

# ANALYSIS OF THE EFFECT OF INFORMATION SYSTEM QUALITY TO INTENTION TO REUSE OF EMPLOYEE MANAGEMENT INFORMATION SYSTEM (SIMPEG) BASED ON INFORMATION SYSTEMS SUCCESS MODEL

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## ABSTRACT

This study examines the effect of Information Quality, Systems Quality and Service Quality on the user intention to reuse Employee Management Information System (SIMPEG) in University in the city of Surabaya, based on the theoretical foundation of DeLone and McLane Information Systems Success (ISS) Model. The distribution of questionnaire was conducted to 120 employees of different universities by means of stratified random sampling. The results showed that: (1) there is a significant positive effect of the System Quality on the Quality of Information, (2) there is a significant positive effect of the Information Quality on the Intention to Reuse, information related to the fulfillment of the user's needs; (3) there is a significant positive effect of the Quality of the Intention on system re-use, the system related to the fulfillment of the needs of users; (4) there is no effect of the Quality of Service to the Intention to Reuse. In the end, the results of this study provide an analysis and advice to The University officials that can be used as a consideration for Information Technology/Information System investment and development in accordance with the Success of Information System and Intention to Reuse model.

**Keywords:** information system success model, intentions to reuse, information technology/information system.

## INTRODUCTION

In recent years, due to the rapid advancement of Information Systems, business information systems have been implemented for management operations with the aim of creating a profit for the organization and, without exception, this also applies to the teaching and learning activities. To support the learning process and well organize employees an information system which is related to employees in University is made, commonly referred to as Employee Management Information System (SIMPEG). In order for information system to be utilized effectively and contribute to the performance of organization, the members of the organization should be able to use these technologies properly Lucas and Spitler (1999).

The learning process accomplishment in University involving all relevant aspects. The process, have a correlation with the student, employee, administrative clerks, financial officers, student support officer, up to campus official, and many more. University are in charge for an excellent service and special treatment to be stand out among others. Methods of integrating facility management also need to be considered in order to get a measure of performance required by the organization's core Hinks (2002)

By considering the good impact on teaching and learning activities, the University is expected to treat their employees well, such as: provide a good facilities, fulfill their employee's rights, provide a comfortable atmosphere, and the staff will give the University all the best they have in return. In other words, a good treatment by the University will have cause an implications for students. Providing a good facilities for employees need a special attention from management, this is because the university has a high complexity of needs compared to other educational institutions. The easier way to get information related to this reciprocal relationship is

necessary to be respond seriously. Facilities create an environments for occupants to work effectively within organisations and the performance of these environments influence the activities that are carried out (Amaratunga, et. al, 2002).

In regard of that special needs, it is necessary for University to find a solution. One solution is the application of Information Systems/Information Technology (IT/IS) to provide a good information for University and to reduce the gap between employees. To simplify, accelerate, and adding quality of university services for students. Thus, the achievement that makes competition among University has developed in the era of Information System/Information Technology competition at internal and external services, Atkin define Facilities Management as an integrated approach to the operation, maintenance, repair and adapting buildings and infrastructure of an organization in order to create an environment that strongly supports the main objective of the organization Atkin and Brooks (2000)

At first the discussion related to the ability of the Information System/Information Technology with a positive impact on University can be tested using the Information System Success (ISS) DeLone and McLean Model (1992), relevant study is comprised of six dimensions: system quality, information quality, use, user satisfaction, individual impact and organizational impact. However, other researchers Pitt, Watson and Kavan (1995) adds that the quality of service becomes an additional test dimension in achieving organizational impact. So DeLone and McLean Model (2003) adds quality of service to be independent factors other than the quality of information and system quality that can have an impact on the organization, reinforced by Tseng and Li (2008) ISS i.e. including system quality, information quality, service quality, the use of system, user satisfaction, and benefits to the organization. Furthermore, the three factors are

develop to integrity, firmness, accuracy, precision, relativeness, facilitation, and the timeliness of any report produced, and assessment quality system refers to the accessibility, functionality, operation, responsiveness, and system reliability, while the quality of service refers to how often users use the system and the willingness to use.

The attempt to measure the relationship between the desire to use, usage, user satisfaction and benefit to the organization and this contest is an important indicator for the success of information systems Liu, et. al (2010). The discussion above of the ISS shows that the quality of information, systems quality, and quality of service can be used to assess information to allow the quality of information systems to meet user expectations, improve user satisfaction, and increase profits for the organization systems Wixom (2001); DeLone & McLean (2004)

The research related to educational activities that are so complex to manage the employees and increase of University standard with the Information Technology /Information System, can be a limited applied research. The development of the IT/IS has a significant way to the University to explore and develop significant ways for educational programs, therefore, the intention of returning the system uses is important for the success of the role of a system Li (2011). Thus, this study is using the ISS as a theoretical foundation to examine the influence of information quality, system quality, and service quality of Employee Information Systems to the intention of re-use SIMPEG on University in Indonesia especially in the city of Surabaya.

## METHODOLOGY

### Research subjects

The core of this research is the user of the Employee Management Information System in the State of Indonesia especially in the city of Surabaya that was surveyed using questionnaires given to respondents who are employee at different universities in Surabaya. This activity of sampling was held from 2<sup>nd</sup> to 14<sup>th</sup> February 2015. The questionnaires distributed by the researchers directly (offline). In total, 120 copies of questionnaires were distributed and collected, with a response rate of 100%. After removing invalid questionnaire, there are 100 copies, with an effective response rate of 97.1%.

### Research Tools

The research tool consists of two parts. The first is the study of literature, gathering all the information that is contained in each relevant SIMPEG University. Secondly, ISS using Delone Mclane Scale Model (2003) developed by Li (2011). Thus it is supported by a Likert scale which is divided into five points including a "very poor", "less", "pretty", "disagree", "strongly agree" that corresponds to 1 to 5 points respectively.

### Research Stucture

In accordance with the purpose of the research and literature review, this study developed a structure (shown in Fig.1) by ISS to examine the effect of information systems, systems quality, and quality of the employee's intention to reuse SIMPEG on University.

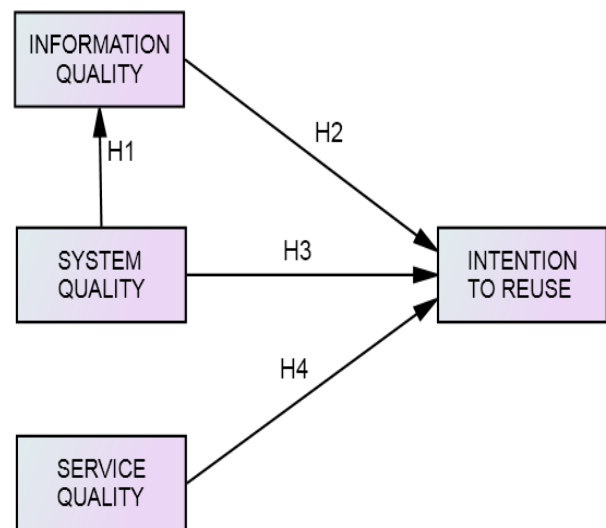


Figure-1. Research Hypothesis

### Research hypotesis

This research uses the ISS proposed by DeLone and McLean (1992) as the basis for the theory. There are three factors forming the intention to reuse a system of information quality, system quality, and quality of service. All these three are the most important base factors for measuring the quality of information systems, on the other research Saeed et. al. (2003) found that the quality of information is an important influential factor in determining the willingness to buy back and customer satisfaction.

Statement that supports and adds that the quality of information is an influential factor important in determining the willingness to reuse and satisfaction emerges from Swan and Trawick (1981) which states that during the process of forming the intention to use the system, the level of service quality determine the intentions of the user's back. Thus, this study proposes two formulation of the problem as follows:

System quality has a significant influence on the information quality to support the establishment of information quality factors which significantly influence the intention to reuse SIMPEG.

### Data analysis

This study uses the software, SPSS 21 and AMOS 16.0 for Windows 7 for the needs of data analysis. Statistical methods adopted by this study are described as follows:

Descriptive statistics were used as the data analysis support to illustrate SIMPEG user data has been collected, make the results of the demographic distribution at the University SIMPEG users who respond to this study.

Path analysis is used to provide the results of the analysis relating to the significance of the relationship and the influence of information quality, significance and influence of the quality system, and the significance and impact of service quality to the intention of reusing SIMPEG University

## RESULTS AND DISCUSSION

### Sample characteristics

**Table-1.** Summary of Background Variables of Research

Background variable	Name of group	Frequency (time)	%	Accumulated %
Sex	Male	59	59	59
	Female	41	41	100
Age	20–30	49	49	49
	31–40	20	20	69
	41–50	14	14	83
	More than fifty	17	17	100
Education Level	Senior High School	4	4	4
	Undergraduate	39	39	43
	Postgraduate	50	50	93
	Doctoral	7	7	100
Position	Staff	42	42	42
	Employees	48	48	90
	Lecturer	10	10	100
	Campus Officials			
Ability to use a Computer	Below Average	11	11	11
	Average	61	61	72
	Above Average	28	28	100

This study used descriptive statistics to analyze the distribution of basic information (see Table 1). The effective sample size is 100 respondents, 59 were male (59%) and 41 were female (49%), showed a majority of employees University in Surabaya are men, but at least the difference between genders is can be interpreted comparison male employees and women are still equal. In terms of age, the largest age group is between the age of 20-30 with a percentage (49%), followed by the age of 31-40 with percentage (20%), then at the age of more than 50 with percentage (17%), and the smallest group at the age of 41-50 with percentage (14%).

Thus we can say that the use SIMPEG competence can be applied as expected given the level of the users are in the productive age. In terms of educational background may also affect the likely position at the University, there are (4%) SIMPEG users who have a high school degree, 39% of users have a college degree, 50% have a master's degree and there is a 7% users have a doctorate. Subjects also received questions about the ability of a computer, and as a result, there are 61% of the employees who have the ability average, and 28% of employees have an above-average ability.

### Testing for offending estimates

**Table-2.** Test of offending estimates

	Question	Standardized Regression Coefficient	Error Variance
X1	SIMPEG provide actual information to the users	79	30
X2	SIMPEG has a data records to give user an easy way to look for some information	76	31
X3	SIMPEG provide a correct information which fits the needs of users and institution	79	27
X4	SIMPEG provide a concise information which help your work	73	37
X5	SIMPEG provide a Help Menu with which users can easily operate it without the assistance from colleagues	64	48
X6	SIMPEG has a direct benefit, hence users is not need to contact the person in charge to SIMPEG	70	43
X7	SIMPEG has a user guide with which help the users to operate it	69	43
X8	SIMPEG is easy to use and helpful both for users and institution	75	48
X9	SIMPEG provide a valid and complete data which suitable with user's needs according to his job/responsibility	60	56
X10	SIMPEG can be accessed by multiple users, which can gives a sense of security for users	68	48
X11	SIMPEG can be used and understood easily so that it can make the user's jobs done easier	78	40
X12	SIMPEG can be customized by the user to fits their needs and based on the level of their work	76	40
X13	SIMPEG can give a fast response of user input, so that users doesn't need help	69	41
X14	I intend to spend more time to use SIMPEG in order to share knowledge with colleagues	62	31
X15	I intend to use SIMPEG consistently in order to support my work	57	27
X16	I intend to learn the SIMPEG thoroughly in order to help the success of the institution work program	53	30
X17	I intend to use SIMPEG regularly to help institution to develop its assets	53	25

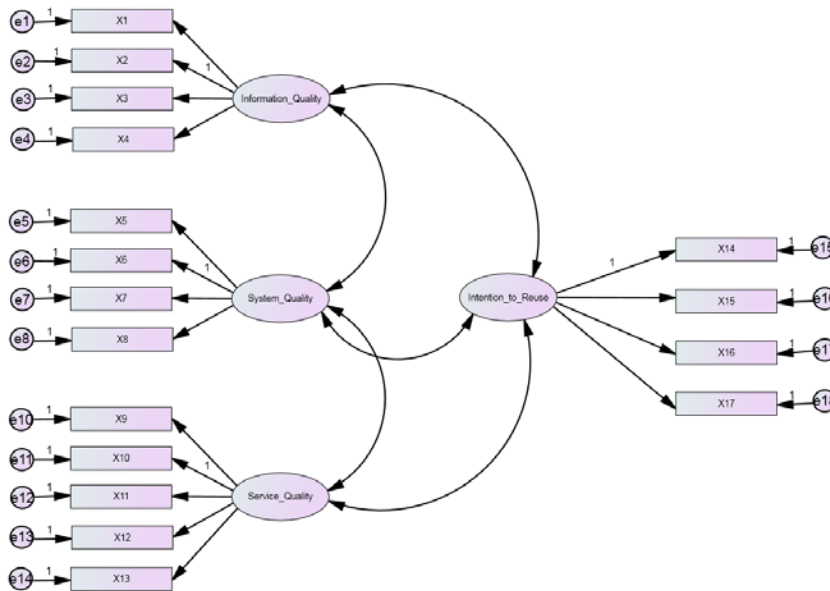


Figure-2. Structure of the Confirmatory Factor Analysis of the Information System Success Model

This study uses (1) The negative error variance and (2) the proximity of standardized regression coefficients are useful as a basis for testing estimates offensive. As shown in Table 2, there is no negative error variance, and standard coefficient falls between 0.68 and 0.86, both lower than 0.95, it indicates no offensive estimates in the model, and the overall model fit.

**Test for convergent validity**

This study conduct confirmatory factor analysis (CFA) for the IST Scale and found four dimensional model (system quality, information quality, service quality and willingness to use), the load is between 0.65 ~ 0.86, component reliability between 0.89 ~ 0.90 , and the average variance extracted (AVE) is between 0.58 ~ 0.66, which are all meet the standards, as shown in Table 3. as a result, each dimension of the ISS reaches convergent validity.

Table-3: Reliability and AVE Construc tted by Observable Variable and Latent Variable

Latent Variable	Observable Variable	Factor Loading	Component Reliability	AVE
<b>IQ</b>	X1	79	1,33	,51
	X2	76		
	X3	79		
	X4	73		
<b>SQ</b>	X5	64	1,33	,51
	X6	70		
	X7	69		
	X8	75		
<b>SEQ</b>	X9	60	1,25	,51
	X10	68		
	X11	78		
	X12	76		
	X13	69		
<b>ITR</b>	X14	62	1,33	,51
	X15	57		
	X16	53		
	X17	53		

**Testing discriminant validity**

This study adopts Bootstrap Distribution Effect proposed by Torkzadeh, Koufteros and Pflughoeft (2003) to

test the discriminant validity by building confidence interval for the correlation coefficient of each dimension. Discriminant validity test for the ISS is shown in Table 4, show that the correlation coefficient has a standard 95% confidence intervals were not included. Thus, ISS has discriminant validity between dimensions.

Table-4. 95% of Confidence Intervals of Bootstrap Correlation Coefficient

Parameter	Estimate	Lower	Upper	P
Information Quality <--> System Quality	,957	,942	,969	,000
Information Quality <--> Service Quality	,609	,456	,724	,000
System Quality <--> Service Quality	,545	,370	,672	,000
Service Quality <--> Intention to Use	,627	,463	,749	,000
System Quality <--> Intention to Use	,945	,927	,961	,000
Information Quality <--> Intention to Use	,975	,966	,986	,000

**Structural Model Analysis**

This study uses six indices for evaluating the overall fit model ie, the ratio of  $\chi^2$ Chi-Square, root mean square error of approach (RMSEA), goodness of fit index (GFI), adjusted 3 goodness of fit index (AGFI), the comparative fit index (CFI ), and the comparative fit index parsimony-customized (PCFI). Results from this analysis are reproduced in Table 5, and shows the overall fit standard and acceptable to the model used in this study.

Table-5. Fit Analysis of Research Mode

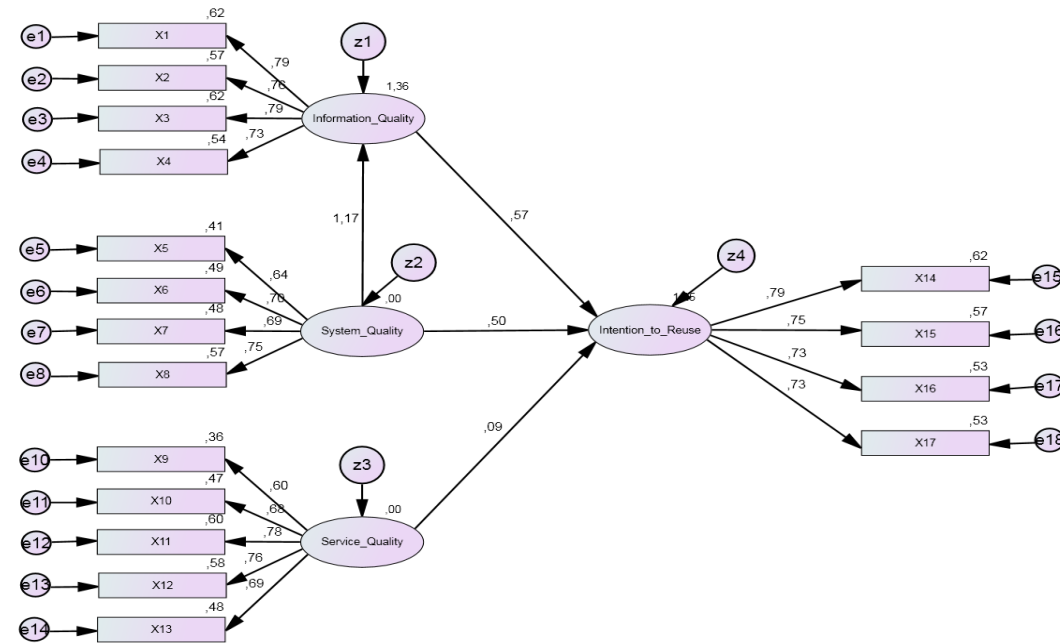
Fit Indices	Range of Allowance	Research Structural Model	Determination of Model fit
$\chi^2$ Chi-Square	Minimized Valued	301,980	Good
RMSEA	$\leq 0,08$	0,13	Less
GFI	$\geq 0,8$	,80	Good
AGFI	$\geq 0,8$	,73	Less
CFI	$\geq 0,9$	,86	Less
PCFI	$\geq 0,5$	,73	Good

**Test Results of Research Hypothesis**

As shown in Table 6, the system quality has a proven positive impact on information quality, then the first hypothesis proved the existence of a positive relationship between system quality and information quality. The 2nd hypothesis can be seen in Table 6, that information quality can directly influence positively the intention of re-use. Something similar happened to hypothesis 3, wherein the system quality has positive influence on the intention to reuse, but the hypothesis 4, where service quality can be a positive influence on the intention of re-use is not proven.

**Table-6.** Empirical Results of Research Hypothesis

H	Path Relationship	Path Value	Support of Hypothesis
H1	System Quality --> Information Quality	1,17*	Yes
H2	Information System --> Intention to Reuse	0,64*	Yes
H3	System Quality --> Intention to Reuse	0,56*	Yes
H4	Service Quality --> Intention to Reuse	0,09	No



**Figure-3.** Overall Model Relationship of Parameter Evaluation of System Success Model

**CONCLUSIONS**

This study uses IIS as a theoretical basis, to examine the three-dimensional model (system quality, information quality, and quality of service) as an independent variable to explain the intention to reuse SIMPEG, research results are described as follows:

The positive effects of significant quality on the quality of the information system appears to have contributed in encouraging the formation of the quality of information of significant value to the intention of re-use SIMPEG on University. It can be assumed that there is a correlation between the capabilities and robustness of the system on the quality of information that will be presented to the user. Therefore, to create a good quality of information it can be started by developing a system which is strong, reliable, trustworthy, and capable of providing more flexibility in accessing information to both general and special users of the system at university.

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