   RESEARCH RESULT AND DISCUSSION

A. Descriptive Statistics

The number of respondents was 380, consisting of 37 (9.7%) SIMAN managers from internal Ministry of Finance and 34.3 (90.3%) SIMAN users from external Ministry of Finance. Descriptive statistics of respondents' answers are presented in Table 1.

TABLE 1. Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
SQ	380	2,89	2,11	5,00	3,8728	,51875	,269
IQ	380	2,20	2,80	5,00	3,9916	,43505	,189
SRVQ	380	2,46	2,54	5,00	3,9314	,46896	,220
USE	380	2,33	2,67	5,00	3,9553	,42777	,183
US	380	2,75	2,25	5,00	4,0138	,50359	,254
NB	380	3,00	2,00	5,00	4,0116	,55994	,314

Questionnaires with a scale of 1-5 Questionnaires with a scale of 1-5, the variable SQ (System Quality) the average score of users who answered questions was 3.87, the variable IQ (Information Quality) the average score of users who answered questions was 3.99 , The SRVQ (Service Quality) variable, the average value of users who answered the questions was 3.93, the USE (System Use) variable the average value of users who answered the questions was 3.95, the US variable (Quality of Use) the average value of users who answered the question was 4.01, the variable NB (Net Benefit) the average value of users who answered the question was 4.01. The results show that the system quality, information quality, service quality, system usage, and net benefits received by SIMAN users are relatively good.

B. Evaluation of Measurement Models

Measurement model by testing goodnes of fit. For model estimation using the Robust Maximum Likelihood method.
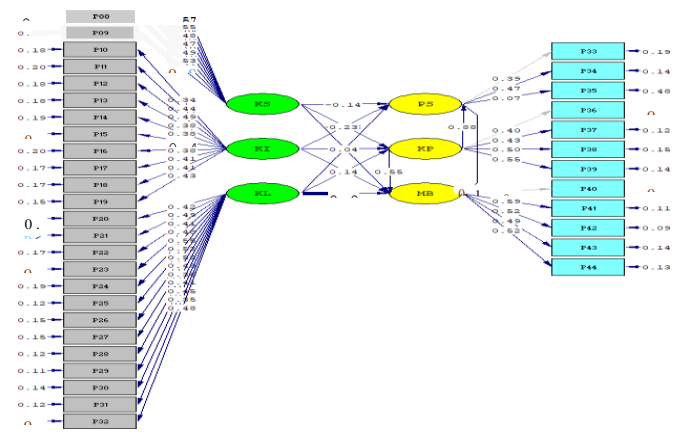
C'Hi—Square=118.94   df=887   P— value=1. 00000 RMSM=0 .000

Fig 2. Model Estimation Result Diagram

TABLE 2. Goodness of Fit Test Results

Goodnes of fit Index	Cut off	Model 1	Kriteria
Likelihood Chi Square	The smaller the better	118,94	Baik
Probability	≥ 0,05	1	Baik
NCP	The smaller the better	0,000	Baik
RMSEA	≤ 0,05	0,000	Good fit
CVI	Small value and close to ECVI saturated = 5,22	2,88	Baik
AIC	Small value and close to saturated AIC = 1980	324,94	Baik
CAIC	Small value and close to saturated CAIC = 6870,77	833,78	Baik
NFI	≥ 0,9	1,00	Good fit
NNFI	≥ 0,9	1,00	Good fit
CFI	≥ 0,9	1,00	Good fit
IFI	≥ 0,9	1,00	Good fit
RFI	≥ 0,9	1,00	Good fit
CN	≥ 200	3149,05	Good fit
RMSR	≤ 0,05	0,022	Good fit
GFI	≥ 0,9	0,78	Poor fit
AGFI	≥ 0,9	0,75	Poor fit

C. Construct Validity and Reliability

TABLE 3. Results of construct validity and reliability

Variabel	Indikator	Standarized Loading	t-values	CR	AVE
System Quality (SQ)	P01	0,56	11,38	0,5763	0,9158
	P02	0,52	10,44		
	P03	0,76	16,76		
	P04	0,75	16,58		
	P05	0,7	14,86		
	P06	0,63	12,93		
	P07	0,56	11,23		
	P08	0,67	14,17		
	P09	0,6	12,22		
Information Quality (IQ)	P10	0,62	13,07	0,6747	0,9618
	P11	0,7	15,34		
	P12	0,75	16,86		
	P13	0,67	14,28		
	P14	0,66	14,07		
	P15	0,67	14,49		
	P16	0,65	13,92		
	P17	0,71	15,58		
	P18	0,7	15,32		
	P19	0,75	16,8		

Service Quality (SRVQ)	P20	0,63	13,55		
	P21	0,69	15,21		
	P22	0,7	15,46		
	P23	0,77	17,46		
	P24	0,78	17,93		
	P25	0,83	19,74	0,7762	0,9782
	P26	0,8	18,66		
	P27	0,78	17,80		
	P28	0,72	16,12		
	P29	0,79	18,09		
	P30	0,77	17,67		
	P31	0,7	15,50		
	P32	0,77	17,55		
Use (Use)	P33	0,67	-	0,5685	0,7478
	P34	0,78	11,42		
	P35	0,1	1,72		
User Satisfaction (US)	P36	0,71	-		
	P37	0,78	14,40	0,8087	0,9440
	P38	0,79	14,61		
	P39	0,82	15,24		
Net Benefit (NB)	P40	0,81	-		
	P41	0,87	20,39		
	P42	0,87	20,19	0,8470	0,9651
	P43	0,8	17,78		
	P44	0,82	14,39		

The recommended CR value is 0.7 while the recommended AVE value is> 0.5. For the 6 variables above have a value of CR> 0.7 and AVE> 0.5. For the P35 indicator on the system use variable has a loading value <0.5 but the AVE value of the variable has been fulfilled.

D. *Hypothesis Testing*

For the t table value used at the 5% significance level is 1.96. Following are the results of the t test :

TABLE 4. Test Results t

Variabel	Uji Hipotesis	Hasil Analisa	Koefisien	T hitung	R^2
US→USE	Received	Significant	0,88	4,91	
SQ→USE	rejected	not significant	-0,14	-1,51	
IQ→USE	rejected	not significant	-0,16	-1,01	0,70
SRVQ→USE	Received	Significant	0,26	2,96	
SQ→US	Received	Significant	0,23	3,81	
IQ→US	Received	Significant	0,65	8,00	0,81
SRVQ→US	rejected	not significant	0,079	1,35	
USE→NB	Received	Significant	0,15	1,54	
SRVQ→NB	Received	Significant	0,55	3,41	
SQ→NB	Received	Significant	0,039	0,60	0,76
IQ→NB	rejected	not significant	0,14	1,25	
SRVQ→NB	rejected	not significant	0,058	0,94	

For the value of R2 = 0.70, about 70% of the USE variable is influenced by independent variables, while the remaining 30% is influenced by other factors outside the model. For the value of R2 = 0.81, about 81% of the US variable is influenced by independent variables, while the remaining 19% is influenced by other factors outside the model. For the value of R2 = 0.76, about 76% of the NB variable is influenced by independent variables, while the remaining 24% is influenced by other factors outside the model.

1) *The Effect of System Quality on the Use of SIMAN*

Statistical t value <1.96 so that the hypothesis H1 is accepted. So in conclusion, the quality of information has a significant positive effect on net benefits through user

satisfaction. These results indicate that an information system that has the characteristics of being reliable, easy to learn and use, has a fast response time, is well integrated with other systems, and utilizes resources efficiently and effectively, these factors are felt to be quite insufficient for users to use. SAVE. However, this does not reduce the intensity of SIMAN use, due to the mandatory system. Even though the quality of the system is perceived to be poor according to users, the system is still used to fulfill obligations in terms of asset management and design.

TABLE 5. Indirect Effect between Variables

Description	Indirect Influence Between Variables
System quality against net benefits through the use of SIMAN	-0,14*0,15 = -0,021
quality of information on net benefits through the use of SIMAN	-0,16*0,15 = -0,024
quality of service towards net benefits through the use of SIMAN	0,26*0,15 = 0,039
system quality towards net benefits through SIMAN user satisfaction	-0,14*3,41 = -0,4774
quality of information on net benefits through user satisfaction SIMAN	-0,16*3,41 = -0,5456
quality of service towards net benefits through the use of SIMAN	0,26*3,41 = 0,8866

2) *The Effect of System Quality on User Satisfaction*

The value of t statistic> 1.96 so that the hypothesis H2 is accepted. So in conclusion the quality of the system has a positive effect on the use of the SIMAN system. The t statistical value also shows that the better the quality of the system, the more user satisfaction SIMAN will be. So these results illustrate the satisfaction of the system that meets the satisfaction of SIMAN users, although there are some deficiencies in SIMAN, this does not reduce users to use SIMAN. According to SIMAN, it is a mandatory system.

3) *The Effect of System Quality on Net Benefits*

Statistical t value> 1.96 so that the hypothesis H3 is accepted. So in conclusion, system quality has a positive effect on net benefits. This also shows that the better the quality of the system, the more the net benefits that are felt will also increase.

4) *The Effect of Information Quality on the Use of SIMAN*

The value of t statistic <1.96 so that the hypothesis H4 is rejected. So in conclusion, the quality of information does not affect the use of the SIMAN system. The results of this study indicate that in a system that is mandatory, the quality of information or report output from a system is not the most important thing that affects the intensity of system use. This is because generally the responsibility for using SIMAN is an additional job apart from the main duties listed in their job description.

5) *The Effect of Information Quality on User Satisfaction*

Statistical t value> 1.96 so that the hypothesis H5 is accepted. So in conclusion, the quality of information has a positive effect on the use of the SIMAN system. It also shows that the better the quality of information, the more user

satisfaction SIMAN will increase. So these results illustrate that an increase in the quality of information can increase the satisfaction of SIMAN users.

6) The Effect of Information Quality on Net Benefits

The t statistic value <1.96 so that the hypothesis H6 is rejected. So in conclusion, the quality of information has no effect on net benefits. The research results prove that the quality of information has no effect on net benefits. The need to improve the quality of information produced by SIMAN will certainly improve the quality of decision making, indicators of good quality information include completeness, accuracy, accuracy, consistency, decision making. Better information and improved decision making can lead to increased individual performance and improved organizational performance.

7) The Effect of Service Quality on the Use of SIMAN

Statistical t value> 1.96 so that the hypothesis H7 is accepted. So the conclusion is that the quality of service affects the use of the SIMAN system. the better the quality of service, the more use of the SIMAN system will be.

8) The Effect of Service Quality on User Satisfaction

The t statistic value <1.96 so that the hypothesis H8 is rejected. So in conclusion, service quality has no effect on net benefits. The results of the study prove that service quality has no effect on user satisfaction. The need to improve the quality of services provided by the DJKN regarding the SIMAN application, that the quality of service determines user satisfaction, so that in building an information system must consider the service provider aspects after the information system is implemented.

9) The Effect of Service Quality on Net Benefits

The t statistic value <1.96 so that the hypothesis H9 is rejected. So in conclusion, service quality has no effect on net benefits. By improving the quality of service to users it can be interpreted that the better the quality of service, then this is followed by an increase in user satisfaction with SIMAN, by providing user satisfaction with service quality it can provide a net benefit value to be received.

10) The Effect of User Satisfaction on the Use of SIMAN

The statistical t value> 1.96 so that the hypothesis H10 is accepted. So the conclusion is that user satisfaction affects the use of the SIMAN system. The better user satisfaction, the use of the SIMAN system will increase and the higher the desire of users to use the SIMAN information system for the next period.

11) Effect of System Use on Net Benefits

The value of t <1.96 so that the hypothesis H11 is rejected. So in conclusion, the use of the system has no effect on net benefits. The reason for the rejection of this hypothesis indicates that whether or not users often use SIMAN there is no effect on the benefits received by individuals or organizations. The results of the descriptive analysis of the respondents' answers show that the frequency of using SIMAN is low. Show that the use of SIMAN is not their main workload. That the workload on managing assets using SIMAN is not an indicator of individual and organizational performance, only as an additional workload, so that

respondents think that even though the intensity of using SIMAN is low, the benefits to individual performance and organizational performance will not be affected.

12) Effect of System Use Satisfaction on Net Benefits

The statistical t value> 1.96 so that the hypothesis H12 is accepted. So in conclusion, user satisfaction has an effect on net benefits.

13) The Effect of System Quality on Net Benefits through the Use of SIMAN

The t statistic value <1.96 so that the hypothesis H13 is rejected. So in conclusion the quality of the system has no effect on net benefits through the use of SIMAN.

The reason for the rejection of this hypothesis is because SIMAN users think that often or not, the intensity of using information systems will not affect the performance of individuals or organizations. The background to this condition is that the positions held by those involved in using SIMAN are additional positions, not definitive positions. This is because the calculation of reward and punishment for an employee or organizational unit depends on whether the targets listed in the employee performance contract are achieved or not, so that information system users will interact with SIMAN sufficiently, when needed during the process of managing State Assets and RKBMN.

14) The Effect of Information Quality on Net Benefits through the Use of SIMAN

The t statistic value <1.96 so that the hypothesis H14 is rejected. So in conclusion, the quality of information has no effect on net benefits through the use of the SIMAN system. The reason for the rejection of this hypothesis is that the use of SIMAN is mandatory so that the quality of information is not a factor that drives the intensity of using the system. Even though the indicators in the information quality variable are considered good, they cannot increase the intensity of use.

15) The Effect of Service Quality on Net Benefits Through the Use of SIMAN

The value of t statistic> 1.96 but the effect of using the system on net benefits is 1.54, indicating that the t statistical value is <1.96 so that the hypothesis H15 is rejected. So in conclusion, service quality does not affect net benefits through the use of the SIMAN system.

The reason for the rejection of this hypothesis is that the use of SIMAN is mandatory so that the quality of service is not a factor that drives the intensity of using the system. The service quality at SIMAN also seems to be less than expected. The unavailability of an online help center made it difficult for system users to consult about any problems they encountered. Although the Directorate General of State Assets (DJKN) has an official website, namely https://halodjkn.kemenkeu.go.id/, asking questions about SIMAN, the response to SIMAN user problems is still considered too long. Consultations can of course be carried out face to face when BIMTEK or Technical Guidance is held but the BIMTEK schedule given is not much.

16) The Effect of System Quality on Net Benefits through User Satisfaction

The t statistic value <1.96 so that the hypothesis H16 is accepted. So in conclusion, the quality of information has a

significant positive effect on net benefits through user satisfaction.

17) The Effect of Information Quality on Net Benefits through User Satisfaction

The t statistic value <1.96 so that the hypothesis H17 is accepted. So in conclusion, the quality of information has a significant positive effect on net benefits through user satisfaction.

18) The Effect of Service Quality on Net Benefits through User Satisfaction

Statistical t value> 1.96 and the effect of user satisfaction on net benefits shows a statistical t value <1.96 so that the hypothesis H18 is rejected. So in conclusion, service quality has no effect on net benefits through user satisfaction.

The reason for the rejection of this hypothesis is that the use of SIMAN is mandatory so that service quality is not a factor that drives the intensity of the use of the system. Although the indicators in the service quality variable are considered good. The quality of services provided by the DJKN or the Directorate General of State Assets is considered to be quite good, with reference to the quality of service that can affect the use of SIMAN, but does not provide significant user satisfaction. So that the benefits of cleaning received from service quality are felt to be insufficient and still need to be improved.

V. CONCLUSION AND SUGGESTIONS

A. Conclusion

SIMAN can be categorized as a good system, because the mandatory nature of the system is mandatory so that there is no effect of increasing the intensity of use on system quality and information quality.

B. Suggestions

The research conducted on making this application still has many limitations. Developments that can be carried out in further research are:
1. Take a larger number of samples
2. Take sampling from representatives of each ministry

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