Analyzing Surabaya City Government E-Procurement Success Using Information Systems Success Model

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Keywords:

Surabaya City Government E-procurement
Information Systems (IS) Sucess Model
Structural Equation Modeling (SEM)

ABSTRACT

E-procurement as a form of e-governement has been applied in many developed countries. Indonesia as a developing country has implemented an e-procurement system as one that aims to eliminate the corruption that can occur in the procurement process. Surabaya is the second largest city in Indonesia that have implemented e-procurement and became a pilot in another department. Information System (IS) Success Model was used to analyze the success of e-procurement system. The six dimensions of IS Success Model, Information Quality, System Quality, Service Quality, Intention To Use, User Satisfaction, and Net Benefit into variables in analyzing the success of the system. Structural Equation Model (SEM) was used to measure the variables on IS Success Model which can not be measured directly. In the form of a questionnaire survey carried directly to each work unit within Surabaya City Government, entreprises who participated in the auction and also the experts. The findings provide several important implications for eGovernment research and practice. This paper concludes by discussing limitations of the study which should be addressed in reference for the Surabaya City Government e-procurement system improvement in the future.

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1. INTRODUCTION

Surabaya as the burgeoning city in Indonesia has been implemented e-procurement system in 2003 based on Keputusan Presiden number 80 of 2003 about Guidelines for Procurement of Goods/Services Chapter IV And Others Part D. The presidential decree was made to set up an electronic procurement auction called e-procurement to be one of the e-Government projects that can result in savings in Surabaya City Government amounting to 10 percent of the budget is finally applied also in 2003.

The use of IS Success Models in this research than the other models because there are variables that can measure the success of information syste. Comprehensively review DeLone and Mclean IS success measurement using 6 IS success variables are interconnected. Therefore, the IS Success Model DeLone and Mclean have been updated (update) selected to measure the success of e-procurement in the Surabaya City Government.

Structural Equation Modeling (SEM) was used to process the IS model Model successs. Compared with other data analysis, SEM memeiliki advantages in confirming the accuracy of models and examine the effect of a variable to another variable (multivariate). Therefore, SEM is felt appropriate to use in this final because the model IS Success Model has several interrelated dimensions (multidimensional). In addition, the model variables are considered as forming a latent variable can not be measured directly. With manifest variables, or indicators exist on variables IS Success Model, new variables can be analyzed and the results are known.

Analysis of e-procurement success Surabaya City Government conducted in this research, is expected to help the government of Surabaya in getting recommendations from the results of a survey conducted to the each work unit within Surabaya City Government, entreprises who participated in the auction and also the experts.

2. RESEARCH METHOD

a. Information System (IS) Success Model - DeLone & McLean

In 1992, DeLone and McLean viewing IS success measures and berhasilkan concludes a model with six categories of IS success variables are interrelated, namely: System Quality, Information Quality, IS Use, User Satisfaction, Individual Impact, and Impact Organization. However, thanks to the contributions of previous studies and due to the changes of roles and management information system that has been developed, DeLone and McLean update the model and refer to it as the IS Success Model DeLone and McLean updated (updated D & M IS Success model) [see Figure 1] .

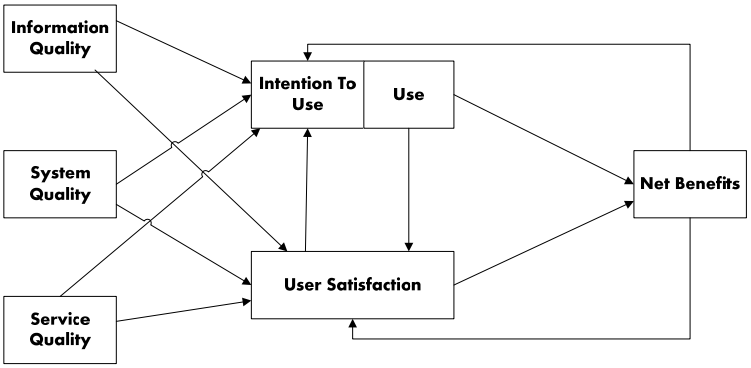

Figure 1. IS Success Model

b. IS Success Model Relationships

By using SEM techniques, IS success variables that exist in the IS Success Model associated with supporting indicators. Intention To Use is used instead of Use, because e-procurement is a system which is required or imposed. In Figure 2, each of which has a latent variable of each indicator are connected and form a model of The success of Surabaya City Government e-procurment .

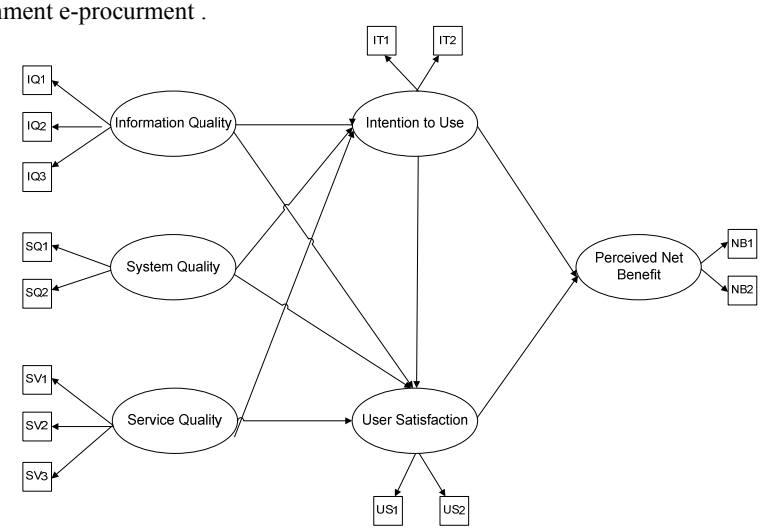

Figure 2. Model of The success of Surabaya City Government E-Procurment

c. Hypothesis

According to DeLone and McLean IS success variables are multidimensional and build mutual dependence, and therefore it is necessary to study the relationship between, or to control the dimensions. Based on the model of IS Success Model and the model established by SEM, built 9 hypotheses to analyze the relationship of each variable can be seen in Figure 3.

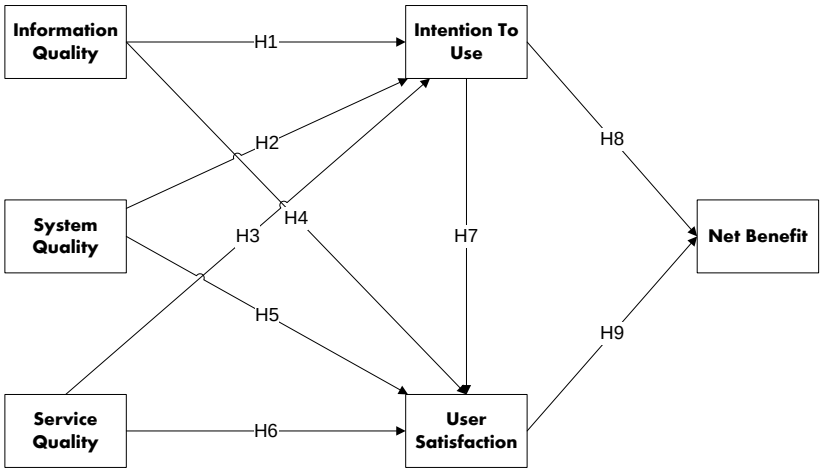

Figure 3. Hypothesis

- H1. Information Quality will affect Intention To Use the E-Procurement in a positive way.
- H2. System Quality will affect Intention To Use the E-Procurement in a positive way.
- H3. Service Quality will affect Intention To Use the E-Procurement in a positive way.
- H4. Information Quality will affect User Satisfaction with E-Procurement in a positive way.
- H5. System Quality will affect User Satisfaction with E-Procurement in a positive way.
- H6. Service Quality will affect User Satisfaction with E-Procurement in a positive way.
- H7. Intention To Use will affect User Satisfaction with E-Procurement in a positive way.
- H8. Intention To Use Net Benefit will affect the E-Procurement in a positive way.
- H9. User Satisfaction Net Benefit will affect the E-Procurement in a positive way.

3. RESULTS AND ANALYSIS

a. Preparation Of The Questionnaire

Preparation of the questionnaire was based on the indicators in the variables refer to the previous chapter and in the journal "assesing eGovernment systems success: A validation of the DeLone and McLean Model of Information System Success" by Yi-Shun Wang and Yi-Wen Liao [3].

The indicators on the variables will be used to analyze the success of e-procurement. Likert scales (1-5), with anchors ranging from “strongly disagree” to “strongly agree”, were used for all questions. This study uses a user perspective of e-procurement is the each work unit within Surabaya City Government, entreprises who participated in the auction and also the experts. Information Quality variable is represented by an indicator IQ1, IQ2, and IQ3. Quality System variables are represented by indicators SQ1 and SQ2. Variable is represented by the Service Quality indicators SV1, SV2, and SV3. Variable Intention to Use represented by indicators IU1 and IU2. User Satisfaction variable is represented by indicators US1 and US2. Net Benefit and variables are represented by indicators NB1 and NB2. For more details can be found in Table 1.

Table 1. Questionnaire

Indicatora	Questions	Indicators	Questions
IQ1	The eGovernment system provides the precise information you need [4]	SV3	The eGovernment system service gives you individual attention.
IQ2	The eGovernment system provides sufficient information	IU1	The frequency of use with the eGovernment system is high. [5]
IQ3	The eGovernment system provides up-to-date information	IU2	You are dependent on the eGovernment system. [6]
SQ1	The eGovernment system is user	US1	You are satisfied with this

Indicatora	Questions	Indicators	Questions
	friendly. [4]		eGovernment system. [7]
SQ2	The eGovernment system is easy to use.	US2	The eGovernment system has met your expectations. [8]
SV1	When you have a problem, the eGovernment system service shows a sincere interest in solving it. [9]	NB1	The eGovernment system makes my job easier. [10]
SV2	You feel safe in your transactions with the eGovernment system service.	NB2	The eGovernment system saves me time.

b. Sample Demographics

The subject of this study is the User of the e-procurement system. The subjects were chosen because users are the ones who interact directly with the system. Users in this study were divided into 3 types of users, namely the working units in the Surabaya City Government, enterprises bidder, and experts in the field of e-procurement.

Size of the sample taken for this study was a minimum of 100 and then use the comparison of 5 observations for each parameter [11]. Based on the results of calculations based on the indicators, it was found that a minimum sample size of 70 samples. To qualify SEM modeling, minimum sample size of 100 samples used in this study. From the data processing, obtained 100 samples of respondents with details, 20% work units within Surabaya City Government, 78% entreprises who participated in the auction, and 2% experts

c. Confirmatory Factor Analysis (CFA)

Confirmatory factor analysis aims to confirm whether the indicators right in preparing a construct. Models with degrees of freedom (df) 0 unidimensional be confirmed in the state, while the model has a positive df first have seen the goodness of fit criteria it be known the unidimensional.

Table 2. Confirmatory Factor Analysis

Indicator	Factor Loading Value	Indicator	Factor Loading Value
IQ1	0,735	SV3	0,777
IQ2	0,507	IU1	0,924
IQ3	0,636	IU2	0,680
SQ1	0,735	US1	0,936
SQ2	0,622	US2	0,508
SV1	0,743	NB1	0,503
SV2	0,572	NB2	0,658

From table 2 above can be seen that the value of each indicator Loading Factor showing values above 0.5. It shows that the data can be through the next process.

This value also gives information on the variables that influence IQ1 Information Quality. SQ1 effect on System Quality variable. SV3 variable effect on Service Quality. IU1 effect on variable Intention To Use. US1 effect on the variable User Satisfaction. And NB2 effect on the variable Net Benefit

d. Testing the Model

Having done a variety of test and stated that the data is feasible for use in subsequent testing, structural modeling will be performed using the Structural Equation Model (SEM). Modeling was conducted to determine the relationship between variables. From the first test, there are a lot of good results because it does not meet the cut-off value. Cut-off value or expected value obtained by the reference journal. Therefore, modification of the model so that the results are improved and meets the criteria of cut-off value.

Table 3. Goodness Of Fit Modification Model

Goodness of Fit Index	**Result**	***Cut Off Value***	***Criteria***
Likelihood Chi Square (χ2)	104,473	Small Expected	Good
RMSEA	0,078	$\leq$0,08	Good
GFI	0,873	$\geq$0,90	Marginal
NFI	0,841	$\geq$0,90	Marginal
CFI	0,930	$\geq$0.90	Good

e. Hypotesis Test

As expected, all hypothesis fullfil the criteria, all criteria were affected positively, except H6. The influence of Service Quality on User Satisfaction were not affected positively.

Table 4. Hypotesis Relationship

Hipotesa	Hubungan	Estimates
H1	IU ← IQ	0,391
H2	IU ← SQ	0,203
H3	IU ← SV	0,296
H4	US ← IQ	0,807
H5	US ← SQ	0,110
H6	US ← SV	-0,061
H7	US ← IU	0,238
H8	NB ← IU	0,804
H9	NB ← US	0,223

From Table 4 it was found that all the variables are related both positively and negatively. The whole hypothesis is tested to meet the hypotheses that have been made previously except that H6 -0.061 figures show that is considered not to meet the hypothesis.

4. CONCLUSION

From the Reasearch, the conclusions are:

1. All Is Success Model that used in this research are interconnected and influence each other both positively and negatively. Influence between these variables is affected by the user viewpoint to the e-procurement system.
2. The research is enough to qualify, so the implementation of Surabaya City Government e-procurement has declared a success by user point of view.
3. All hypotheses fullfil the criteria accept H6 which Service Quality not affected User Satisfaction positively.
4. With the fulfillment of the success of e-procurement, means fulfilled also benefits perceived by the user (Net Benefit). It can be concluded that the user experience benefits from the use of e-procurement system with the benefits of the most deemed by the user is e-procurrement that can save time, represented by NB2 statement.

ACKNOWLEDGEMENTS

We owe a debt of gratitude to Allah SWT for the grace and vision. We particularly in debited to Our Parents for inspiring Us to this research. We also owe to all lecturers in Information System of ITS.

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