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Technology readiness and usability of office automation system in suburban areas

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ABSTRACT

Readiness and usability issues are important attributes of an information system (IS) success. Currently, IS studies that have been assessing the issues in suburban areas are still limited. The purpose of this study was to measure the above-mentioned phenomena by combining the readiness and usability models. The proposed model consisted out 10 constructs with 25 indicators. The four constructs were from the readiness model and the six ones were the usability model. The 89 samples were collected using an online survey based on purposive random sampling. Partial least squares structural equation modeling (PLS-SEM) method with SmartPLS 3.2.8 was used for analyzing the data. The findings may have contributed to the IS research field, in terms of the readiness and usability issues on the IS use in a suburban area in Indonesia.

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1. INTRODUCTION

The IS use in an organization is a necessity that must be immediately fulfilled, let alone adapted to the needs of the Industrial Revolution 4.0 [1]. An organization needs very careful consideration regarding its use, considering that the use of IS requires not a small amount of money [2-5] In terms of readiness [6], the organization must measure all aspects of its use [3, 7-9]. The use of IS in organizations is usually needed to facilitate users [10-13] in helping their work with high-efficiency IS [2-5]. Consideration regarding the use of IS requires sustainability studies [14], remembering this is very important for the development of an organization [15-17].

Some studies have argued that what plays an important role in maintaining the sustainability of IS use [14] is a high-efficiency IS that is felt directly by the user [2, 4, 18, 19] and supported by readiness factors [20-22]. In some suburban institutions, problems were found regarding the implementation of IS related to readiness issues, including problems in the availability of human resources and infrastructure [23-27]. On the other hand, it is less understood that the use of IS is mainly in terms of ease of use. The literature review by reviewing and understanding several studies regarding the use of IS, combining Readiness and Usability models [3] can be an alternative to be used in measuring the level of readiness and usefulness of the use of IS so that it can predict the use of IS for future organizations.

This research was conducted in several suburban area institutions with the aim to determine the level of readiness and usability of IS use and to determine what factors influence the readiness and usability of IS use. The readiness model is a model used to measure the level of readiness in the use of IS [6] through variable optimism, innovation, discomfort, and insecurity [6]. The variable in the usability model is used as the dependent variable that is used to measure in terms of learnability, efficiency, memorability, reliability, and satisfaction [3, 28, 29] in determining the high and sustainable use of IS [14]. Based on the research program mentioned above, two research questions were asked to guide implementation.

RQ1: What are the characteristics of office automation system users in the suburban area?

RQ2: What factors influence the readiness and usability of the use of office automation systems in the suburban area?

The structure of this paper is at stake in five parts. The introduction contains background exposure to the problem, delivery of objectives, and questions of the Study. The second part is a literature review. The next stage is the delivery of research methods, including procedures, population and samples, data collection, sampling, tools, data analysis, and interpretation points. The results and analysis part include the results of the descriptive and inferential analysis, contributions, limitations, and research recommendations supported by other studies. And finally, the conclusions section, summarizes the paper, in relation to the points highlighted in all sections.

2. LITERATURE REVIEW

Office automation systems are part of an information system. Office automation systems are present to handle jobs whose scope is limited and are only intended to support individual work in the office [13]. Uneven developments regarding the application of information systems in several regions resulted in the use of information systems, in this case, office automation systems became preachers [10-12]. To avoid the illusion of the application of information systems it is necessary to measure readiness problems. Measurement of readiness using the Technology Readiness Index model has been introduced for a long time by Parasuraman [6]. TRI is used to determine the readiness to use information systems from four variables (optimism, innovation, discomfort, and insecurity) [6].

In addition to the measurement of readiness, the re are several other factors that greatly influence the implementation of the use of information systems, namely those relating to learnability, effectiveness, memorability, reliability, and satisfaction [3, 28, 29]. These factors are contained in the Usability model of Nielsen. The combination of the two models in Figure 1 is expected to provide a solution to the problems that arise in the background above. Some researchers develop a successful model of IS use by adopting, combining, and adopting technology readiness and IS success models, in terms of IS integration assessment. input-process-output logic and procession and causal models of the IS model are used [30, 31]. This study also combines two models with IPO logic [3]. Basically, after combining two models consisting of variables, the indicators appear that are used as references in making questions in the questionnaire [32].

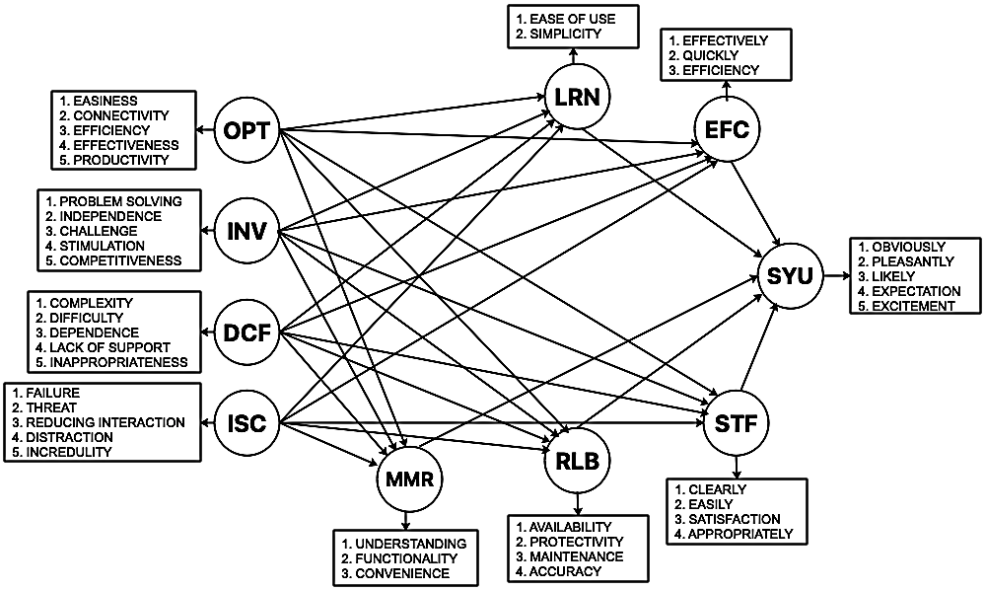

Figure 1. The research model [3]

3. RESEARCH METHOD

This research was completed in eight steps described in the research procedure as shown in Figure 2. Literature review (1) is the first step taken as material in shaping the research program. The second stage is research design (2), which is a stage in designing research, continuing to the development model stage (3). At the stage of the development, the model produces a new model result combining two models (Readiness and Usability models) to produce research models and research instruments (4). After the models and instruments are created, a survey (5) is conducted to obtain data (data obtained by distributing questionnaires through google form) which are then analyzed (6) and interpreted (7) so that findings are finally reported (8) in written form [9]. The researcher distributed 89 copies of the questionnaire through google form to several institutions based on the experience of the respondent's profile. The question given is the result of the variables and indicators contained in the model.

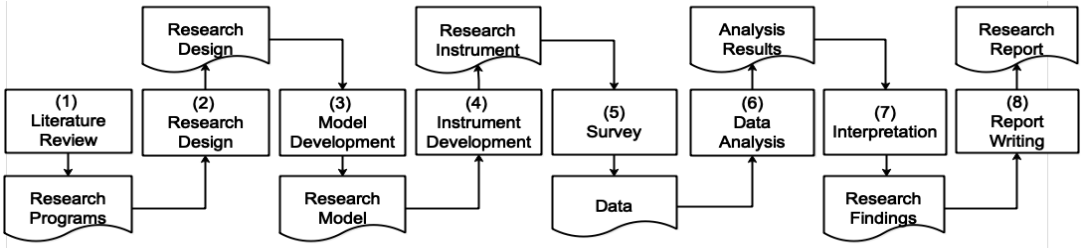

Figure 2. The research procedure [9]

4. RESULTS AND ANALYSIS

4.1. Demographics information

The characteristics of respondents presented in Table 1 are related to the problem of trust and validity of data sources [33]. It can be seen clearly that the demographic spread of this study is the trust and validity of the data used [33]. Readiness and Usability of the SI profile are presented in Table 2 useful for estimating the spread of data on research findings and the quality of findings referred to the tendency of data validity to be used in terms of the IPO logic of the research implementation [33].

4.2. The statistical analysis results

At the stage of the results of statistical analysis, there are several stages to process data from the questionnaire. This stage consists of evaluating the reflective measurement model and the assessment of structural models, namely evaluating reflective measurements by evaluating internal consistency reliability using composite reliability, reliability indicators, convergence validity, and discriminant validity. Evaluation of the structural model is a step to determine whether a hypothesis is based on the research model, and the value of R^2 from endogenous latent variables in the path model and the last step to assess the contribution of exogenous constructs to endogenous latent variables.

From Figure 3, composite reliability for all reflective constructions is higher than 0.708 and has a high level of internal consistency reliability. Outside loading OPT1, DCF3, ISC3, and ISC4 is more than 0.4 but below 0.7. These four indicators need to analyze the impact of eliminating indicators on AVE and composite reliability. The composite reliability for all reflective constructions is higher than 0.708 and the removal of indicators increases value. From the results above, it was found that the removal of the OPT1, DCF3, ISC3, and ISC4 indicators did not increase composite reliability, while the AVE increased. Then it needs to be analyzed when all three indicators cannot be removed from the model.

From Table 3, we can see that all external indicators loading on construction is higher than cross-loading with other constructs and the square root of AVE is higher than the highest correlation with other constructs. From Table 4 and 5, each construct predictor tolerance (VIF) of the DCF, EFC, INV, ISC, LRN, MMR, OPT, RLB, and STF predictors is lower than 5 and higher than 0.2. The critical value for the two-sided test is 1.65 (significance level = 10%), 1.96 (significance level = 5%), and 2.57 (significance level = 1%). To assess the significance of the path coefficient a significant level of 5% is used and a one-sided test. The significance level is 1.64. PLS-SEM aims to maximize the value of R^2 from endogenous latent variables in the path model. Thus, the goal is the value of high R^2. While the correct interpretation of the R^2 value level depends on the particular model and research discipline. In general, the value of R^2 0.75, 0.50, or 0.25 for endogenous construction can be described as each being substantial, medium, and weak. The R^2 values of the endogenous SYU construct are medium. While the endogenous constructs of EFC, LRN, MMR, RLB, and STF are each weak.

From Table 6, the f^2 value of exogenous DCF construction contributes to small endogenous latent variables EFC, LRN, MMR, RLB, and STF. f^2 value of exogenous construct INV contributions for endogenous latent variables, small LRN and STF, but for EFC are large effects and medium MMR and RLB. The f^2 value of the exogenous construct contributes ISC to the endogenous latent variable's MMR is small but for EFC, LRN, RLB, and STF are medium. The f^2 value contributes to the exogenous OPT to the endogenous latent variable's MMR is small but for EFC, LRN, RLB, and STAF are moderate. The f^2 value of the exogenous construct of EFC contributes to the small endogenous SYU variable. The f^2 value of the exogenous construct LRN contributes to the medium endogenous SYU variable. The f^2 value contributes to the exogenous MMR construct for the small endogenous SYU variable. The f^2 value contributes to the exogenous RLB construct for the medium endogenous SYU variable. The f^2 value of the exogenous construct contributing STF to the endogenous latent variable SYU is a medium effect. Clear in Table 7, the resulting Q^2 value greater than 0 indicates that the exogenous construct has predictive relevance for the endogenous construct under consideration. As a relative measure of predictive relevance (Q^2), values of 0.02, 0.15, and 0.35 respectively indicate that exogenous constructs have small, medium, or large predictive relevance for certain endogenous constructs.

Table 1. Respondents profiles

Measures	Items	%
Education	Bachelor	9
	Master	91
Position	Top Manager	18
	Business Unit Manager	25
	Project Manager	46
	Project Team Member	11
Experience	< 2 years	16
	2-5 years	33
	5-10 years	27
	> 10 years	25
Skill	Less skilled	16
	Skilled	58
	Very skilled	26

Table 2. Readiness and usability profiles

Measures	Items	%
Strategic Plan	Exist	81
	No	4
	Unknown	15
Level of Readiness to use IS	Less ready	19
	Ready	66
	Very ready	15
Level of IS Usage	<20%	3
	21-40%	6
	41-60%	29
	61-80%	48
	81-100%	13
Factors that influence the readiness of IS Usage (Technical)	Cost availability	45
	HR availability	24
	Technology availability	18
	Data availability	6
	Method availability	8
Factors that influence the readiness of IS Usage (Manajerial)	Cost availability	27
	HR availability	24
	Technology availability	15
	Data availability	16
	Method availability	19
Factors that influence the readiness of IS Usage (Institutional)	The current SI Concert	11
	Culture and work systems	33
	Support and coordination	21
	Staff support and commitment	15
	Leadership support and commitment	20
Readiness Factors Affect the IS Usage	Not very influential	1
	No effect	1
	Less influential	2
	Take effect	52
	Very influential	44

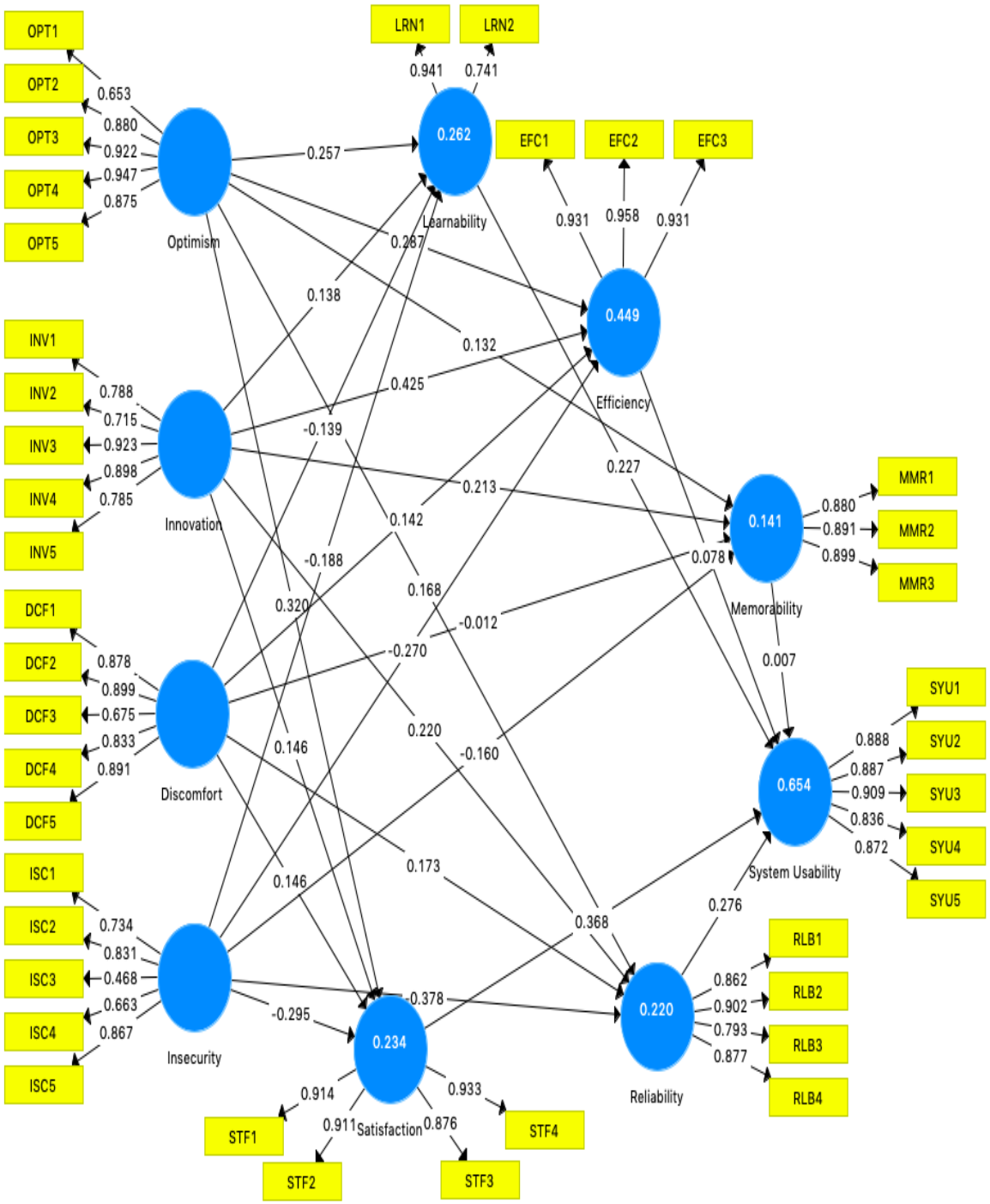

Figure 3. Results of the outer model assessment

The analysis in Table 8 results that efficiency is influenced by innovation and insecurity. If it is associated with a profile of readiness and usability, it is clear that users assume that new things or innovations are considered to affect the security of users [34-36]. Insecurity factors themselves influence the factors of reliability and satisfaction, according to the results of the research that has been done [37]. On the other hand optimism factors significantly influence the factors of efficiency, learnability, satisfaction [38]. Regarding usability factors from the results of the analysis above are significantly influenced by reliability factors [38]. This research was conducted in suburban areas consisting of respondents with different backgrounds, which could affect at least the accuracy of the results of the analysis and also influence the number of not significant results [2, 8, 20, 31, 32, 35].

Table 3. The Measurement model assessments

	DCF	EFC	INV	ISC	LRN	MMR	OPT	RLB	STF	SYU	AV	CR	R^2	R^2Ad
DCF1	0.882	-0.198	-0.175	0.498	-0.345	-0.201	-0.213	-0.125	-0.177	-0.178				
DCF2	0.904	-0.141	-0.191	0.604	-0.408	-0.191	-0.238	-0.194	-0.220	-0.218				
DCF4	0.826	-0.236	-0.235	0.511	-0.242	-0.136	-0.298	-0.157	-0.047	-0.067	0.768	0.930		
DCF5	0.891	-0.160	-0.162	0.593	-0.260	-0.200	-0.237	-0.141	-0.152	-0.079				
EFC1	-0.185	0.932	0.606	-0.303	0.493	0.449	0.475	0.511	0.564	0.540				
EFC2	-0.174	0.958	0.548	-0.254	0.463	0.508	0.452	0.531	0.564	0.588	0.884	0.958	0.450	0.424
EFC3	-0.223	0.931	0.507	-0.308	0.434	0.476	0.517	0.468	0.521	0.432				
INV1	-0.279	0.486	0.788	-0.261	0.174	0.319	0.318	0.253	0.228	0.208				
INV2	-0.163	0.410	0.715	-0.196	0.204	0.218	0.500	0.128	0.193	0.153				
INV3	-0.123	0.580	0.923	-0.115	0.339	0.263	0.518	0.317	0.326	0.320	0.681	0.914		
INV4	-0.205	0.512	0.898	-0.229	0.342	0.280	0.445	0.384	0.335	0.435				
INV5	-0.131	0.432	0.785	0.035	0.289	0.211	0.407	0.263	0.262	0.271				
ISC1	0.439	-0.122	-0.079	0.745	-0.147	-0.086	-0.007	-0.222	-0.117	-0.235				
ISC2	0.443	-0.217	-0.188	0.830	-0.233	-0.220	-0.041	-0.342	-0.256	-0.161	0.664	0.855		
ISC5	0.629	-0.347	-0.158	0.865	-0.398	-0.200	-0.239	-0.250	-0.262	-0.304				
LRN1	-0.398	0.486	0.331	-0.386	0.941	0.432	0.402	0.485	0.499	0.613				
LRN2	-0.170	0.322	0.214	-0.135	0.740	0.279	0.259	0.294	0.281	0.297	0.717	0.833	0.271	0.237
MMR1	-0.183	0.495	0.224	-0.228	0.547	0.880	0.240	0.699	0.724	0.578				
MMR2	-0.125	0.404	0.259	-0.14 1	0.307	0.891	0.213	0.616	0.727	0.580	0.792	0.920	0.141	0.100
MMR3	-0.249	0.455	0.351	-0.224	0.310	0.900	0.275	0.559	0.696	0.538				
OPT2	-0.267	0.498	0.541	-0.065	0.366	0.218	0.879	0.263	0.333	0.280				
OPT3	-0.215	0.482	0.488	-0.138	0.347	0.258	0.931	0.263	0.388	0.355				
OPT4	-0.236	0.502	0.484	-0.180	0.367	0.247	0.954	0.267	0.389	0.349	0.832	0.952		
OPT5	-0.296	0.376	0.408	-0.137	0.40 1	0.272	0.881	0.289	0.386	0.301				
RLB1	-0.183	0.435	0.232	-0.253	0.476	0.644	0.229	0.862	0.701	0.655				
RLB2	-0.220	0.473	0.367	-0.311	0.386	0.542	0.322	0.901	0.660	0.640				
RLB3	-0.208	0.462	0.259	-0.267	0.467	0.626	0.308	0.794	0.669	0.518	0.739	0.919	0.219	0.182
RLB4	-0.015	0.479	0.295	-0.320	0.347	0.614	0.172	0.877	0.704	0.664				
STF1	-0.128	0.515	0.277	-0.222	0.477	0.736	0.378	0.738	0.914	0.645				
STF2	-0.205	0.600	0.318	-0.362	0.487	0.717	0.419	0.681	0.912	0.721				
STF3	-0.122	0.458	0.290	-0.155	0.383	0.705	0.347	0.746	0.876	0.656	0.826	0.950	0.237	0.201
STF4	-0.187	0.543	0.321	-0.253	0.418	0.767	0.342	0.730	0.933	0.693				
SYU1	-0.198	0.477	0.292	-0.254	0.582	0.61 1	0.274	0.594	0.659	0.888				
SYU2	-0.197	0.463	0.318	-0.283	0.540	0.522	0.289	0.642	0.660	0.887				
SYU3	-0.084	0.438	0.259	-0.205	0.457	0.473	0.270	0.585	0.581	0.909	0.772	0.944	0.654	0.633
SYU4	-0.093	0.454	0.264	-0.202	0.493	0.512	0.325	0.721	0.635	0.836				
SYU5	-0.144	0.600	0.391	-0.308	0.470	0.654	0.382	0.628	0.738	0.872				

Table 4. Fornell larcker criterion

	DCF	EFC	INV	ISC	LRN	MMR	OPT	RLB	STF	SYU
DCF	0.876									
EFC	-0.205	0.940								
INV	-0.215	0.591	0.825							
ISC	0.630	-0.306	-0.185	0.815						
LRN	-0.368	0.494	0.334	-0.345	0.847					
MMR	-0.210	0.507	0.313	-0.223	0.436	0.890				
OPT	-0.277	0.510	0.527	-0.143	0.406	0.273	0.912			
RLB	-0.177	0.537	0.337	-0.336	0.482	0.702	0.296	0.859		
STF	-0.179	0.586	0.332	-0.278	0.487	0.804	0.4 10	0.794	0.909	
SYU	-0.165	0.557	0.349	-0.287	0.580	0.635	0.353	0.724	0.748	0.879

Table 5. Inner VIF values

EFC	LRN	MMR	RLB	STF	SYU
1.764	1.764	1.764	1.764	1.764	
					1.685
1.408	1.408	1.408	1.408	1.408	
1.678	1.678	1.678	1.678	1.678	
					1.469
					2.933
1.451	1.451	1.451	1.451	1.451	
					2.894
					4.261

Table 6. f-Square

	EFC	LRN	MMR	RLB	STF	SYU
DCF	0.020	0.016	0.001	0.015	0.010	
EFC						0.010
INV	0.225	0.015	0.036	0.040	0.016	
ISC	0.081	0.030	0.014	0.101	0.062	
LRN						0.101
MMR						0.000
OPT	0.105	0.071	0.014	0.027	0.101	
RLB						0.076
STF						0.092
SYU						

Table 7. Construct cross-validated redundancy

	SSO	SSE	Q^2 (=1-SSE/SSO)
DCF	356.000	356.000	
EFC	267.000	175.130	0.344
INV	445.000	445.000	
ISC	267.000	267.000	
LRN	178.000	153.236	0.139
MMR	267.000	244.785	0.083
OPT	356.000	356.000	
RLB	356.000	312.292	0.123
STF	356.000	297.046	0.166
SYU	445.000	246.650	0.446

Table 8. Assessment the significance of path coefficients

	Original Sample	Sample Mean	Standard Deviation	T Statistics	P Values	Results
DCF -> EFC	0.138	0.124	0.127	1.082	0.280	Not Significant
DCF -> LRN	-0.144	-0.157	0.130	1.106	0.269	Not Significant
DCF -> MMR	-0.040	-0.057	0.170	0.235	0.814	Not Significant
DCF -> RLB	0.146	0.127	0.144	1.013	0.311	Not Significant
DCF -> STF	0.119	0.108	0.145	0.820	0.413	Not Significant
EFC -> SYU	0.078	0.090	0.104	0.747	0.455	Not Significant
INV -> EFC	0.417	0.414	0.111	3.774	0.000	Significant
INV -> LRN	0.123	0.122	0.117	1.057	0.291	Not Significant
INV -> MMR	0.209	0.205	0.156	1.344	0.180	Not Significant
INV -> RLB	0.210	0.204	0.113	1.854	0.064	Not Significant
INV -> STF	0.130	0.124	0.126	1.027	0.305	Not Significant
ISC -> EFC	-0.274	-0.266	0.113	2.417	0.016	Significant
ISC -> LRN	-0.193	-0.194	0.105	1.833	0.067	Not Significant
ISC -> MMR	-0.140	-0.130	0.159	0.883	0.378	Not Significant
ISC -> RLB	-0.364	-0.356	0.134	2.718	0.007	Significant
ISC -> STF	-0.281	-0.281	0.138	2.034	0.042	Significant
LRN -> SYU	0.227	0.211	0.138	1.643	0.101	Not Significant
MMR -> SYU	0.008	0.013	0.172	0.044	0.965	Not Significant
OPT -> EFC	0.289	0.287	0.110	2.625	0.009	Significant
OPT -> LRN	0.273	0.272	0.137	1.995	0.047	Significant
OPT -> MMR	0.132	0.138	0.129	1.019	0.309	Not Significant
OPT -> RLB	0.174	0.176	0.107	1.624	0.105	Not Significant
OPT -> STF	0.335	0.337	0.116	2.897	0.004	Significant
RLB -> SYU	0.276	0.291	0.124	2.214	0.027	Significant
STF -> SYU	0.368	0.346	0.257	1.429	0.153	Not Significant

5. CONCLUSION

Based on the results of filling in respondents' profiles, there were 52% stating that readiness had an effect on usability and 44% said it was very influential. The results of the statistical analysis state that in terms of readiness and usability of the use of IS there are significant results regarding the factors that influence. Innovation affects efficiency, insecurity affects efficiency, insecurity affects reliability, insecurity affects satisfaction, optimism influences efficiency, optimism affects learning ability, optimism affects satisfaction, and reliability affects the usefulness of the system. Regarding other factors that were stated to be insignificant, it would be noted for further research, given the profile of respondents that could influence the results. For those interested in using IS topics, the main attraction is to further develop and measure further, so that the best systems are formed. It should be a very big concern about the sample used in this study, given that the sample is only used in institutions that have solid activity in the use of IS, it is better for other researchers to try to implement the measurement model that has been built including questionnaires in various institutions in the regions different.

REFERENCES

[1] Schwab K., "The fourth industrial revolution," Crown Business; 2017.
[2] Dawson M., Walker D., Cleveland S., "Systems Usability in Developing Countries: Case of Computing Use in Guinea," *International Journal of ICT Research in Africa the Middle East*, vol. 8, no. 1, pp. 31-40, 2019.
[3] Yuniarto D., Subiyakto A., Firmansyah E., Herdiana D., Suryadi M., Rahman A. A., "Integrating the Readiness and Usability Models for Assessing the Information System Use," *2018 The 6th International Conference on Cyber and IT Service Management (CITSM)*, pp. 713-8, 2018.
[4] Ventayen R. J. M., Estira K. L. A., De Guzman M. J., Cabaluna C. M., Espinosa N. N., "Usability Evaluation of Google Classroom: Basis for the Adaptation of GSuite E-Learning Platform," *Asia Pacific Journal of Education, Arts and Science*, vol. 5, no. 1, pp. 47-51, 2018.
[5] Joshi P., Akbari A., Svensson R. B., "Impact of Usability on Process Lead-Time in Information Systems: A Case Study," *Journal of Systems Software Development Times*, vol. 148, pp. 148-169, 2018.
[6] Parasuraman A., Colby C. L., "An Updated and Streamlined Technology Readiness Index: TRI 2.0," *Journal of Service Research*, vol. 18, no. 1, pp. 59-74, 2015.
[7] Irfan M., Putra S. J., Alam C. N., Subiyakto A., Wahana A., "Readiness Factors for Information System Strategic Planning among Universities in Developing Countries: a Systematic Review," *Journal of Physics: Conference Series*, 2018.
[8] Afrizal S., Hakiem N., Sensuse D. I., "Analysis of the Readiness of e-Government Implementation at the Ministerial Level of the Republic of Indonesia," *International Conference on Business and Management Research*, pp. 501-11, 2017.
[9] Subiyakto A., "Development of the Readiness and Success Model for Assessing the Information System Integration," *The 2nd International Conference on Science and Technology (ICOSAT)*, pp. 1-10, 2017.
[10] van Keulen H., Asseng S., "Simulation models as tools for crop management," *Crop Science*, pp. 433-52, 2019.
[11] Peña Gangadharan S., Niklas J., "Decentering technology in discourse on discrimination," *Journal of Information, Communication Society*, vol. 22, no. 7, pp. 882-99, 2019.
[12] Baumann M. F., Brändle C., Coenen C., Zimmer-Merkle S., "Taking responsibility: a responsible research and innovation (RRI) perspective on insurance issues of semi-autonomous driving," *Journal of Transportation Research Part A: Policy Practice*, vol. 124, pp. 557-72, 2019.
[13] Tsichritzis D., "Office automation: concepts and tools," Springer Verlag, 1985.
[14] Junker H., Farzad T., "Towards Sustainability Information Systems," *Procedia Computer Science*, vol. 64, pp. 1130-9, 2015.
[15] Khodambashi S., Nytrø Ø., "Usability methods and evaluation criteria for published clinical guidelines on the web: A systematic literature review," *HCI International 2017–Posters' Extended Abstracts: 19th International Conference*, 2017.
[16] Janowski T., "Digital Government Evolution: from Transformation to Contextualization," *Government Information Quarterly*, vol. 32, no. 3, pp. 221-36, 2015.
[17] Bonczek R. H., Holsapple C. W., Whinston A. B., "Foundations of Decision Support Systems," *Academic Press*, 2014.
[18] Firmenich S., Garrido A., Grigera J., Rivero J. M., Rossi G., "Usability improvement through A/B testing and refactoring," *Software Quality Journal*, vol. 27, pp. 203-240, 2019.
[19] Wenfei H., "Research on Design Methods of Interactive Extinguisher Product Based on Usability Theory, *International Conference on Biomedical Engineering, Machinery and Earth Science (BEMES 2018)*, 2018.
[20] Smith M., Walford N. S., Jimenez-Bescos C., "Assessing the User Response to Differences in Functionality When Visualizing 3D Models of Cultural Heritage Sites Using the Technology Readiness Index," *Digital Applications in Archaeology Cultural Heritage*, Vol. 10, pp. e00076, 2018.
[21] Mufti Y., Niazi M., Alshayeb M., Mahmood S. "A Readiness Model for Security Requirements Engineering," *IEEE Access*, vol. 6, pp. 28611-28631, 2018.
[22] Akdil K. Y., Ustundag A., Cevikcan E., "Maturity and Readiness Model for Industry 4.0 Strategy," *I*ndustry 40: Managing The Digital Transformation: Springer Series in Advanced Manufacturing, 2018.

[23] Bilozor A., Renigier-Bilozor M., Cellmer R., "Assessment Procedure of Suburban Land Attractiveness and Usability for Housing," *Baltic Geodetic Congress (BGC Geomatics),* 2018.
[24] Boulange C., Pettit C., Gunn L. D., Giles-Corti B., Badland H., "Improving planning analysis and decision making: The development and application of a Walkability Planning Support System," *Journal of Transfort Geography*, vol. 69, pp. 129-37, 2018.
[25] Fomin O., Akimova A., Akimova J., Mastepan A., "The criteria choice of evaluating the effectiveness of the process and automatic control systems," *Journal Procedia Computer Science*, vol. 149, pp. 246-51, 2019.
[26] Ibrahim M., El-Zaart A., Adams C., "Smart sustainable cities roadmap: Readiness for transformation towards urban sustainability," *Journal Sustainable Cities Society*, vol. 37, pp. 530-40, 2018.
[27] Kang A. S., Jayaraman K., Soh K. L., Wong W. P., "Convenience, flexible service, and commute impedance as the predictors of drivers' intention to switch and behavioral readiness to use public transport," *Journal of Transportation Research Part F: Traffic Psychology Behaviour*, vol. 62, pp. 505-19, 2019.
[28] Nielsen J., "Usability Metrics," *Nielsen Norman Group logoNielsen Norman Group*, 2017.
[29] Nielsen J., "Usability 101: Introduction to Usability," *Nielsen norman group*. 2016.
[30] Subiyakto A., "Development of the Readiness and Success Model for Assessing the Information System Integration," *The 2nd International Conference on Science and Technology (ICOSAT)*, 2017.
[31] Subiyakto A., Ahlan A. R., Kartiwi M., Putra S. J., "Measurement of the information system project success of the higher education institutions in Indonesia: a pilot study," *Journal of Business Information System*, vol. 23, no. 2, pp. 229-47, 2016.
[32] Subiyakto A., Rosalina R., Utami M. C., Kumaladewi N., Putra S. J., "The Psychometric and Interpretative Analyses for Assessing the End-User Computing Satisfaction Questionnaire," *5th International Conference on Information Technology for Cyber and IT Service Management (CITSM)*,2017.
[33] Subiyakto A., Abd Ahlan R., Kartiwi M., Hakiem N., Huda M. Q., Susanto A., "The Information System Project Profiles among Universities in Indonesia," *TELKOMNIKA Indonesian Journal of Electrical Engineering*, vol. 12, no. 2, pp. 865-72, 2018.
[34] Barasa L., Vermeulen P., Knoben J., Kinyanjui B., Kimuyu P., "Innovation inputs and efficiency: manufacturing firms in Sub-Saharan Africa," *European Journal of Innovation Management*, vol. 22, no. 1, pp. 59-83, 2019.
[35] Cook K. A., Romi A. M., Sánchez D., Sánchez J. M., "The influence of corporate social responsibility n investment efficiency and innovation," *Journal of Business Finance Accounting*, vol. 46, no. 3-4, pp. 494-537, 2019.
[36] Kim Y. J., Brown M., "Impact of domestic energy-efficiency policies on foreign innovation: The case of lighting technologies," *Journal of Energy Policy*, vol. 128, pp. 539-52, 2019.
[37] Leung L., Chen C., "E-health/m-health adoption and lifestyle improvements: Exploring the roles of technology readiness, the expectation-confirmation model, and health-related information activities," *Telecommunications Policy*, vol. 43, no. 6, pp. 563-575, 2019.
[38] Li M., "Usability Problems and Obstacles to Addressing Them in Health Information Software Implementations," *International Conference on Social Implications of Computers in Developing Countries*, 2019.