Remuneration Information System Success In State University As Legal Entity (PTN-BH) Using Delone and Mclean Model

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ABSTRACT
This study aimed to determine the success of remuneration information systems in PTN-BH using the DeLone and McLean models. The sampling method used was simple random sampling with 51 of 101 work units at the Indonesia University of Education. The data used were primary data with questionnaires, documentation, and interview techniques. Hypothesis testing was done by using version 3.0 Partial Least Square (PLS) software. The results of hypothesis testing show that the quality of the system influences user satisfaction, the quality of information affects user satisfaction and user satisfaction affects the personal impact.

Keywords: DeLone and McLean, IBK, Information system, Partial Least Square, Remuneration

INTRODUCTION

Government Regulation of the Republic of Indonesia Number 60 of 1999 concerning Higher Education, which regulated the autonomy policy towards higher education, indicated that the government provided support and autonomous rights to achieve the vision and mission of the university as a higher education administrator. Government support for universities was inseparable from the necessity of universities to implement Good University Governance. Good University Governance was governance that reflects the success of universities, and it was well supported by the excellent quality information system (Tajuddin, 2017). A sound information system could be measured through the information systems success method that reflects six elements of measurement of information system success, namely system quality, information quality, information usage, user satisfaction, individual impact, and organizational impact (DeLone & McLean, 1992).

Information system of DeLone & McLean (1992) had been widely implemented in various

studies including the research of Allah et al. (2013) which was used to obtain, interpret, synthesize, evaluate and understand accounting information that they had, in managing and/or controlling economic factors; Hudin & Riana (2016); Ramírez-Correa et al., (2017); Saputro (2015) which was used to provide an evaluation of the implementation of the use of accounting information systems. But in Livari (2005), Istianingsih & Wijayanto (2008), showed that in six variables reflected by DeLone & McLean (1992), the variable use (use) or intensity of use (intention to use) less significant when used in information systems mandatory.

Information systems at PTN-BH were considered capable of managing academic and non-academic, which fields include management of the organization, finance, student affairs, staffing, and infrastructure (Astridina et al., 2017). Human Resource was an essential factor in running an organization. Based on the Law of the Republic of Indonesia Number 12 of 2012 article 69, paragraph 1 concerning Higher Education,

Human Resources in higher education consists of lecturers and staff. According to Hardiyanto (2016), human resources owned by universities had a considerable amount of achievement in the performance of universities. In order to realize excellent and effective Good University Governance by involving employees, the high productivity of human resources must be done. This could be done by providing remuneration. Remuneration was something that was received by employees as exchangers from the contribution of services they provide to companies/institutions (Davis & Newstorm, 1996).

The eleven PTN-BH jointly determined that the remuneration for employees used the Service Fee System with compensation payments based on the three-P concept that covered pay for a person, pay for the position, and pay for performance. Based on research conducted by Astridina et al., (2017), it was found that among the 3 PTN-BH studied, the implementation of remuneration in each PTN-BH tended to be different even though it had used the same concept, namely the three-P concept. On this basis, this research was conducted. This study uses the information system success model developed by DeLone and McLean (1992). This was because the model developed was valid for all types of information systems, and the measurement of each variable was not calculated independently, but overall, one influences the other. With this model, it was expected to find results valid, and the model used was a model that could be used by each PTN-BH.

LITERATURE REVIEW
Information System
The definition of an information system was basically the result of two meanings, namely system and information combined. Here were the system definitions according to these experts:

Marshall & Steinbart (2014), "System was a series of two or more components that were interrelated and interacted to achieve goals. Most systems consist of smaller subsystems that support larger systems ".

While the understanding of information, according to Marshall & Steinbart (2014), was data that had been managed and processed to give meaning and improved the decision-making process. As for its role, users made better decisions as to the quantity and quality of improving the information.

On the opinions expressed about the system and the information above, it had been formulated regarding the meaning of information systems as follows According Jogiyanto (2005), information systems could be defined as a system within an organization which was a combination of people, facilities, technology, media, procedures and controls aimed at obtaining important communication channels, processing certain routine types, provide information to management and others about important internal and external events and provide a basis for information for smart decision making.

Delone and Mclean Models
Many studies had been conducted to identify the factors that had led to the success of information technology systems. One of the most well-known studies in this area was research conducted by DeLone & McLean (1992). The success model of the information technology system developed by DeLone & McLean (1992) quickly received a response. One reason was that their model was a simple model but was considered quite valid.
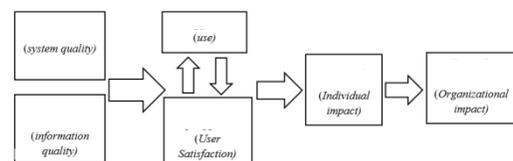
Source: Jogiyanto (2005)
Figure 1.
Delone & McLean information systems success model (1992)

Six elements or factors or components of this model were:

1. System quality;
   System quality was how well the features and characteristics possessed by information systems in their ease of use.
2. Quality of information;
   Information quality was the desired characteristic of an output system (DeLone & McLean, 2016).
3. Use of information;
   The use of information was the level and manner in which users utilize the capabilities of an information system DeLone & McLean (2016).
4. Use satisfaction;
   User satisfaction was the user's response to the use of information system output (Jogiyanto, 2007).
5. Individual impact;
   The individual impact was the effect of information on user behavior (Jogiyanto, 2007).
6. Impact of organization
   The impact of the organization was the impact of organizational performance (Jogiyanto, 2007).

Remuneration

Remuneration was an absorption word from the English word "remuneration," which, according to Oxford American Dictionaries, means *pay* (*someone*) *for services rendered or work done*. In *Indonesia Dictionary,* remuneration was defined as giving gifts (awards for services, etc.); rewards (Iriantika, 2013).

RESEARCH METHODS

The Influence of System Quality to User Satisfaction

The quality of the system could be said to be successful if it could provide a sense of comfort (Nurjaya, 2017). The study of Abrego Almazán, et al., (2017) regarding the influence of information systems on organizations shows that system quality had a positive effect on user satisfaction, it comes from the user's perception that the system was easy to use, user-friendly, fast, and suitable with other systems used in the institution. On the basis of this description, this study proposes a hypothesis:

H₁: System quality affects user satisfaction.

The Influence of Quality Information to User Satisfaction

The quality of this information included the completeness, accuracy, accuracy, reliability, current, form of output (Livari, 2005). One indicator of the success of information quality, namely accuracy. According to DeLone & McLean (1992), the better the quality of information from a system, the higher the level of user satisfaction for the system. In the study, Abrego Almazán, et al., (2017) showed that the quality of information was the most important in determining user satisfaction. Because users consider information systems that we're able to provide accuracy and availability of information as an element of successful system implementation. On the basis of this description, this study proposes a hypothesis:

H₂: The quality of information affect user satisfaction.

The Influence of User Satisfaction to Individual Impact

DeLone & McLean (1992) stated that user satisfaction was closely related to the behavior of users of the system. If someone was satisfied with the behavior of the user of the system, then they would tend to feel comfortable while working by using the system so that they were helped in their work. The higher the level of user satisfaction, the higher their performance would be (Nurjaya, 2017). On the basis of this description, this study proposed a hypothesis:

H₃: User satisfaction affects individual impact.

Research Approach

The study employed quantitative research as the approach method, and the data was obtained from the distribution of questionnaires to respondents in the work unit of the Indonesian University of Education.

Population and Sample

The population consists of all the work units of the Indonesia University of Education. The sampling method used was random sampling.

In this sampling, there were 51 respondents with a population of 101 respondents. Analysis in this study using Partial Least Square (PLS). The research model uses DeLone & McLean (1992),

which had been adapted to research on the success of remuneration information systems.

Research Variables
The variables in this study consisted of:

Exogenous variables: system quality (X1) and information quality (X2) as measured by indicators.

ANALYSIS AND DISCUSSION
First Model Evaluation
The first step in formulating a model of success was to determine the path diagram of each indicator against variables, as well as path diagrams between variables. In figure 2. It could be seen that the arrowed to connect between the constructs or variables showed the relationship according to the hypothesis that would be tested in this study.
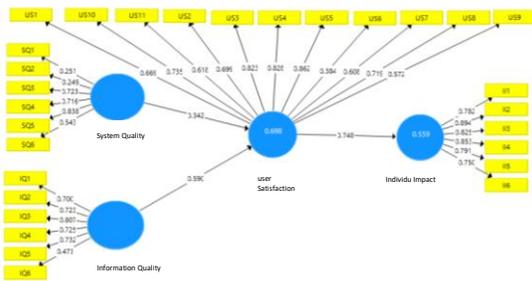
Source: data processed by PLS 3.0
Figure 2.
First Model

The measurement evaluation model was testing the relationship between indicators and their latent variables, which would be seen from the conditions of convergent validity and discriminant validity. The validity of an indicator could be seen from the magnitude of the loading factor of the indicator against its latent variables. The loading factor was a correlation between indicators with the construct. For the initial research on the development of the measurement scale, the value of loading factor 0.7 was sufficient (Abdillah & Jogiyanto, 2015). If the value of the loading factor was above 0.7, then the indicator could be considered valid, and if the value of the loading factor was less than the value of 0.7, then the indicator would be removed from the model and would be tested again for indicators that had been declared valid.

From the testing of the initial model (Table 1), it could be seen that the value of loading factors indicators SQ1, SQ2, SQ6 contained in system quality variables, IQ6 indicators contained in information quality variables, indicators US1, US2, US6, US7, US9, US11 in user satisfaction variables were worth below 0.7 so that the indicator would be removed from the model and would be retested.

Table 1. Loading Factor First Model

Variable	Indicator	*Loading factor*	Result
System Quality	SQ1	0.251	Invalid
	SQ2	0.249	Invalid
	SQ3	0.723	Valid
	SQ4	0.716	Valid
	SQ5	0.838	Valid
	SQ6	0.543	Invalid
Information Quality	IQ1	0.700	Valid
	IQ2	0.723	Valid
	IQ3	0.807	Valid
	IQ4	0.725	Valid
	IQ5	0.732	Valid
	IQ6	0.473	Invalid
User Satisfaction	US1	0.669	Invalid
	US2	0.699	Invalid
	US3	0.823	Valid
	US4	0.828	Valid
	US5	0.862	Valid
	US6	0.384	Invalid
	US7	0.608	Invalid
	US8	0.719	Valid
	US9	0.572	Invalid
	US10	0.735	Valid
	US11	0.618	Invalid
Individual Impact	II1	0.782	Valid
	II2	0.894	Valid
	II3	0.825	Valid
	II4	0.853	Valid
	II5	0.791	Valid
	II6	0.750	Valid

Source: data processed by PLS 3.0

Testing the Outer Model

The outer model tested consists of validity tests, such as convergent validity and discriminant, and reliability tests such as Composite Reliability and Cronbach's Alpha The steps to test the outer model were:

Convergence Validity

Table 2. *Convergent validity*

variable	AVE
System Quality (SQ)	0.668
Information Quality (IQ)	0.673
User Satisfaction (US)	0.560
Individual Impact (II)	0.611

Source: data processed by PLS 3.0

Discriminate Validity

Table 3. *Discriminate validity*

Var	SQ	IQ	US	II
SQ3	0.735	0.428	0.493	0.504
SQ4	0.736	0.269	0.356	0.212
SQ5	0.867	0.542	0.624	0.359
IQ1	0.476	0.700	0.540	0.394
IQ2	0.376	0.767	0.556	0.306
IQ3	0.497	0.822	0.638	0.518
IQ4	0.367	0.727	0.530	0.564
IQ5	0.350	0.718	0.596	0.310
US3	0.523	0.638	0.854	0.554
US4	0.629	0.744	0.861	0.615
US5	0.598	0.767	0.914	0.612
US8	0.435	0.427	0.706	0.513
US10	0.460	0.509	0.749	0.603
II1	0.244	0.401	0.571	0.784
II2	0.469	0.369	0.612	0.893
II3	0.394	0.384	0.574	0.824
II4	0.282	0.537	0.587	0.855
II5	0.388	0.537	0.557	0.792
II6	0.520	0.521	0.558	0.748

Source: data processed by PLS 3.0

Composite Reliability **dan** *Cronbach's Alpha*

Table 4. *Composite Reliability and Cronbach's Alpha* Model

Variable	Composite Reliability	cronbach's alpha
System Quality	0.824	0.686
Information Quality	0.864	0.802
User Satisfaction	0.911	0.876
Individual Impact	0.923	0.900

Source: data processed by PLS 3.0

Based on the test results of the outer model above, the results of the study on the model were

- In Table 2 the value of Average Variance Extracted (AVE)> 0.5, the construct had good convergent validity

- In Table 3, the value of cross-loading also showed good discriminate validity because the value of the indicator correlation to the construct was higher than the value of indicator correlation with other constructs.

- In Table 4, the values of Composite Reliability and Cronbach's Alpha all variables could be considered reliable. The value Cronbach's alpha of the information usage variable (U) below 0.6 does not affect the hypothesis test to be carried out.

Testing the Inner Model

Feasibility Test of the Determination Coefficient Model (R^2)

Table 5. Inner Model

Variable	R^2
User Satisfaction	0.499
Individual Impact	0.663

Source: data processed by PLS 3.0

In the variable user, satisfaction showed a value of 0.499 where the value was close to the value of 0.5, but below 0.75, it meant the ability of exogenous variables, namely the quality of the system and the quality of the information in explaining the endogenous variables of moderate user satisfaction.

Predictive Relevance (Q^2)

$Q^2 = 1 - (1 - 0,499) (1 - 0,633)$

$Q^2 = 0.816133$

The Q^2 value ranges from 0 to 1, getting closer to 1, the model was considered to be getting better. It was known that the value of Q^2 was close to 1, then the model was of good value

Hypothesis Testing

Table 6. Path Coefficient

	Original sample (O)	T Statistics	P value
SQ -> US	0.706	9.328	0.000*
IQ -> US	0.586	6.066	0.000*
US -> II	0.327	3.394	0.001*

Source: data processed by PLS 3.0

a) Hypothesis testing H_1
   The relationship between system quality (SQ) and user satisfaction (US) was significant with T-Statistics amounting to 9,328 (> 1.96), the original sample estimate value was positive at 0.706, then the relationship between system quality (QS) and user satisfaction (US) was positive, and the P-Value value was 0.000 (<0.05), then hypothesis 1 was accepted.
b) Testing the H_2 hypothesis
   The relationship between information quality (QI) and user satisfaction (US) was significant with T-Statistics amounting to 6,066 (> 1.96), the original sample estimate value was positive which was 0.586, then the direction of the relationship between information quality (QI) and user (US) was positive, and the P-Value value was 0.000 (<0.05), then hypothesis 2 was accepted.
c) Testing the hypothesis H3
   The relationship between user satisfaction (US) and individual (II) impact was significant with T-Statistics amounting to 3,394 (> 1.96), the original sample estimate value was positive at 0.327, then the direction of the relationship between user satisfaction (US) and individual impact (II) was positive, and the P-Value value was 0.001 (<0.05) then hypothesis 3 was accepted.

The Value of Information Systems Success
The response data of the 51 respondents shown in Table 7 would be used to determine the percentage of information system success and produce the average value of the item. The total value of the item was 74.10 and would be used to measure the average weight of items as follows:

$$\text{Average weight of item} = \frac{74.10}{19} = 3.90$$

The next step was to find the percentage of success. The average weight of a measurement item was divided by the maximum value of the scale, which was five then multiplied by 100%. This division of the level of success adopts Fathoni (2017) research, which was as follows:

$$\text{percentage of IS success} = \frac{3.90}{5} X\ 100\% = 78\%$$

Based on the results of an analysis of the remuneration information system, the success rate was 78%. According to Fathoni (2017), the level of 61-80% means success.

Table 7. Percentage of Success

No	Point	1	2	3	4	1	Average
1	SQ3	1	1	26	22	1	3.41
2	SQ4	0	0	6	33	12	4.12
3	SQ5	0	1	10	32	8	3.92
4	IQ2	0	1	11	34	5	3.84
5	IQ3	0	0	16	29	6	3.80
6	IQ4	0	1	11	35	4	3.82
7	IQ5	0	2	13	33	3	3.73
8	US2	0	0	10	36	5	3.90
9	US3	0	0	13	32	6	3.86
10	US4	0	0	16	32	3	3.75
11	US5	0	1	17	31	2	3.67
12	US8	0	0	7	38	6	3.98
13	US10	0	1	6	40	4	3.92
14	II1	0	0	6	36	9	4.06
15	II2	0	0	8	34	9	4.02
16	II3	0	0	9	38	4	3.90
17	II4	0	0	3	39	9	4.12
18	II5	0	0	7	36	8	4.02
19	II6	0	0	1	36	14	4.25
	AVERAGE						74.10
	AVERAGE WEIGHT OF ITEM						3.90
	PERCENTAGE OF SUCCESS						78

Source: data processed by PLS 3.0

CONCLUSIONS
Based on the results of research and discussions that had been conducted regarding the success of remuneration information systems in PTN-BH using the DeLone and McLean model (studies at PTN-BH Indonesia University of Education), a number of things could be concluded as follows.
1. System quality affected user satisfaction. This indicates that the better the quality of the system

in the Indonesia University of Education remuneration information system (IBK), the better the satisfaction of users.

2. The quality of information affected user satisfaction. This indicates that the better the quality of the information in the Indonesia University of Education remuneration (IBK) information system, the better the satisfaction of users.

3. User satisfaction affected individual impacts. This indicates that the better user satisfaction in the Indonesia University of Education remuneration (IBK) information system, the better the individual impact.

In accordance with the model, it had been proven that there was an effect that starts from the quality of the system, the quality of information on user satisfaction, and user satisfaction with individual impacts. And the value of success obtained by the Indonesia University of Education remuneration information system (IBK) was 78% (success).

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