

Acceptance of Ubiquitous Registration Information Systems

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Abstract—Acceptance of information systems is very obvious in the continuity of its use, especially an organization when implementing information systems requires no short time and no small cost. This research aims to find out what factors influence the acceptance of the use of ubiquitous registration information systems in rural areas. The research model used is a technology acceptance model. The research method used three stages consisting of a literature review, operationalization, and reporting. The results that have been obtained from this study are the attitude towards use has a significant effect on the intention to be used, the perception of ease of use has a significant effect on attitude towards use, and the perception of ease of use has a significant effect on the perception of usefulness. The results of this study are expected to provide input to related parties, especially decision-makers in the development and application of an information system.

Keywords—acceptance, registration, information systems, rural areas

I. INTRODUCTION

Information Systems (IS) has been widely applied to several organizations and institutions both government and private. The application and use of IS in an organization or institution are inseparable from the goal to help facilitate work in the hope of reducing time and costs [1, 2]. Facilitating employees with IS according to several studies can improve performance and impact on organizational or institutional improvement or development [3-5].

Some institutions that are directly related to service activities to the public are very obliged to implement policies regarding the use of IS. The number of people and a large number of activities into consideration the need for the application of IS [6-9]. Ubiquitous IS becomes the right solution in providing services with a large number of users [10, 11], however, it is different from what happens to several organizations that implement ubiquitous IS for the need for outpatient registration which in practice creates a lot of problems. The socialization which is not an issue is not accepted by the public by the application of the IS, especially the socialization carried out on social media [12-14], whereas most people do not do activities on social media. In contrast to some people who are accustomed to activities on social media and their daily needs, ubiquitous IS are felt to help meet their needs [10, 12, 15-17]. In terms of behavior regarding the use of an IS, especially implemented in an institution that provides services to the community, it is necessary to study the efficiency and effectiveness of its application, considering changing user habits requires a long time of adaptation especially when the application involves diverse communities [9, 15-19]. Gaps in the use of IS that arise are about the skills possessed by users, some are accustomed to using IS and some are not accustomed to so that the development of an institution's services are usually

largely influenced by community factors as users or served [16, 19]. The emergence of a lack of socialization or other similar things is easy to be used as a scapegoat when the user is not ready. The institutional goal initially to maximize services was not achieved and eventually became a stigma in the eyes of the public or users.

Based on the problems described above, the researcher considers that the hardware and software problem is no longer a central issue but rather a user problem that needs to be examined in the form of this research. Research in the field of computer science and IS has a lot to discuss hardware and software [20, 21], while those who discuss the users are still relatively few [25].

The purpose of this study is to determine what factors influence the acceptance of the use of ubiquitous registration IS in rural areas in the hope of providing input to related parties. The researcher starts this research with the problem identification stage which is supported by several previous research references and then determines the model used to determine the influential factors. In this study, researchers used a technology acceptance model [22].

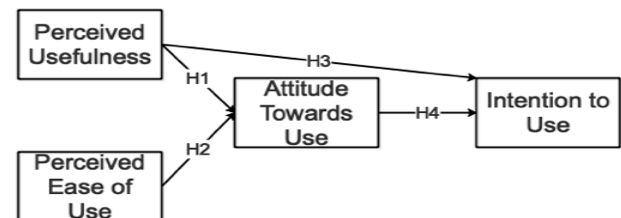


Fig. 1. Research model.

From some of the Technology Acceptance Model (TAM) variables, researchers down to indicators which are then made into a question for a questionnaire distributed to several respondents. The results of the distribution of the questionnaire were analyzed statistically which was then discussed and made conclusions, finally made a research report.

From figure 1 regarding the research model, the researcher determines the research hypothesis as follows.

H1. Presumably, perceived usefulness has a significant effect on attitude towards use in the use of ubiquitous registration IS.

H2. It is suspected that perceived ease of use has a significant effect on the use in the use of ubiquitous registration IS

H3. Presumably, perceived usefulness has a significant effect on the intention to use in using ubiquitous registration IS

H4. It is suspected that the attitude towards use significantly influences the intention to use in the use of a ubiquitous registration IS

II. LITERATURE REVIEW

Venkatesh believes that the use of information technology in a company can help in terms of its employees [10, 12, 23-25]. The use of information technology can facilitate work more effectively and efficiently [3-5]. TAM is a model used to measure acceptance of the use of technology in terms of the successful use of information technology that is applied to a company to achieve its objectives [22]. Venkatesh said that the use of IS will be influenced by the variable usefulness also ease of use variables, both of which have high determinants and validity that have been empirically tested [26]. TAM is the development of psychological theories that explain the behavior of users of information technology and is the result of the adoption of the Theory of Reasoned Action (TRA) [27] which provides an overview of the behavior of the use of information technology [27].

For investigations into the use of an application, the factors behind low acceptance and purpose are required to empirically explore the acceptance of an application with the proposed and established TAM model [28]. Some say that perceived usability and perceived ease of use are directly relevant predictors of an application's intention to use, whereas device efficiency and behaviors are factors influencing an application's intended use. In their design and development, the results help direct successful decisions [29]. Besides, in the resource allocation process, the findings can be used to ensure the success of the vision and mission of the organization. As a theoretical research context, and expanded technology adoption model has been used in other studies [30]. By integrating three new constructs: personal innovation, environmental awareness, and perceived danger, the findings show that personal innovation, environmental awareness, and perceived usefulness are positively related to user intentions to use ride-sharing services, whereas purpose and perceived usefulness are negatively related to the perceived danger [31-34]. There are results from another study that shows that the intention to use the services of an application is a function of perceived ease of use, technology anxiety, social influence, perceived ease of use, trustworthiness, facilitation conditions, perceived risk, and resistance to technology [28-34]. His research study confirms the application of TAM by the inclusion of additional variables to model service adoption [34].

TAM is a guide in the study of users [16, 19] in using information technology from various views [22] both user behavior in the acceptance and use of IS [26] and to find influential factors [16, 19] and become a major role in information technology user behavior towards trust, attitudes, and information technology goals. TAM is expected to explain the acceptance of information technology users [20, 21].

III. RESEARCH METHOD

This research is a quantitative study based on data processing [35]. To get an accurate measurement of the user needs to be done several steps as in figure 2 regarding the research method. This research begins with the stages of problem identification supported by library study activities followed by determining the research program and determining the models and theories used. At the stage of

operationalization, researchers determine the research instruments and prepare questionnaires and distribute them. The questionnaire was distributed as a sample of 70 respondents and the results were processed to find out the factors that significantly influence the ubiquitous IS acceptance in rural areas. The distribution of questionnaires in rural areas found several obstacles, including that there were still many respondents who were not accustomed to filling out the Google Form, while institutional respondents had to fill in it. Finally, researchers made report writing [35]. The sample of respondents is distributed to 32% of government institutions that provide services and 68% of the community (Table I).

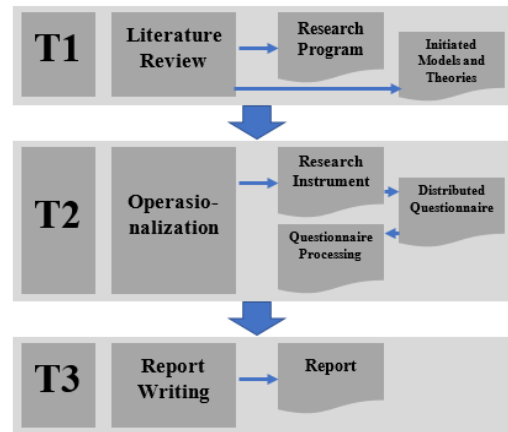


Fig. 2. Research method. [35]

TABLE I. PROFILE RESPONDENTS

Measures	Items	Q	%
Education	High School	49	70
	Diploma	11	16
	Bachelor	9	13
	Master	1	1
Position	Top Manager	1	1
	Staff	21	30
	General Public	48	69
Experience IT	< 2 years	59	84
	2-5 years	4	6
	5-10 years	4	6
	> 10 years	3	4

IV. RESULTS AND DISCUSSION

For quantitative analysis, alternative answers are given a score of one to five, which shows a very positive extreme with a score of five and a very negative extreme given a score of one or vice versa depending on the type of statement tested (positive or negative), 1 = very not supported, 2 = not supported, 3 = unknow, 4 = supportive, and 5 = very support.

The validity test results obtained as follows:

TABLE II. RESULTS OF PU VALIDITY AND RELIABILITY TEST

Item	r value	r table	Desc.	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PU1	0.761	0,235	Valid	17.8429	1.062	.523	.179
PU2	0.682	0,235	Valid	17.6286	1.164	.397	.284
PU3	0.367	0,235	Valid	17.7429	1.585	-.006	.571
PU4	0.604	0,235	Valid	17.6857	1.262	.281	.374
PU5	0.378	0,235	Valid	18.0143	1.580	.078	.498

From Table II, the validity test results for the Perceived Usefulness of all items are valid because the calculated r-value exceeds the r-table value. The results of the reliability test Table II shows that the five items above exceed the value of r table (0.235) so that it can be said to be reliable, only 1 item PU1 is not reliable.

TABLE III. RESULTS OF PEU VALIDITY AND RELIABILITY TEST

Item	r value	r table	Desc.	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PEU1	0.701	0,235	Valid	16.9143	1.123	.427	.509
PEU2	0.295	0,235	Valid	17.1286	1.650	.014	.695
PEU3	0.663	0,235	Valid	17.0143	1.203	.398	.527
PEU4	0.839	0,235	Valid	16.9857	.971	.670	.350
PEU5	0.551	0,235	Valid	17.1571	1.410	.327	.567

Based on Table III, the validity test results for the Perceived Ease of Use of all items are valid because the calculated r-value exceeds the r-table value. The results of the reliability test Table III show that the five items above exceed the value of r table (0.235) so it can be said to be reliable.

TABLE IV. RESULTS OF ATU VALIDITY RELIABILITY TEST

Item	r value	r table	Desc	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ATU1	0.905	0,235	Valid	16.4857	1.703	.852	.972
ATU2	0.954	0,235	Valid	16.4571	1.672	.927	.960
ATU3	0.954	0,235	Valid	16.4571	1.672	.927	.960
ATU4	0.992	0,235	Valid	16.4714	1.673	.987	.951
ATU5	0.925	0,235	Valid	16.4714	1.644	.879	.968

Based on Table IV, the validity test results for Attitude Towards Use are all valid items because the calculated r-value exceed the r-table value. The results of the reliability test Table IV show that the five items above exceeds the value of r-table (0.235) so it can be said to be reliable.

TABLE V. RESULTS OF ITU VALIDITY AND RELIABILITY TEST

Item	r value	r table	Desc	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
ITU1	0.872	0,235	Valid	16.4857	1.703	.852	.972
ITU2	0.914	0,235	Valid	16.4571	1.672	.927	.960
ITU3	0.905	0,235	Valid	16.4571	1.672	.927	.960
ITU4	0.960	0,235	Valid	16.4714	1.673	.987	.951
ITU5	0.759	0,235	Valid	16.4714	1.644	.879	.968

Based on Table V, the validity test results for Intention to Use all items are valid because the calculated r-value exceed the r-table value. The results of the reliability test Table V show that the five items above exceeds the value of r-table (0.235) so it can be said to be reliable.

TABLE VI. QUESTIONNAIRE QUESTIONS

No.	Indicators	Questionnaire Questions
1	PU1-Speed	Registration through the ubiquitous IS is faster
2	PU2-Effective	Registration through ubiquitous IS is more effective
3	PU3-Productive	Registration through ubiquitous IS is more productive
4	PU4-Performance	Registration through a ubiquitous IS improves performance
5	PU5-Useful	Registration through a ubiquitous IS is useful

6	PEU1-Easy to learn	Registration through a ubiquitous IS is easy to learn
7	PEU2-Easy to understand	Registration through a ubiquitous IS is easy to understand
8	PEU3-As expected	Registration through the ubiquitous IS as expected
9	PEU4-Easy interaction	Registration through a ubiquitous IS facilitates interaction
10	PEU5-Very easy	Registration through the ubiquitous IS as a whole is very easy to use
11	ATU1-Convenience	Registration through ubiquitous IS is convenient
12	ATU2-Satisfaction	Registration through the ubiquitous IS is satisfied
13	ATU3-Interesting	Registration through a ubiquitous IS is not boring
14	ATU4-Simplicity	Registration through a simple ubiquitous IS
15	ATU5-Fun	Ubiquitous registration is preferable for use
16	ITU1-Requirement	I will always use the ubiquitous registration system if necessary
17	ITU2-Opportunity	Registration through the ubiquitous IS will always be used when I have the opportunity
18	ITU3-Trust	Registration through the ubiquitous IS will always be used by me in the future
19	ITU4-Priority	Registration through a ubiquitous IS is always a priority
20	ITU5-Sustainability	Registration through the ubiquitous IS will always be used by me

After distributing the questionnaire (Table VI), the author scored the results of the questionnaire to find out what factors were considered useful and should be improved. The following are the results of the questionnaire scoring:

TABLE VII. PU SCORING

Indicators	%
PU1-Speed	87.71
PU2-Effective	92.00
PU3-Productive	89.71
PU4-Performance	90.86
PU5-Useful	84.29

Based on the perceived usefulness questionnaire results on table VII obtained the highest score of 92% is related to Effective in this case respondents assume that registration through a ubiquitous IS is considered effective, then the lowest score related to Useful.

TABLE VIII. PEU SCORING

Indicators	%
PEU1-Easy to learn	87.71
PEU2-Easy to understand	83.43
PEU3-As expected	85.71
PEU4-Easy interaction	86.29
PEU5-Very easy	82.86

Based on the results of the PEU questionnaire perception of ease of use (Table VIII), the highest score of 87.71% is related to Easy to learn, in this case, respondents assume that registration through a ubiquitous IS is considered easy to learn, then the lowest score related Very Easy.

TABLE IX. ATU SCORING

Indicators	%
ATU1-Convenience	82.00
ATU2-Satisfaction	82.57
ATU3-Interesting	82.57
ATU4-Simplicity	82.29
ATU5-Fun	82.29

Based on the results of the scoring questionnaire attitude towards use (Table IX), the highest score obtained by 82.57% is related to Satisfaction and Interesting in this case, respondents assume that registration through a ubiquitous IS is considered to provide satisfaction and interest, then the lowest score related to Comfort.

TABLE X. ITU SCORING

Indicators	%
ITU1-Requirement	82.29
ITU2-Opportunity	82.57
ITU3-Trust	83.14
ITU4-Priority	82.86
ITU5-Sustainability	84.29

The results of the ITU questionnaire intention to use (Table X), the highest score of 84.29% is related to Sustainability, in this case, respondents assume that I will always use Registration through a ubiquitous IS, then the lowest score related to Needs.

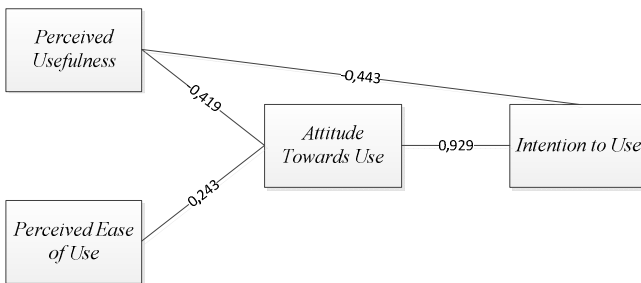


Fig. 3. Path analysis.

Based on the path analysis test results, it can be explained that PU contributes a path value to ATU of -0.419, then for PEU perceived usefulness contributes a path value to ATU of 0.243, PU contributes a path value to ITU of -0.444, and attitude towards use gives contribution of path value to ITU of 0.929 (Fig. 3.).

TABLE XI. CORRELATION COEFFICIENT OF PU AND PEU TO ATU

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.581 ^a	.337	.317	1.33065

a. Predictors: (Constant), Perceived_Ease_of_Use, Perceived_Usefulness

The test results, the coefficient of determination of PU and PEU on ATU (Table XI) is obtained (0.581) 2 or 33.75% while the remaining 66.25% is influenced by other variables outside the PU and PEU variables that are not included in the model.

TABLE XII. COEFFICIENT REGRESSION OF PU AND PEU ON ATU

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	25.471	5.174		4.923	.000
	Perceived_Usefulness	-.499	.137	-.419	-3.651	.001
	Perceived_Ease_of_Use	.292	.138	.243	2.118	.038

a. Dependent Variable: Attitude_Towards_Use

Table XII it can be explained that PU has a path value of -0.419 with a significance value of 0.001 smaller than the sig value of 0.05 so it can be said that perceived usefulness has a significant effect on attitude towards use in the use of ubiquitous registration IS, furthermore to PEU has a path value of 0.243 with a significance value of 0.038 less than the error level of 0.05 so it can be said that perceived ease of use has a significant effect on attitude towards use in the use of ubiquitous registration IS.

TABLE XIII. THE MULTIPLE REGRESSION COEFFICIENT OF PU-ATU

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	34.902	2.703		12.912	.000
	Perceived_Usefulness	-.644	.121	-.541	-5.306	.000

a. Dependent Variable: Attitude_Towards_Use

The regression coefficient table XIII, it can be explained that PU has a path value of -0.541 with a significance value of 0.000 less than the sig value of 0.05 so that it can be said that perceived usefulness has a significant effect on attitudes towards attitude towards use in the use of ubiquitous registration IS.

TABLE XIV. PEU MULTIPLE REGRESSION COEFFICIENT ON ATU

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	9.022	2.764		3.264	.002
	Perceived_Ease_of_Use	.543	.130	.453	4.192	.000

a. Dependent Variable: Attitude_Towards_Use

The regression coefficient XIV above, it can be explained that PU has a path value of -0.453 with a significance value of 0.000 less than the sig value of 0.05 so that it can be said that perceived ease of use has a significant effect on attitude towards use in the use of ubiquitous registration IS.

TABLE XV. THE COEFFICIENT OF MULTIPLE PU REGRESSION FOR ITU

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	32.741	2.944		11.121	.000
	Perceived_Usefulness	-.539	.132	-.443	-4.078	.000

a. Dependent Variable: Intention_to_Use

The regression coefficient table XV, it can be explained that PU has a channel value of -0.444 with a significance value of 0.000 less than the sig value of 0.05 so it can be said that perceived usefulness has a significant effect on the intention to use in the use of ubiquitous registration IS.

TABLE XVI. ATU'S MULTIPLE REGRESSION COEFFICIENT ON ITU

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.210	.945		1.280	.205
	Attitude_Towards_Use	.950	.046	.929	20.750	.000

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	1.210	.945		1.280	.205
Attitude Towards Use	.950	.046	.929	20.750	.000

a. Dependent Variable: Intention to Use

The regression coefficient table XVI it can be explained that the ATU has a path value of 0.929 with a significance value of 0.000 less than the sig value of 0.05 so that it can be said attitude towards use has a significant effect on the intention to use in the use of ubiquitous registration IS.

The results obtained from this study indicate that perceived usefulness has a significant effect on attitude towards use, perceived ease of use has a significant effect on use, perceived usefulness significantly influence the intention to use, and attitude towards use significantly influence the intention to use.

V. CONCLUSION

Based on the results of the analysis that has been done, it can be concluded that so far respondents have felt that registration through a ubiquitous IS has been considered effective when viewed from the perception of usefulness, easy to learn in terms of ease of use, feeling satisfied and interested in terms of use and need to follow up for sustainability use. The results of this study become material for study and comparison for other researchers, considering that they are applied to different objects and respondents who have different abilities, let alone applied in rural areas. The developer of the ubiquitous registration IS should pay attention to the results of this study as material for its implementation in the future.

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