Determinants of E-Government Implementation Based on Technology Acceptance Model

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Abstract

This study aims to examine Technology Acceptance Model (TAM) on the implementation of E-Government. Data for this study were collected through a questionnaire survey on the people of Malang City who have used E-Government services. Structural model analysis was performed using smartPLS. The results showed that intention was the main determinant of the use of E-Government services. The determining factor of intention to use E-Government services is positive attitude towards E-Government. Other factors such as system quality, its ease of use, and quality of information do not affect people's interest in using E-Government services. In other words, E-Government application developed by the City Government has been deemed not easy enough to be applied and not informative enough to meet the information needs of the community. This is a challenge for the City Government to be able to improve and develop the quality of systems and information from its E-Government services so that people are increasingly interested in applying it, for the realization of Malang as a smart city.

Determinan Implementasi E-Goverment Berdasarkan Model Penerimaan Teknologi

Abstrak

Penelitian ini bertujuan untuk mengkaji penggunaan Technology Acceptence Model pada implementasi E-Government. Data penelitian ini dikumpulkan menggunakan metode survei kuesioner pada masyarakat Kota Malang yang menggunakan layanan E-Government yang diberikan oleh Pemerintah Kota Malang. Analisis model struktural dilakukan dengan menggunakan smartPLS. Hasil penelitian menunjukkan bahwa niat adalah penentu utama digunakannya layanan E-Government oleh masyarakat. Faktor penentu dari niat untuk menggunakan layanan E-Government adalah sikap positif terhadap E-Government. Faktor lain seperti kualitas sistem, kualitas informasi maupun kemudahan penggunaan tidak mempengaruhi minat masyarakat untuk menggunakan layanan E-Government. Dengan kata lain, aplikasi E-Government yang dikembangkan oleh Pemerintah Kota Malang dinilai belum cukup mudah untuk diaplikasikan dan belum cukup informatif untuk memenuhi kebutuhan informasi masyarakat. Hal tersebut menjadi tantangan bagi Pemerintah Kota Malang untuk dapat meningkatkan dan mengembangkan kualitas sistem dan informasi dari layanan E-Government agar masyarakat semakin tertarik mengaplikasikannya, demi terwujudkannya Kota Malang sebagai smart city.

JEL Classification: H10, H11

INTRODUCTION

Industry 4.0 era emphasizes the integration of internet and big data utilization, also known as the internet of things (Rauf, 2018). In this era, the internet function has increased in line with the benefits provided to its users (Permana & Sudarno, 2013). Primarily, the internet is functioned as a data-miner to collect various data which is then processed into useful information for its users (Rauf, 2018). Internet-based services include e-service, e-banking, e-commerce, e-ticketing, and E-Government.

E-Government is an internet-based service developed by the government in Indonesia. The focus on the development of E-Government has been carried out since the Presidential Instruction of the Republic of Indonesia No. 6 of 2001 (concerning Telecommunications, Media and Information) and Presidential Instruction No. 3 of 2003 (concerning National Policy and Strategy for E-Government Development). According to these regulations, the government shall utilize information technology advancements to improve the ability to process, manage, and distribute information as well as services to the public. It is also expected that the efficiency and access to public services can increase. Those services include government to government, government to the economy, government to citizen, and also government to business services. Thus, government services can be more extensive and fairly distributed (Syafruddin & Purwidyasari, 2017).

In addition, there are several factors inhibiting the implementation of E-Government and smart city (Subekti & Gustomy, 2018) which include the lack of full involvement of government leaders, the need for large funding, the lack of maintenance of E-Government applications that have been made, and the quantity and quality of human resources who understand the IT field are still low. Therefore, the public's enthusiasm when using the E-Government applications is not balanced with the government apparatus that operates it which slows down information processing.

Some obstacles (Subekti & Gustomy, 2018) above are in line with several factors causing the failure of E-Government according to (Hartono, 2007; Windharta, 2011; Permana & Sudarno, 2013). First, the governments in some countries tend not to conduct activities online. Second, the lack of human resources skills, supporting facilities, and infrastructure. Third, the inattentiveness of those directly involved. Fourth, poor technical quality. Fifth, the rejection factor from humans as the main users of technology. Therefore, it is important to be known that psychologically, humans have particular behaviour which cause them to do action, including the behaviour of utilizing E-Government.

The United Nations (UN) publication on the E-Government Development Index (EGDI) shows that Indonesia's EGDI is up to 107th position compared to 2016 which was on 116th. Indonesia ranks 7th in the ASEAN region with an average score of 0.5555, which is still below the ASEAN regional average of 0.5258. The top five countries across the world are Denmark, Australia, the Republic of Korea, United Kingdom, and Sweden. In the ASEAN region, the countries that hold upper positions are Singapore, Malaysia, Brunei Darussalam, Thailand, Philippines, and Vietnam (Widowati, 2018). Based on that publication, it can be understood that although Indonesia got an increase in the EGDI score, the actual implementation of E-Government is still needed. Therefore, it is necessary to identify the cause of the lack of E-Government optimization in Indonesia compared to other countries.

This research replicates and develops the Technology Acceptance Model (Al-Somali et al., 2008; Al Shibly & Tadros, 2010; Permana & Sudarno, 2013). The main purpose of this study is to predict, analyze and provide empirical evidence about factors that influence users to accept and use E-Government in Malang. The Government of Malang City focuses on realizing smart city, including improving its services using E-Government (Subekti & Gustomy, 2018). The development of smart city has been halted due to some local issues such as increa-

sing population density which raises a number of complex problems such as traffic congestion, environmental problems, and other economic and social problems (Subekti & Gustomy, 2018).

The results of this study are expected to contribute to overcoming current weaknesses and optimizing the implementation of E-Government. Human behaviour can be influenced by four factors, namely cultural, social, personal, and psychological factors (Marhaini, 2008). Research on behavioural intention can produce information about the behaviour of acceptance or rejection of technology use (Taylor & Todd, 1995; Shih & Fang, 2004; Lin, 2007; Neufeld et al., 2007). Through this information, it can be seen whether the developed information technology was successful in its implementation. Technology Acceptance Model (TAM) is one of the theoretical models that can be used to predict intention in individual behaviour.

Technology Acceptance Model (TAM) was introduced by Davis (1989). Some of the advantages of TAM are, 1) it can measure the acceptance level of technology user, 2) research models are widely used to predict the acceptance and use of information systems (Cheng et al., 2006), 3) it can explain the technology acceptance model well so that it is widely used in various studies on the acceptance of informa-

tion systems and the adoption of information technology (Al-Somali et al., 2008), and 4) in some studies, TAM can explain behaviour better than other theories such as Theory of Reasoned Action or Theory of Planned Behaviour. Based on these advantages, this study has a novelty, namely TAM as a research model is used to predict the acceptance and use of E-Government in Indonesia.

Hypothesis Development
The Effect of Perceived Usefulness on Attitude in Using E-Government

The research model is illustrated in Figure 1. Perceived usefulness is a perception of individual belief that by using technology they will be able to improve their performance. A system is useful when it can affect productivity, task performance, effectiveness, and other functions as a whole (Kusuma & Susilowati, 2007). Perceived usefulness focuses on the adoption of technological functions to improve performance and productivity (Ramadhani, 2008).

The results of several previous studies conclude that perceived usefulness has a positive and significant effect on the attitude of technology use (Cheng et al., 2006; Al-Somali et al., 2008; Ramadhani, 2008; Permana & Sudarno, 2013). However, several studies conclude the opposite (Kusuma & Susilowati, 2007; Al
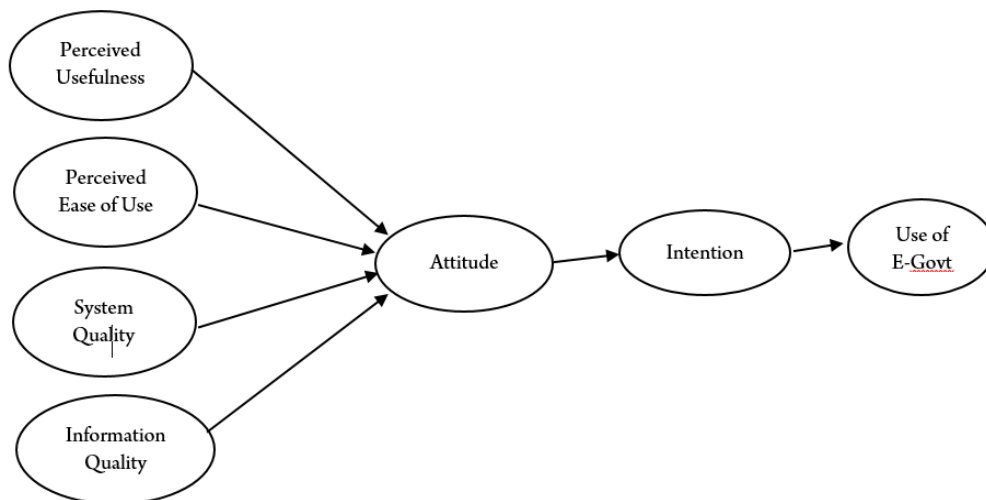

Figure 1. Research Model

Shibly & Tadros, 2010; Artha, 2011). Based on those, it is hypothesised that:

H1: Perceived usefulness affects the attitude of using E-Government.

The Effect of Perceived Ease of Use on Attitude in Using E-Government

Perceived ease of use is an individual's belief that the use of technology will be easy and free from excessive effort. When an individual believes that a tech-product is easy to be used, they will use it. Ease of use can also be shown from the intensity and interaction between the user and the system (Kusuma & Susilowati, 2007). When a tech-product is often used, it shows that the system is more user-friendly. In addition, the perceived ease of use also indicates that the technology is designed to facilitate the user so that the user can complete their work optimally, instead of complicating it.

The results of several previous studies concluded that perceived ease of use has a positive and significant effect on the attitude of technology use (Kusuma & Susilowati, 2007; Al-Somali et al., 2008; Ramadhani, 2008; Al Shibly & Tadros, 2010; Permana & Sudarno, 2013). However, there are several studies that show different results, (Cheng et al., 2006; Artha, 2011). Based on those, it is hypothesised that:

H2: Perceived ease of use affects the attitude in using E-Government.

The Effect of System Quality on Attitude in Using E-Government

The quality of the system and the quality of information, both individually and collectively, affect the satisfaction of users of information technology (DeLone & McLean, 2003). System quality refers to the technical details of the information system interface (Permana & Sudarno, 2013). There is a relationship between technology or system quality and user satisfaction. For example, if a technology produces information that is reliable and relevant, it can improve the performance of its users. When users are satisfied, they tend to continue their use and re-

commend the technology to other users. Thus, the quality of the system, both directly and indirectly, can have a positive influence on the use of information technology, in this case especially on E-Government.

System quality has a dominant influence on E-Government acceptance (Al Shibly & Tadros, 2010). The better the quality of existing systems in E-Government facilities, the more likely the user will accept the use of E-Government. However, that study result contradicts Permana and Sudarno (2013) who concluded that the quality of the system at the E-Government facilities in the Directorate General of Treasury does not significantly influence users to use E-Government facilities. Users tend to access E-Government facilities because of the task requirement and function of the work concerned, not because of the good system quality. Based on that, it is hypothesised that:

H3: System quality affects the attitude in using E-Government.

The Effect of Information Quality on Attitude in Using E-Government

Information quality is interpreted as how useful the produced and accessed information from an information technology product is. Information quality can determine the success of a website design (Permana & Sudarno, 2013). Information quality has a positive effect on perceived usefulness, perceived ease of use, and acceptance of use of e-shopping facilities (Shih, 2003). Furthermore, Al Shibly and Tadros (2010) concluded that information quality has a significant influence on E-Government acceptance. So, the better the quality of information provided by the E-Government facility, the higher the user acceptance of the E-Government facility. However, inconsistent results were found (Permana & Sudarno, 2013). In their study, it was concluded that the quality of information on E-Government facilities within the Directorate General of Treasury does not significantly influence the use of E-Government facilities. Employees have no choice in carrying out their duties and

responsibilities other than by accessing E-Government. Hence, without assessing whether the quality of information produced is good or not, employees of the Directorate General of the Treasury will continue to use E-Government facilities. Based on the explanation above, it is hypothesised that:

H4: Information quality affects the attitude in using E-Government.

The Effect of Attitude on Intention for Using E-Government

Attitude is a positive or negative feeling from someone when they have to do a certain behaviour and as an evaluation material of intention when using information technology (Davis, 1989). Attitude is the sum of feelings by someone to be able to accept or reject an object or behaviour measured using a procedure that places individuals on a two-side basis such as good or bad, agree or reject, willing or unwilling, and so on (Hartono, 2007). In addition, Attitude has a positive effect on behavioural intention, but there are also several studies that show the opposite.

Factors that influence the use of internet banking using the TAM theory in Saudi Arabia shows that there is a significant relationship between the attitudes of use with the intention in using internet banking (Al-Somali et al., 2008). Some other studies that conclude the same results include (Cheng et al., 2006; Nor & Pearson, 2007; Nazar & Syahran, 2008). Based on the explanation above, it is hypothesised that:

H5: Attitude affects the intention for using E-Government.

The Effect of Intention on the Use of E-Government

Behavioural intention is a source of motivation that encourages a person to do what someone wants when that he/she has freedom to choose, which is then used as a guideline for the implementation of activities in the future (Hurlock, 1993). Intention can arise when someone is free to do what that person wants. When someone judges that something will be beneficial for themselves, it can encourage the emergence of intention and satisfaction, and vice versa. Thus, intention in behaviour is temporary and can change.

The real behaviour of individuals arises due to behavioural intention (Hartono, 2007). Someone tends to do certain behaviours if that person has an intention to do so (Muntianah et al., 2012). The behaviour can be influenced by four factors, namely cultural, social, personal, and psychological factors. In the context of using E-Government, usage behaviour is the actual action of individuals in using E-Government services. People use this service because of their intention to use it, either because it is useful, easy to use, or is required to be used. Based on the explanation above, it is hypothesised that:

H6: Intention affects the use of E-Government.

METHOD

Sample and Data Collection

This research uses non probability sampling with purposive sampling. The population in this study are residents of Malang City while the sample is 112 people who live in Malang who have access and use E-Government facilities from the Malang Regional Government. E-Government in this study does not only focus on one type of service but also include all government services that are used online by people such as online taxes, online complaints, licensing services, etc.

Data were collected using a survey questionnaire. Subsequently, the following steps were taken: creating an online questionnaire using Google Docs, distributing the questionnaires online through online discussion forums and other intermediaries, regularly monitoring the answered questionnaire, and summarizing the results of the questionnaire obtained after one week since distribution.

Variable Measurement

There are seven variables in this study, namely perceived usefulness, perceived ease of use,

system quality, information quality, attitude, behavioural intention, and usage behaviour. The questionnaire was adopted from several previous studies (Shih & Fang, 2004; Lin, 2007; Al-Somali et al., 2008; Permana & Sudarno, 2013). The statement items are first translated into Indonesian and then adjusted to the E-Government context. Measurements of indicators in these variables use a five-point Likert scale.

Partial Least Square Regression (PLS)

Data processing is performed using Structural Equation Modelling (SEM) analysis tools. SEM is a statistical technique for testing and estimating causal relationships by integrating factor analysis and path analysis (Hartono, 2011). The SEM analysis technique used is Partial Least Square (PLS) with the help of the SmartPLS program ver. 2.0 M3 (Ringle et al., 2005). The reasons of the analysis using PLS are 1) to test the effect of partial hypothesis prediction and model hypothesis measured at the construct level or latent variable, 2) appropriateness of use in explanatory or expanding theories as well as studies that identify the main determinants or predict a certain construct, and 3) ability to explain the variance of the dependent variable measured with R^2.

RESULT AND DISCUSSION

Description of Research Object

Respondents in this study are the people of Malang who use E-Government. The number of replied questionnaires was 112. From those 112 responses, four were not used because the respondents did not have experience in using E-Government. Thus the number of responses that can be processed was 108 or 96% of the total replied questionnaires. The sample size of more than 30 and less than 500 is appropriate for most studies, and in multiple regression analysis studies the number of samples should be at least ten times greater than the number of variables in the study (Sekaran, 2006). This study has seven variables, so the minimum number of sample is 70 samples.

Evaluation of Research Models
Outer Model (Measurement Model Test)

Outer Model or Measurement Model Test aims to measure the validity and reliability of the model used in a research. This test is carried out through three stages of testing, namely testing of convergent validity, discriminant validity, and reliability.

Convergent Validity

This test is based on three parameters, namely AVE and Communality values which have to be more than 0.5 and Factor Loading values which has to be more than 0.7 (Table 1). The result test showed that the value of AVE and Communality for each variable are more than 0.5. However, there are three indicators that have factor loading value of less than 0.7. Thus, the convergent validity in this study has not been fulfilled. Indicators with loading values

Table 1. Alogaritm Table

	AVE	Composite Reliability	R. Square	Cronbach's Alpha	Communality
QI	.637680	.924704		.905820	.637680
QS	.762708	.927611		.896891	.762708
INT	.832107	.936844	.828727	.898133	.832107
BU	.855539	.922145	.851165	.831209	.855539
PU	.743587	.935258		.914130	.743587
PEU	.691460	.898860		.849524	.691460
AT	.819310	.964478	.676174	.955417	.819310

Notes: QI: Information Quality; QS: System Quality; INT: Intention; UEG: Use of E-Government; PU: Perceived Usefulness; PEU: Perceived Ease of Use; AT: Attitude

below 0.4 must be removed from the research model, while indicators with loading values between 0.4-0.7 should be analyzed in advance of the effects of its removal (Sholihin & Ratmono, 2013). If the AVE value and composite reliability can increase after removal, then the indicators with loading value 0.4-0.7 should be removed. Based on this opinion, data reprocessing is done by removing indicators that have factor loading value below 0.7, namely KS3, MP2, and S3. The results of the new processed data can be seen in Table 2.

The results of the latest data processing show that the value of AVE and Composite Reliability meet the threshold. In Table 2, the value of the overall factor loading indicator on

Table 2. Factor Loading (Cross Loading)

	QI	QS	INT	UEG	PU	PEU	ATT
QI1	.843162						
QI2	.826727						
QI3	.804152						
QI4	.761563						
QI5	.809443						
QI6	.704724						
QI7	.831198						
QS1		.935778					
QS2		.905556					
QS4		.831677					
QS5		.814515					
INT1			.935715				
INT3			.849165				
INT4			.948514				
UEG1				.928015			
UEG2				.921882			
PU1					.890658		
PU2					.857901		
PU3					.875847		
PU4					.762728		
PU5					.916410		
PEU1						.755609	
PEU2						.902495	
PEU3						.907405	
PEU4						.746334	
ATT1							.895595
ATT2							.91738
ATT4							.842752
ATT5							.887808
ATT6							.903694
ATT7							.978309

Notes: QI: Information Quality; QS: System Quality; INT: Intention; UEG: Use of E-Government; PU: Perceived Usefulness; PEU: Perceived Ease of Use; ATT: Attitude

each variable is more than 0.7. Thus, it can be concluded that the variables and indicators used in this study have met the convergent validity test.

Discriminant Validity

After convergent validity test, the next step is to conduct discriminant validity test. This test is based on two parameters, namely the value of the square root of AVE should be more than latent variable correlation and a cross loading value of more than 0.7 in one variable.

Inner Model Test (Structural Model)

Inner Model Test or testing of the structural model has two measurement parameters, namely the value of R^2 and the path coefficient.

Value of R^2

R^2 value is used to measure the percentage of variation in endogenous variables that can be explained by exogenous variables (Sholohin & Ratmono, 2013). Based on the data above, it can be seen that the R2 value of the attitude variable is 0.676 which means the percentage of

Table 3. Square Root of AVE and Latent Variable Correlation Table

	Root of AVE	QI	QS	INT	UEG	PU	PEU	ATT
QI	.79854868	1						
QS	.87333155	.800620	1					
INT	.91219899	.818401	.530984	1				
UEG	.92495351	.846791	.600096	.922586	1			
PU	.86231491	.644204	.357760	.702671	.717436	1		
PEU	.83154074	.891551	.751764	.772012	.801863	.567836	1	
ATT	.90515744	.754044	.556610	.910345	.879215	.728881	.704814	1

Notes: QI: Information Quality; QS: System Quality; INT: Intention; UEG: Use of E-Government; PU: Perceived Usefulness; PEU: Perceived Ease of Use; ATT: Attitude

Based on Table 3, the square root value of AVE is more than the correlation value of the latent variable in each variable. Thus it can be concluded that the variables and indicators in this study have met the discriminant validity test.

Reliability

There are two parameters in the reliability test, namely the value of Cronbach's alpha should be more than 0.6 and the composite reliability value should be more than 0.7. Based on the results of the processed data, the Cronbach alpha value is more than 0.6 and the composite reliability value is more than 0.7. Thus, it can be concluded that the data and the results of measurements made have met the reliability test thresholds. Based on the outer model test that has been done, the variables and indicators used in this study are considered to be valid and reliable.

perceived usefulness of the variable, perceived ease of use, quality information, system quality can explain the variable attitude by 68%, while the rest is explained by variables other than the four variables. The value of R^2 for the intention variable is 0.829, which means the percentage of attitude variable can explain the intention variable of 83%, while the rest is explained by other variables besides attitude variable. Finally, the R^2 value of the actual behavior variable is 0.851, which means the percentage of intention variable can explain the actual behavior variable by 85%, while the rest is explained by other variables besides the intention variable.

Path Coefficient

Path coefficient is the level of significance in hypothesis testing. In this study, if the path coefficient value indicated by the statistical value of t (t-statistic) is ≥ 1.96, the research hypothesis (Ha) is then accepted. However, if the

statistical value of t (t-statistic) is ≤ 1.96, the research hypothesis (Ha) is rejected. The t-statistic value in this study can be seen in the following Table 4. It can be concluded that based on the t-statistic value there are three hypothesis that were rejected because the t-statistic value is less or equal to 1.96. These three hypothesis are the second, third and fourth hypothesis.

tivity, and effectiveness while completing work (Permana & Sudarno, 2013). That perceived advantage or usefulness encourage employees to have positive attitude towards the use of E-Government.

The results of this study are also consistent with the results of studies conducted in different contexts, such as Lin (2007) research on per-

Table 4. Path Coefficient Value Table

	Original Sample	**t-statistics**	**Conclusion**
QI -> ATT	.299329	1.884850	H4 is rejected
QS -> ATT	.039839	.410097	H3 is rejected
INT -> UEG	.922586	32.573845	H6 is accepted
PU -> ATT	.428188	6.314915	H1 is accepted
PEU -> ATT	.164857	.928903	H2 is rejected
ATT -> INT	.910345	32.557346	H5 is accepted

Notes: QI: Information Quality; QS: System Quality; INT: Intention; UEG: Use of E-Government; PU: Perceived Usefulness; PEU: Perceived Ease of Use; ATT: Attitude

Discussion
The Effect of Perceived Usefulness on the Attitude of Using E-Government

Perceived usefulness is a belief of an individual that if the use of information technology is likely to improve performance , the individual will use it and if the individual feels otherwise, the individual will not use it (Hartono, 2007; Kusuma & Susilowati, 2017). The first (H1) in this study states that perceived usefulness affects the attitude of using E-Government. The test results show that the t-statistic value (6.314)> t-table value (1.96). Thus, H1 is accepted and it is concluded that perceived usefulness is one of the factors that determine the attitude of using E-Government services.

These results are consistent with some of the results from previous studies (Cheng et al., 2006; Lin, 2007; Al Somali et al., 2008; Ramadhani, 2008; Permana & Sudarno, 2013). A study of E-Government Perceptions in the employees of the Directorate General of Treasury concludes that the employees of the Directorate General of Treasury as users of e-government facilities feel that they receive some advantages, including performance improvement, produc-

ceived usefulness in the context of e-commerce use and the research of Cheng et al. (2006) and Al Somali et al. (2007) in the context of using internet banking. Thus it can be concluded that, perceived usefulness is one of the factors that influence the use of E-Government services by the community. When individuals believe that E-Government services can be useful in improving their performance, that individual will tend to be positive towards these services. When an individual has that positive tendency, the desire of the individual to continue the use of E-Government services will increase.

The Effect of Perceived Ease of Use on the Attitude of Using E-Government

While the perceived usefulness is more focused on the usefulness or benefits that can be obtained by its users, perceived ease of use is more focused on the level of individual confidence that the use of an information technology will be free from excessive effort. If information technology is easily applied, then individuals will be positive about the technology. However, if the individual feels that it is difficult to apply, then the individual will have a tendency to

be negative towards the technology (Hartono, 2007; Kusuma & Susilowati, 2007; Ramadhani, 2008). The second hypothesis (H2) in this study states that perceived ease of use affects the attitude of using E-Government. The test results show the *t*-statistic value of 0.929. Thus, H2 was rejected and concluded that perceived ease of use does not influence the attitude of using E-Government services.

This is consistent with the research (Cheng et al., 2006; Artha, 2011). Research by Cheng et al. (2006) is in the context of internet banking use, while Artha's (2011) study is in e-commerce use. These different contexts consistently provide empirical evidence that perceived ease of use does not affect the attitude of using information technology.

The cause of perceived ease of use had no effect on the attitude of using web-based academic information mostly because there is a force to use the system rather than the ease of that academic web service use (Wibowo, 2007). In other words, whether the web is easy or not to be utilized does not affect students' desire to use it. Likewise, Artha (2011) stated that the average respondent in that research had been using the internet for more than three years, so the respondents had no difficulty in using the internet and applying e-commerce services. Therefore, the use of e-commerce services is not based on its ease of use.

The perceived ease of use on the attitude of using E-Government found in this study can be due to two different reasons. First, respondents in this study have a good ability to use the devices and have also been using the internet for more than six years, so they found no difficulty in using e-government services. Second, according to the respondents, some online services based on e-government can save time in obtaining public services and e-government also gives access to the public so they can download the needed regional documents. In conclusion, respondents do not focus on whether or not the service is easy to use but rather on the necessary to use or benefits that can be received through E-Government services.

The Effect of System Quality on Attitude of Using E-Government

The quality of the system and provided information, both individually and collectively, can influence the users' satisfaction of information technology (DeLone & McLean, 2003). System quality refers to the technical details of the information system interface and the quality of the system that produces information (Permana & Sudarno, 2013). The third hypothesis (H3) in this study states that system quality influences the attitude of using E-Government. The test results show that the t-statistic value of 0.410 is less than the t-table value of 1.96. Thus H3 is rejected and it is concluded that the quality of the system is not a factor that affects the attitude of using E-Government services.

The results of this study are inconsistent with some research (DeLone & McLean, 2003; Al Shibly & Tadros, 2010), but it is are consistent with research (Permana & Sudarno, 2013), which also examines the quality of the system for the use of E-Government services. Employees of the Directorate General of Treasury tend to use E-Government as requirement for their tasks, not because the service is supported by a good system quality. The study did not classify respondents based on whether there is requirement for them to use E-Government facilities. However, the demand that the government must be able to convey information in an integrated manner has indirectly made its users feel well- facilitated by the existence of E-Government services. Those users are particularly people in business area who need speedy transaction and ease in obtaining license, people who are unwilling to queue to obtain information and government services, as well as people who need some government documents to conduct analysis and research. Although a good system quality will certainly be able to increase users of E-Government services, the results in this study does not support system quality as a major factor affecting the use of E-Government services by the public.

The Effect of Information Quality on the Attitudes of Using E-Government

Quality information as the level of usefulness of information obtained from an information technology (Permana & Sudarno, 2013). The fourth hypothesis (H4) in this study states that information quality influences the attitude of the use of E-Government. The test results show that the t-statistic value obtained (1.884) is less than the t-table value (1.96). Thus H4 was rejected and it is concluded that the quality of information was not a factor influencing the attitude of the use of E-Government services.

The results of this study are inconsistent with some research (DeLone & McLean, 2003; Al Shibly & Tadros, 2010). Empirical evidence which shows that information quality has a significant influence on the use of E-Government so that a better quality of information based on E-Government services will increase user acceptance of these services (Al Shibly & Tadros, 2010). The results of this study are consistent with Permana and Sudarno (2013) research on information quality on the use of E-Government services. The quality of information may not necessarily affect individuals to use E-Government facilities.

In this study, information quality is not a major factor influencing respondents to use E-Government services. According to the respondents, E-Government services can improve their performance so they do not assess the quality of information generated from these services. In addition, respondents felt assisted by E-Government services in various information and services expected from the government. Therefore, without considering the quality of the information generated, respondents still use this service.

The Effect of Attitude Towards Intention in E-Government Use

Attitude is a positive or negative feeling that arises in every individual when deciding to accept or reject a certain behavior (Davis, 1989; Hartono, 2007). The fifth hypothesis (H5) in this study states that attitude effects intention

to use E-Government. The test results show that the t-statistic value of 32.557 is more than the t-table value of 1.96. Thus H5 is accepted and it is concluded that attitude is one of the factors that influence intention in using E-Government services.

The results of this study are consistent with some research (Cheng et al., 2006; Al-Somali et al., 2008) which also provide empirical evidence in their research that attitude has a positive and significant effect on the intention in using a technology. The initial attitude that arises in an individual towards a service will affect the intention to use the service. Likewise, the more positive the information an individual can obtain about E-Governmet services, the better the attitude they can bring to that individual. This positive attitude can encourage the individual's intention to use E-Government services. Moreover, one factor that encourages attitude is the usefulness or benefits of E-Government services, so that when the individual has experienced the benefits of E-Government services, they will have an increase in intention to always use the service.

The Effect of Intention on Behavior Using E-Government

Intention is the best predictor of the behavior of the use of technology by individuals because intention is an individual's desire to perform a certain behavior (Hartono, 2007). In other words, there will be no real behavior in the individual without intention. The sixth hypothesis (H6) in this study states that intention affects the behavior of using E-Government. The test results show that the t-statistic value for this variable (32.553) is less than t-table value (1.96). Thus H6 is accepted and it is concluded that intention is one of the factors that influence the behavior of using E-Government services.

This is consistent with research (Davis et al., 1989; Taylor & Todd, 1995; Venkatesh & Davis, 2000). Individuals need motivation as a source of encouragement to do what they want to do. The existence of a positive tendency, an assessment of the benefits that can be obtained,

as well as the satisfaction that has been received can make positive motivation that encourages the emergence of intention which will eventually be applied in a real behavior. Thus, the existence of positive intention can encourage real behavior in the individual.

CONCLUSION AND RECOMMENDATION

The results of this study support the view that Technology Acceptance Model is a good model for predicting information technology usage behavior. However, there are several variables that indicate the opposite results from the main prediction model.

In this study, the behavior of Malang citizens in using E-Government services is influenced by their behavioral intention, while the intention in individual's behavior is influenced by the attitudes. The positive attitude of the people in Malang city towards E-Government services encourages their intention to use E-Government services. The main factor that drives the emergence of a positive attitude is the perceived usefulness of E-Government services. E-Government services are services that can provide a variety of benefits to reinforce the positive attitude of the community towards these services. In fact, neither the ease nor the quality of the system and information provided by the government through these services is seen as a major factor that affects people in Malang City to use E-Government services as long as the community benefits from its use. Thus, as long as the community can get benefits from E-Government services developed by the Malang City Government, it will encourage a positive attitude towards E-Government services. This attitude will influence the emergence of intention in community behavior which in the end resulting in their tendency to use E-Government services to obtain various information and services from the government.

On the other hand, ease of use, quality of the system, and quality of information do not affect people's attitudes to use E-Government. This explains that E-Government services in Malang, in terms of system quality, information and ease of use are considered not good enough and informative by the public. Therefore, it is a challenge for the Government of Malang City to be able to continue to improve and develop the quality of the system and information from E-Government services. Thus it is hoped that more and more people will use these services (E-Government) and support the efforts of Malang City Government to realize smart city.

Some limitations in this study include, first, the research context has not been focused. This study discusses the use of E-Government services, while the types of E-Government services in Malang widely varies. This is thought to influence the focus of respondents' assessments. Second, although the sample in this study has met the minimum sample size requirements (Sekaran, 2006), the sample size still needs to be increased in order to better represent the number of people in Malang to assess E-Government services.

Future research should consider, first, expanding the research model of the use of E-Government services in order to better cover more important theoretical factors. This is because the research model in this study is still limited when seen from the value of R^2. It is expected that the refinement of the research model can better explain the factors that influence the use of E-Government services. One of the improvements in the model can be done by adding subjective factors of respondents when using one of the E-Government services. Second, focusing more on particular E-Government service to be studied because the government has a variety of online services through E-Government, such as online tax and levy payments, online licensing, online complaints, or other applications that can also be utilized by the public. Furthermore, the context of E-Government services used in this study is too broad, so this needs to be more specified. In addition, it is needed to assess whether the same research model will give the same empirical evidence regardless of the context of E-Government. Third, it is suggested that future research use different local government in different regions that have different cultural contexts.

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