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Assessment of Readiness and Usability of Information Systems Use

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Abstract- The assessment of the use of information systems has been carried out by many researchers. This research was conducted in Private Universities in Indonesia, which currently involve many information systems in many ways, especially those related to the management of Higher Education, by measuring the readiness and usability of the use of information systems with models that I build from the integration of two models. The results of the measurement of this study were obtained from the distribution of questionnaires, there were 47% of respondents who filled 61-80% of the level of IS usage and 68% of respondents stated their readiness in the level of readiness to use IS. The stage consists of evaluating reflective measurement models and structural model assessments. Evaluating reflective measurement in evaluating internal consistency reliability using Composite Reliability, Reliability Indicator, Convergent Validity, and Discriminant Validity, finally concluded that the use of the Readiness and Usability integration model can be forwarded to a more complex research stage and can use the questionnaire.

***Keywords*- assessment, readiness, usability, use of information systems**

I. INTRODUCTION

As information systems have become widely utilized, the assessment of the information system has likewise become an important research topic [1]. The Information system has been narrowly defined in terms of databases [2]. This definition focuses on data requirements and the mechanism to store, organize, process, and analyze data [3-15]. An alternative definition takes on a broad perspective to encompass all components of the system, such as data, software and hardware, people, methods, and procedures [16]. The use of information systems in universities has become a necessity [17, 18], some research on information systems in universities has increased along with the increasing need for information systems in universities [19-22].

The internationalization of economies, globalization, the rapid advance of the new technology, changes in production structures, business reorganization and so forth all place increasing pressure on the national statistical systems [23]. Research in science and engineering often involves using controllable and/or easy-to-measure variables (factors) to explain, regulate, or predict the behavior of other variables (responses) [24]. According to past literature study, some researchers used PLS [12, 25-33] method for the analysis. Structural Equation Modeling [34] is one of the current methods used to cover the existing weaknesses of the regression method. The method experts SEM research grouping into two approaches [35]. The first approach is called as Covariance Based SEM (CBSEM) and the other approach is Variance Based SEM or better known as Partial Least Squares (PLS) [36].

In this study, statistical analysis was used to test the questionnaire on the use of information systems derived from the indicators of each variable made from the results of integrating the model of readiness and usabiility. The aim is to statistically assess the results of questionnaire analysis. The findings of this study can later provide input for researchers in terms of testing questionnaires and revising questionnaires, especially in the use of information systems. The research questions used in this study are:

Q1: What is the effect of readiness and usability on the use of information systems?
Q2: Are the results of the assessment of the use of information systems in terms of readiness and usability changing the indicators and variables that exist?

This research was carried out sequentially through four stages of research. At the first stage, the researcher explained the background of the results of the study. The explanation of the research method is in the second stage which explains the stages in the research procedure that is carried out and an explanation of the model used in the measurement of the use of information systems. The third stage of this study presents the results and discussions that are the answers to the problems as stated in the first stage. Finally, from this stage of the research, a conclusion can be drawn which can illustrate the desired results of this study.

II. METHOD

The scope of this study consists of preliminary studies (ie, literature review, model development, and instrument development studies), research programs, model development, research models, instrument development, research instruments, data collection, data analysis, analysis results, interpretation, interpretation result, report writing and result analysis, as stated in Figure 1. The input

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from this study is the model that has been produced by integrating the readiness and usability model (Figure 2) which has produced the questionnaire that will be evaluated.

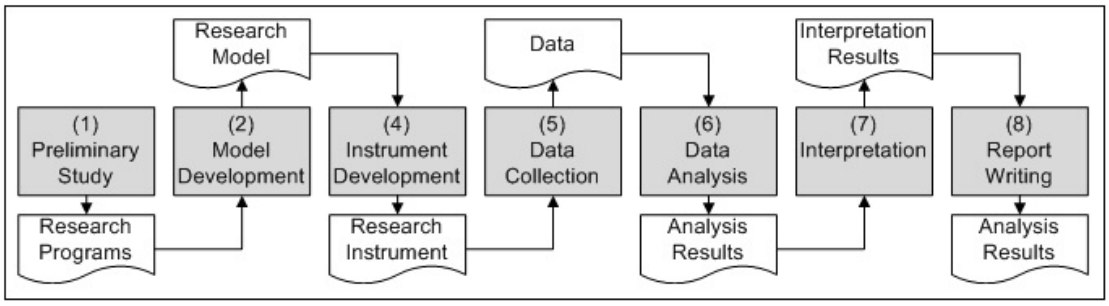

Figure 1. The research procedure [12]

This study developed an information system use model (Figure 2) by adopting Technology Readiness [37] and Usability [38]. The ten variables of the developed model are OPT (Optimism), INV (Innovation), DCF (Discomfort), ISC (Insecurity), LRN (Learnability), EFC (Efficiency), MMR (Memorability), RLB (Reliability), STF (Satisfaction), and SYU (System Usability), From the model that has been built, a questionnaire is generated which is a derivative of the indicators of the variables contained in the model (Figure 2) [2] (Table I and II).

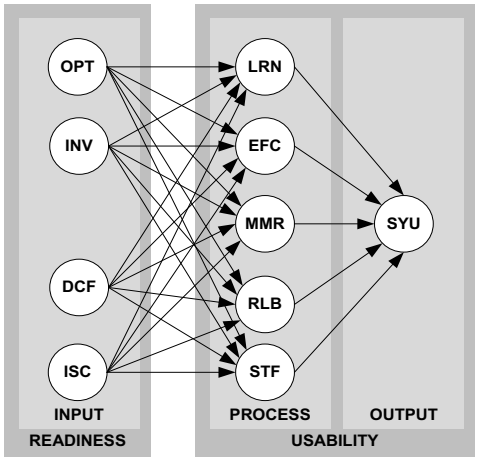

Figure 2 .The Developed Use Information System [2]

The researcher distributed 60 copies of questionnaires, which were distributed based on the experience of the respondent's profile. The distribution of questionnaires is done through the Google Form. The researchers processed the collected data using SmartPLS 2.0. Regarding the amount of data, the PLSSEM method is then used in the analysis phase by using SmartPLS 2.0 to perform reliability indicators, internal consistency reliability, convergent validity, and discriminant validity assessment.

Table 1. List of the questions

Code	Questionnaire
OPT1	The System is free from constraints, difficulties, and troubles [3]
OPT2	The System can be connected easily with other systems [3]
OPT3	The System operates within the minimal resources [3]
OPT4	The System operates within the maximal output [3]
OPT5	The System is able to operate efficiently and effectively [3]
INV1	A System is a problem-solving tool for users [3]
INV2	The System helps users to be free from the controls/influences [3]
INV3	The System supports users for achieving goals in a difficult situation or problem [3]
INV4	The System encourages users to achieve goals [3]
INV5	The System supports users to be more successful than their competitors [3]
DCF1	The System confuses users in its operation [3]
DCF2	The System cannot be operated easily [3]
DCF3	The System cannot be operated freely [3]
DCF4	The System is operated without a full support operation [3]
DCF5	The System is inappropriate to its development planning [3]
ISC1	The System is unsuccessful be operated appropriated to its development planning [3]
ISC2	The System is in a situation that could cause harm or danger [3]
ISC3	The System makes users become less in interactions [3]
ISC4	The System makes users be unfocused with their importance [3]
ISC5	The system is dubious to use [3]
LRN1	The system is easy to use [2]
LRN2	The system is very simple [2]
EFC1	The system gets the job done effectively [2]
EFC2	The System quickly completes the job [2]
EFC3	The system gets the job done efficiently [2]
MMR1	The information in this SI is easy to understand [2]
MMR2	Their commands are aligned to specific functions [2]
MMR3	There hierarchical of the interface is simple to understand [2]
RLB1	The system is always available to operate when needed [2]
RLB2	The System is protected from physical access from non-authoritative rights [2]
RLB3	The system is easy to maintenance [2]
RLB4	The system processing is complete, accurate, and timely [2]
STF1	In this SI, the information provided is very clear [2]
STF2	In this SI there is ease in finding the information needed [2]
STF3	Their navigation in the interface is satisfactory [2]
STF4	The input method is appropriate [2]
SYU1	The organization of information on the screens was clear [2]
SYU2	The interface of this system was pleasant [2]
SYU3	I liked using the interface of this system [2]
SYU4	This system has all the functions and I expect it to have [2]
SYU5	Overall, I am satisfied with this system [2]

Table 2. List of the variables and indicators

Variables	Indicators	References
Optimism	Easiness, connectivity, efficiency, effectiveness, productivity.	[37, 39-43]
Innovation	Problem solving, independence, challenge, stimulation, competitiveness	[15, 37, 43-45]
Discomfort	Complexity, difficulty, dependence, lack of support, inappropriateness	[37, 39-43]
Insecurity	Failure, threat, reducing interaction, distraction, incredulity	[37, 39-42, 46]
Learnability	Ease of use, simplicity	[38]
Efficiency	Effectively, quickly, efficiency	[38]

Variables	Indicators	References
Memorability	Understanding, functionality, convenience	[38]
Reliability	Availability, protectivity, maintenance, accuracy	[37, 38, 47-49]
Satisfaction	Clearly, easily, satisfaction, appropriately	[38]
System Usability	Obviously, pleasantly, likely, expectation, excitement	[38]

III. RESULTS AND DISCUSSION

A. Demographics Information

Table III presents the characteristics of the respondents, i.e., education, position, experience and skill level in using IS. From the results of data collection, it can be seen in Table 4 regarding the characteristics of respondents in terms of readiness and usability in the use of information systems. The above results can provide a recommendation for researchers in terms of data consistency between data collected by the expectations of the researchers. There were 47% of respondents who filled 61-80% of the level of IS usage and 68% of respondents stated their readiness in the level of readiness to use IS.

Table 3. Respondents profiles

Measures	Items	%
Education	High School	3
	Diploma	0
	Bachelor	12
	Master	75
	Doctor	10
Position	Top Manager	22
	Business Unit Manager	20
	Project Manager	47
	Project Team Member	12
Experience	< 2 years	18
	2-5 years	35
	5-10 years	18
	> 10 years	28
Skill	Very unskilled	0
	Unskilled	0
	Less skilled	23
	Skilled	58
	Very skilled	18

Table 4. Readiness and usability profiles

Measures	Items	%
Strategic Plan	Exist	82
	No	5
	Unknown	13
Level of Readiness to use IS	Very unprepared	0
	Not ready	0
	Less ready	15
	Ready	68
	Very ready	17
Level of IS Usage	<20%	5
	21-40%	7
	41-60%	27
	61-80%	47
	81-100%	15
Factors that influence the readiness of IS Usage (Technical)	Cost availability	47
	HR availability	32
	Technology availability	12
	Data availability	7
	Method availability	3
Factors that influence the readiness of IS Usage (Managerial)	Cost availability	33
	HR availability	25
	Technology availability	12
	Data availability	12
	Method availability	18
Factors that influence the readiness of IS Usage (Institutional)	The current SI Concert	17
	Culture and work systems	40
	Support and coordination	20
	Staff support and commitment	10
	Leadership support and commitment	13
IS Advantage	Technical handling of tasks	17
	Operational services	22
	Managerial business	8
	Institution Strategic	53
Readiness Factors Affect the IS Usage	Not very influential	2
	No effect	2
	Less influential	2
	Take effect	50
	Very influential	45

From the results of data collection, it can be seen in Table 4 regarding the characteristics of respondents in terms of readiness and usability in the use of information systems. The above results can provide a recommendation for researchers in terms of data consistency between data collected by the expectations of the researchers. There were 47% of respondents who filled 61-80% of the level of IS usage and 68% of respondents stated their readiness in the level of readiness to use IS.

B. The Statistical Analysis Result

At the statistical analysis result stage, there are several stages to process the questionnaire. The stage consists of evaluating reflective measurement models and structural model assessment. Evaluating reflective measurement are evaluating internal consistency reliability using Composite Reliability (Table IV and Tabel VI), Indicator Reliability (Tabel V), Convergent Validity (Table VII), Discriminant Validity (Tabel VIII).

The Structural Model Assessment is a step to determining whether or not the hypothesis is based on the research model (Table IX), assessing R^2 values of the endogenous latent variable(s) in the path model (Table X) and the last step is assessing an exogenous construct's contribution to an endogenous latent variable's (Table XI).

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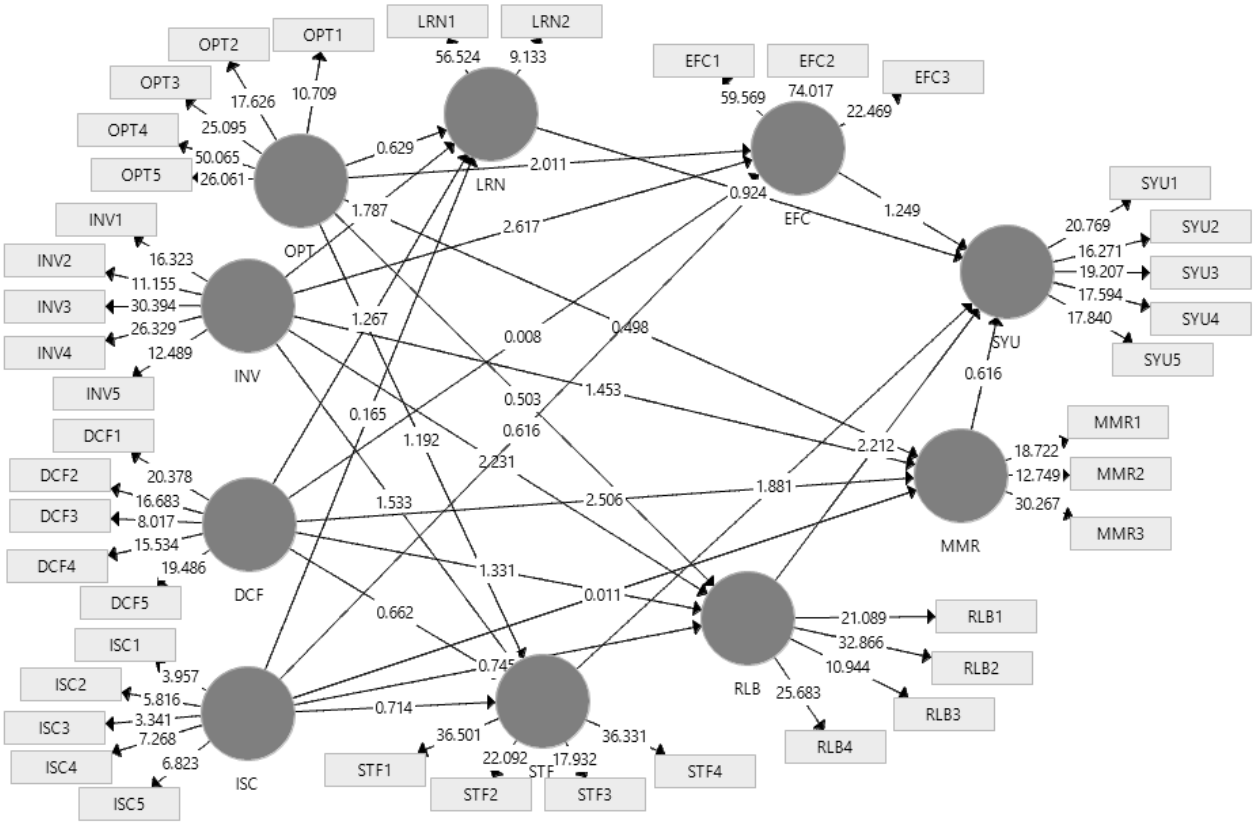

Figure 3. Research model TRU

Table 5. Construct reliability and validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
DCF	0.916	0.929	0.938	0.753
EFC	0.926	0.929	0.944	0.772
INV	0.885	0.890	0.916	0.687
ISC	0.885	0.895	0.915	0.684
LRN	0.847	0.904	0.882	0.603
MMR	0.882	0.885	0.919	0.740
OPT	0.717	0.895	0.867	0.766
RLB	0.949	0.964	0.967	0.908
STF	0.842	0.849	0.905	0.761
SYU	0.929	0.929	0.947	0.817

As we can see from the table above, the composite reliability for all the reflective constructs are higher than 0,708 and have high levels of internal consistency reliability.

Table 6. Outer loadings

	DCF	EFC	INV	ISC	LRN	MMR	OPT	RLB	STF	SYU
DCF1	0.857									
DCF2	0.790									
DCF3	0.774									
DCF4	0.841									
DCF5	0.870									
EFC1		0.958								
EFC2		0.970								
EFC3		0.930								
INV1			0.805							
INV2			0.758							
INV3			0.908							
INV4			0.865							
INV5			0.800							
ISC1				0.684						
ISC2				0.789						
ISC3				0.645						

	DCF	EFC	INV	ISC	LRN	MMR	OPT	RLB	STF	SYU
ISC4				0.874						
ISC5				0.865						
LRN1					0.944					
LRN2					0.801					
MMR1						0.853				
MMR2						0.845				
MMR3						0.917				
OPT1							0.733			
OPT2							0.840			
OPT3							0.906			
OPT4							0.940			
OPT5							0.904			
RLB1								0.878		
RLB2								0.899		
RLB3								0.806		
RLB4								0.854		
STF1									0.928	
STF2									0.888	
STF3									0.874	
STF4									0.925	
SYU1										0.895
SYU2										0.885
SYU3										0.906
SYU4										0.853
SYU5										0.854

From the Table 6, we can see that the outer loadings of indicator ISC1 and ISC3 are below to 0.7, these two indicators need to be analyzed of the impact of indicator deletion on AVE and composite reliability (see Table 5). If the deletion increasing those measurements then the reflective indicators need to be removed from the model, but if the deletion does not increase those measurements the reflective indicators need to be retained.

Table 7. Composite reliability from all models

Composite Reliability	Full Model	Model 2 (Deletion of Indicators ISC1 and ISC3)
DCF	0.938	0.915
EFC	0.944	0.967
INV	0.916	0.916
ISC	0.915	0.894
LRN	0.882	0.867
MMR	0.919	0.905
OPT	0.867	0.938
RLB	0.967	0.919
STF	0.905	0.947
SYU	0.947	0.944

From table 7, we get that deletion of indicators ISC1 and ISC3 has increased the composite reliability.

The AVE for all models are higher than 0,5, so the convergent validity confirmed. From table 8 we also get that all the indicator's outer loadings on a construct are higher than its cross-loadings with other constructs, then the discriminant validity confirmed [39].

Table 8. Convergent validity from all models

AVE	Full Model	Model 2 (Deletion of Indicators ISC1 and ISC3)
DCF	0.753	0.684
EFC	0.772	0.908
INV	0.687	0.687
ISC	0.684	0.737
LRN	0.603	0.766
MMR	0.740	0.761
OPT	0.766	0.753
RLB	0.908	0.740
STF	0.761	0.817
SYU	0.817	0.772

The determination of whether or not the hypothesis is based on the research model we can see at Tabel 9. To assess the significance of path coefficients we use significant level 5% and one-tailed test. The significance level is 1,64.

R^2 values of endogen constructs System Usability and Memorability are respectively substantial, meanwhile the endogen constructs Efficiency, Learnability are respectively weak and endogen construct Reliability, Satisfaction is respectively moderate (Tabel 10). Meanwhile, from Tabel 11, we can see all the exogenous construct's contribution to its endogenous latent variable [39].

Table 9. Cross loadings of model 2

	DCF	EFC	INV	ISC	LRN	MMR	OPT	RLB	STF	SYU
DCF1	0.857	-0.341	-0.379	0.671	-0.353	-0.471	-0.398	-0.412	-0.420	-0.339
DCF2	0.790	-0.206	-0.367	0.594	-0.495	-0.483	-0.317	-0.441	-0.450	-0.337
DCF3	0.774	-0.329	-0.349	0.598	-0.305	-0.305	-0.288	-0.224	-0.191	-0.065
DCF4	0.841	-0.348	-0.354	0.600	-0.315	-0.493	-0.421	-0.432	-0.269	-0.226
DCF5	0.870	-0.243	-0.272	0.658	-0.271	-0.456	-0.349	-0.393	-0.310	-0.170
EFC1	-0.314	0.958	0.561	-0.335	0.448	0.527	0.493	0.534	0.642	0.664
EFC2	-0.292	0.970	0.511	-0.268	0.379	0.547	0.490	0.523	0.650	0.590
EFC3	-0.410	0.930	0.467	-0.373	0.339	0.528	0.517	0.437	0.570	0.421
INV1	-0.474	0.532	0.805	-0.336	0.289	0.453	0.490	0.423	0.385	0.451
INV2	-0.283	0.507	0.758	-0.277	0.361	0.336	0.651	0.234	0.372	0.376
INV3	-.0358	0.475	0.908	-0.196	0.418	0.292	0.532	0.287	0.339	0.383

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	DCF	EFC	INV	ISC	LRN	MMR	OPT	RLB	STF	SYU
INV4	-0.328	0.407	0.865	-0.181	0.412	0.324	0.479	0.379	0.349	0.589
INV5	-0.256	0.281	0.800	-0.087	0.378	0.301	0.407	0.267	0.294	0.334
ISC2	0.639	-0.277	-0.282	0.813	-0.244	-0.371	-0.195	-0.339	-0.318	-0.213
ISC4	0.741	-0.116	-0.213	0.868	-0.181	-0.325	-0.286	-0.261	-0.185	-0.109
ISC5	0.604	-0.404	-0.202	0.893	-0.384	-0.369	-0.373	-0.374	-0.390	-0.334
LRN1	-0.421	0.418	0.450	-0.356	0.944	0.478	0.417	0.504	0.520	0.550
LRN2	-0.314	0.277	0.306	-0.195	0.801	0.311	0.228	0.224	0.240	0.234
MMR1	-0.485	0.493	0.328	-0.413	0.617	0.853	0.294	0.707	0.692	0.495
MMR2	-0.420	0.480	0.347	-0.303	0.273	0.845	0.273	0.595	0.702	0.539
MMR3	-0.516	0.494	0.412	-0.377	0.346	0.917	0.416	0.616	0.719	0.561
OPT1	-0.381	0.411	0.418	-0.334	0.261	0.288	0.733	0.206	0.214	0.190
OPT2	-0.366	0.461	0.603	-0.243	0.340	0.245	0.840	0.234	0.329	0.350
OPT3	-0.309	0.476	0.573	-0.278	0.284	0.310	0.906	0.208	0.376	0.426
OPT4	-0.370	0.531	0.576	-0.363	0.358	0.363	0.940	0.250	0.427	0.466
OPT5	-0.453	0.392	0.521	-0.257	0.436	0.420	0.904	0.277	0.402	0.402
RLB1	-.0394	0.357	0.263	-0.293	0.389	0.587	0.103	0.878	0.612	0.561
RLB2	-0.391	0.468	0.388	-0.304	0.319	0.594	0.295	0.898	0.642	0.685
RLB3	-0.453	0.512	0.393	-0.399	0.481	0.688	0.267	0.807	0.647	0.557
RLB4	-0.388	0.465	0.289	-0.343	0.374	0.643	0.256	0.854	0.695	0.657
STF1	-0.392	0.499	0.328	-0.335	0.482	0.755	0.349	0.701	0.928	0.616
STF2	-0.373	0.743	0.418	-0.400	0.432	0.677	0.451	0.622	0.888	0.730
STF3	-0.308	0.467	0.362	-0.238	0.400	0.723	0.334	0.714	0.874	0.653
STF4	-0.410	0.623	0.413	-0.344	0.391	0.766	0.338	0.702	0.925	0.710
SYU1	-0.332	0.525	0.524	-0.250	0.481	0.561	0.383	0.586	0.660	0.895
SYU2	-0.251	0.459	0.476	-0.269	0.479	0.518	0.374	0.632	0.662	0.885
SYU3	-0.146	0.409	0.414	-0.162	0.373	0.466	0.328	0.562	0.561	0.906
SYU4	-0.237	0.545	0.371	-0.252	0.443	0.519	0.322	0.752	0.681	0.853
SYU5	-0.306	0.653	0.503	-0.271	0.367	0.602	0.484	0.595	0.721	0.854

Table 10. Assessment of the significance of path coefficients

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Results
DCF -> EFC	0.063	0.059	0.224	0.281	0.779	Not Significant
DCF -> LRN	-0.232	-0.230	0.188	1.237	0.216	Not Significant
DCF -> MMR	-0.407	-0.401	0.165	2.471	0.014	Significant
DCF -> RLB	-0.305	-0.307	0.198	1.538	0.125	Not Significant
DCF -> STF	-0.131	-0.141	0.187	0.702	0.483	Not Significant
DCF -> SYU	-0.123	-0.120	0.168	0.730	0.466	Not Significant
EFC -> SYU	0.147	0.153	0.122	1.201	0.230	Not Significant
INV -> EFC	0.349	0.365	0.134	2.603	0.010	Significant
INV -> LRN	0.269	0.259	0.152	1.769	0.077	Significant
INV -> MMR	0.194	0.200	0.129	1.497	0.135	Not Significant
INV -> RLB	0.275	0.270	0.136	2.021	0.044	Significant
INV -> STF	0.228	0.231	0.150	1.518	0.130	Not Significant
INV -> SYU	0.257	0.281	0.118	2.169	0.031	Significant
ISC -> EFC	-0.230	-0.207	0.193	1.053	0.293	Not Significant
ISC -> LRN	-0.051	-0.068	0.190	0.266	0.790	Not Significant
ISC -> MMR	-0.034	-0.033	0.188	0.182	0.856	Not Significant
ISC -> RLB	-0.108	-0.110	0.185	0.582	0.561	Not Significant
ISC -> STF	-0.154	-0.162	0.193	0.796	0.426	Not Significant
ISC -> SYU	-0.140	-0.147	0.144	0.971	0.332	Not Significant
LRN -> SYU	0.129	0.109	0.144	0.895	0.371	Not Significant
MMR -> SYU	-0.163	-0.094	0.263	0.618	0.537	Not Significant
OPT -> EFC	0.265	0.246	0.131	2.021	0.044	Significant
OPT -> LRN	0.107	0.115	0.179	0.595	0.552	Not Significant
OPT -> MMR	0.071	0.087	0.153	0.461	0.645	Not Significant
OPT -> RLB	-0.067	-0.059	0.135	0.497	0.619	Not Significant
OPT -> STF	0.160	0.153	0.142	1.124	0.262	Not Significant
OPT -> SYU	0.091	0.085	0.118	0.772	0.441	Not Significant
RLB -> SYU	0.354	0.370	0.154	2.295	0.022	Significant
STF -> SYU	0.461	0.388	0.247	1.865	0.063	Significant

Table 11. R Square

	R Square	R Square Adjusted
EFC	0.374	0.329
LRN	0.278	0.226
MMR	0.344	0.296
RLB	0.275	0.222
STF	0.273	0.220
SYU	0.652	0.620

Table 12. F- Square

	DCF	EFC	INV	ISC	LRN	MMR	OPT	RLB	STF	SYU
DCF		0.002			0.028	0.095		0.048	0.009	
EFC										0.035
INV		0.113			0.058	0.033		0.060	0.041	
ISC		0.028			0.002	0.001		0.007	0.014	
LRN										0.035
MMR										0.024
OPT		0.064			0.009	0.004		0.004	0.020	
RLB										0.137
STF										0.153
SYU										

IV. CONCLUSION

In accordance with the purpose of the study, evaluation of questionnaires using statistical analysis through validity and reliability used as material for revision of the model and questionnaires that have previously been built through the stages of integration and adoption of several models. The results of this study there are no results from the evaluation that researchers must do to change models and questionnaires, only for researchers who are interested in research in the area of research regarding the use of information systems, it becomes its own attraction to further develop and measure further.

It needs to be a very big concern regarding the sample used in this study, considering the sample used only in private universities in Indonesia that have solid activities in the use of information systems, it is better for other researchers to try to apply the measurement model that has been built including the questionnaire in the different.

V. REFERENCES

[1] M.-C. Wu, "A Study on the Willingness to Use Information System of Sport Event Based on Information System Success Model," *The Journal of Human Resource and Adult Learning, Vol. 9, Num. 2, December 2013 issue,* 2013.

[2] D. Yuniarto, A. Subiyakto, E. Firmansyah, D. Herdiana, M. Suryadi, and A. A. Rahman, "Integrating the Readiness and Usability Models for Assessing the Information System Use," *The 6th International Conference on Cyber and IT Service Management (CITSM 2018) Medan, August 7-9, 2018,* 2018.

[3] A. Subiyakto, "Development of the Readiness and Success Model for Assessing the Information System Integration," pp. 1-10, 2017.

[4] A. Subiyakto, R. Rosalina, M. C. Utami, N. Kumaladewi, and S. J. Putra, "The Psychometric and Interpretative Analyses for Assessing the End-User Computing Satisfaction Questionnaire," in *5th International Conference on Information Technology for Cyber and IT Service Management (CITSM) 2017* Denpasar, Bali, 2017: IEEE.

[5] A. Subiyakto, D. Septiandani, E. Nurmiati, Y. Durachman, M. Kartiwi, and A. R. Ahlan, "Managers Perceptions towards the Success of E-Performance Reporting System," *TELKOMNIKA (Telecommunication Computing Electronics and Control),* vol. 15, no. 3, pp. 1389-1396, 2017.

[6] A. Subiyakto, "Development of The Readiness and Success Model for Assessing the Information System Integration," presented at the International Conference on Science and Technology (ICOSAT) 2017, Jakarta, 08 October 2017 2017.

[7] S. J. Putra, A. Subiyakto, A. R. Ahlan, and M. Kartiwi, "A Coherent Framework for Understanding the Success of an Information System Project," *TELKOMNIKA (Telecommunication Computing Electronics and Control),* vol. 14, no. 1, pp. 302-302, 2016.

[8] A. Subiyakto, A. R. Ahlan, M. Kartiwi, and S. J. Putra, "Measurement of the information system project success of the higher education institutions in Indonesia: a pilot study," *International Journal of Business Information System,* vol. 23, no. 2, pp. 229-247, 2016.

[9] A. Subiyakto, A. R. Ahlan, M. Kartiwi, S. J. Putra, and Y. Durachman, "The User Satisfaction Perspectives of the Information System Projects," *Indonesian Journal of Electrical Engineering and Computer Science,* vol. 4, no. 1, 2016.

[10] A. Subiyakto, A. R. Ahlan, M. Kartiwi, and H. T. Sukmana, "Influences of the Input Factors towards Success of An Information System Project," *TELKOMNIKA (Telecommunication Computing Electronics and Control),* vol. 13, no. 2, p. 686, 2015.

[11] A. Subiyakto, A. R. Ahlan, S. J. Putra, and M. Kartiwi, "Validation of Information System Project Success Model," *SAGE Open,* vol. 5, no. 2, p. 215824401558165, 2015.

[12] A. Subiyakto, A. R. Ahlan, M. Kartiwi, and H. T. Sukmana, "Measurement of information system project success based on perceptions of the internal stakeholders," *International Journal of Electrical and Computer Engineering,* vol. 5, no. 2, pp. 271-279, 2015.

[13] A. Subiyakto and A. R. Ahlan, "Implementation of Input-Process-Output Model for Measuring Information System Project Success," *TELKOMNIKA Indonesian Journal of Electrical Engineering,* vol. 12, no. 7, 2014.

[14] A. Subiyakto, A. R. Ahlan, and H. T. Sukmana, "An Alternative Method for Determining Critical Success Factors of Information System Project," *TELKOMNIKA Telecommunication, Computing, Electronics and Control,* vol. 12, no. 3, pp. 665-674, 2014 2014.

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[15] A. Subiyakto and A. R. Bin Ahlan, "A coherent framework for understanding critical success factors of ICT project environment," *International Conference on Research and Innovation in Information Systems, ICRIIS,* vol. 2013, pp. 342-347, 2013.
[16] R. B. CRUZ, "Land Use Information System for Local Government: The Case of Naga City, Philippines," *SYSTEMICS, CYBERNETICS AND INFORMATICS ISSN: 1690-4524,* vol. ISSN: 1690-4524 SYSTEMICS, CYBERNETICS AND INFORMATICS no. VOLUME 4 - NUMBER 6.
[17] D. Yuniarto, "Analisis Penerimaan Penggunaan Aplikasi Laporan BKD dan Evaluasi Pelaksanaan Tridharma PT Online menggunakan TAM," 2018.
[18] D. Yuniarto, "Analisis Penerimaan Grab di Kabupaten Sumedang," vol. 5, pp. 0-4, 2017.
[19] G. Gusti, "Pengukuran Pengaruh Kesiapan Terhadap Keberhasilan Penerapan Sistem Ubiquitous Computing di UIN Syarif," no. February, 2018.
[20] M. Kartiwi, "Model Keberhasilan Proyek Sistem Informasi : Penjelasan Ringkas Pencatatan Hak Cipta No . Universitas Islam Negeri (UIN) Syarif Hidayatullah Jakarta," no. 01835, 2017.
[21] H. A. Qadrya, "Faktor-faktor yang Mempengaruhi Kesiapan Penerapan Sistem Single Sign On di UIN Syarif Hidayatullah Jakarta," no. January, 2018.
[22] F. A. Uin, "SISTEM SINGLE SIGN ON DI UIN SYARIF," no. February, 2018.
[23] H. Jeskanen-Sundstrom, "ICT Statistics at the New Millennium – Developing Official Statistics – Measuring the Diffusion of ICT and its Impacts," *IAOS Satellite Meeting on Statistics for the Information Society August 30 and 31, 2001, Tokyo, Japan,* 2001.
[24] R. D. Tobias, "An Introduction to Partial Least Squares Regression," *SAS Institute Inc., Cary, NC*.
[25] T. He and C. Zhu, "Digital informal learning among Chinese university students: the effects of digital competence and personal factors," *International Journal of Educational Technology in Higher Education,* vol. 14, no. 1, 2017.
[26] J. Henseler, G. Hubona, and P. A. Ray, "Using PLS path modeling in new technology research: updated guidelines," *Industrial Management & Data Systems,* vol. 116, no. 1, pp. 2-20, 2016.
[27] L. A. Joia, L. F. D. Gutman, and V. Moreno, "Intention of use of home broker systems from the stock market investors' perspective," *Journal of High Technology Management Research,* vol. 27, no. 2, pp. 184-195, 2016.
[28] J. H. Joo, "Understanding Korean College Students' Social Commerce Behavior through an Integrated Model of Technology Readiness, Technology Acceptance Model, and Theory of Planned Behavior," *Journal of Digital Convergence,* vol. 13, no. 7, pp. 99-107, 2015.
[29] J. Luftman, K. Lyytinen, and T. B. Zvi, "Enhancing the Measurement of Information Technology (IT) Business Alignment and Its Influence on Company Performance," *Journal of Information Technology,* vol. 32, no. 1, pp. 26-46, 2017.
[30] A. A. Rabaai, "An Empirical Investigation on the Adoption of e-Government in Developing Countries: The Case of Jordan," *Computer and Information Science,* vol. 8, no. 3, 2015.
[31] M. Sarstedt, C. M. Ringle, and J. F. Hair, "Partial Least Squares Structural Equation Modeling," *Handbook of Market Research,* no. May 2017, pp. 1-40, 2017.
[32] A. Subiyakto, A. R. Ahlan, M. Kartiwi, and H. T. Sukmana, "Influences of the Input Factors towards Success of An Information System Project," *TELKOMNIKA (Telecommunication Computing Electronics and Control),* vol. 13, no. 2, pp. 686-686, 2015.
[33] A. Subiyakto, R. Rosalina, M. C. Utami, N. Kumaladewi, and S. J. Putra, "The psychometric and interpretative analyses for assessing the end-user computing satisfaction questionnaire," *2017 5th International Conference on Cyber and IT Service Management, CITSM 2017,* no. November, 2017.
[34] P. Seminar *et al.*, "Algoritma Enkripsi Citra," vol. 4, no. November, pp. 117-126, 2014.
[35] W. M. A. B. W. Afthanorhan, "A Comparison Of Partial Least Square Structural Equation Modeling (PLS-SEM) and Covariance Based Structural Equation Modeling (CB-SEM) for Confirmatory Factor Analysis," *International Journal of Engineering Science and Innovative Technology (IJESIT) Volume 2, Issue 5, September 2013,* 2013.
[36] Z. Awang, A. Afthanorhan, and M. Mamat, "The Likert scale analysis using parametric based Structural Equation Modeling (SEM)," *Computational Methods in Social Sciences,* vol. 4, no. 1, pp. 13-21, 2015.
[37] A. Parasuraman and C. L. Colby, "An Updated and Streamlined Technology Readiness Index: TRI 2.0," *Journal of Service Research,* vol. 18, no. 1, pp. 59-74, 2015.
[38] J. Nielsen, "Usability 101 : Introduction to Usability Why Usability is Important How to Improve Usability," *Focus,* pp. 1-4, 2006.
[39] J. F. Hair Jr, G. T. M. Hult, C. Ringle, and M. Sarstedt, *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage Publications, 2016.