

Determinants of E-Government Implementation

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ARTICLE INFO

Article history:

Received: July 29, 2025; Received in revised form: August 26, 2025; Accepted: September 06, 2025;

Available online: September 08, 2025;

ABSTRACT

E-Government, as a government policy aimed at achieving good governance, has been implemented by local governments with varying levels of success and has not met the expected goals. Among the various factors that contribute to this, one key factor is the competence of employees who utilize IT as a vital tool for e-government. This study was conducted to analyze the influence of attitudes, perceptions of ease of using IT, and perceptions of the benefits of using IT on IT acceptance. The study used a quantitative approach using explanatory research. The sampling technique employed was stratified proportional random sampling, with sample units or members comprising 95 out of 1930, specifically the State Civil Apparatus (ASN) in Sitaro Islands Regency. The data collection technique was a questionnaire that had been tested and was valid and reliable. Data analysis was multiple regression. The results of the study revealed that attitudes, perceptions of ease of use, and perceptions of the benefits of using IT have a positive and significant effect on IT acceptance, both partially and simultaneously. For this reason, it is necessary to change the attitudes of IT users through their perceptions of IT being difficult to operate and its benefits or results not being much different from without using IT in the context of the public service process, must be changed to the opposite, namely, easy to operate and the results are more effective and efficient.

Keywords: e-government, IT, attitude, perception of use, perception of benefits, acceptance of IT

INTRODUCTION

The national policy and strategy on e-government development stipulated in Presidential Instruction No. 3 of 2003 aims to shift the government system and services to all stakeholders from conventional (direct face-to-face) to electronic (indirectly through the assistance of information

technology) or electronically (e-government). In addition, e-government aims to realize good governance through accountable, transparent, effective, and efficient services.

The implementation of e-government provides benefits in terms of efficiency, convenience, and better accessibility of public services, as well as providing integration between agencies in the implementation of e-government and maximizing the use of information technology (IT) and communication for processing, channeling, and distributing information in public services (Mulyono, 2011).

Although this policy should have been in effect for approximately 11 years since it was enacted (i.e. in 2003), in reality, the implementation by each government, especially at the Regency/City level, has not gone as expected. Amrozi et al. stated that up to now, many regions in Indonesia have implemented e-Government with varying levels of success in each region. Prihanto's research (2012) found that the level of achievement of e-government implementation in 27 provincial governments in Indonesia differed in terms of institutional policies, infrastructure, applications, and planning.

The level of success of e-government implementation will certainly be determined by the availability and adequacy of critical factors supporting the success of e-government itself. There are at least 7 critical factors that need to be considered by government institutions that are planning or implementing e-government for its continuity and sustainability, one of which is the existence of adequate levels of expertise and information technology infrastructure (Cahyadi, 2003). He further stated that the factors and obstacles commonly faced by developing countries, such as Indonesia, in implementing e-government include, among others, the low level of knowledge of Information Technology (Low IT Literacy Rate), causing most people to not understand or even realize the benefits of transacting online. This also hampers the growth and development of IT applications in the country.

There are several research results that reveal factors that influence the acceptance or use of information technology. Research conducted by Pare & Elam in Meiliana (2002) suggests that the level of trust, doubt, and perception of perceived benefits have a significant influence on the use of information technology.

In relation to the acceptance of information technology, research conducted by Weidenbeck (1999) resulted in the perception of ease, and a system can be built based on gradual expertise development. The research shows that the behavior of using information technology is very much determined by the initial perception of the individual. Kwon & Chidambaran (2000) stated that perceptions of perceived benefits and perceptions of ease of use will lead to real action in adopting information technology in everyday life. Davis, et al (1989), said the aim of using the Technology Acceptance Model is to explain and predict the acceptance of information technology and to make it easier to change the design of previous systems or users who have experience with a system. The Technology Acceptance Model predicts user acceptance based on belief, behavior, perceived usefulness, and perceived ease of use, where these factors can determine attitudes and intentions towards using information technology.

According to Davis, Perceived Benefits and Perceived Ease of Use are strong beliefs in attitudes that will shape the process of accepting information technology. Perceived Benefits are described as a relationship between users using a system to improve their work performance in an organizational context, while Perceived Ease of Use is described as the degree to which users expect the system to be free from effort targets (Davis, 1993).

This study will analyze whether IT acceptance factors are influenced by attitude factors, perceptions of ease of use, and perceptions of the benefits of using IT.

LITERATURE REVIEW

Technology Acceptance Model

The technology acceptance model was developed by Davis to explain computer usage behavior (Davis, 1989; Davis et al., 1989), which was derived from the Theory of Reasoned Action (TRA). TRA predicts user acceptance based on the influence of two factors: perceived usefulness and perceived ease of use. In social research, scholars seek to identify the determinants of behavior within individuals rather than technology. This theory is called the Theory of Reasoned Action (Fishbein and Ajzen, 1975). This theory has been fully used and developed, namely, how the user's attitudes and beliefs are related to the individual's intention to carry it out.

According to TRA, attitudes toward a behavior are determined by behavioral beliefs about the consequences of the behavior (which are based on information available or introduced to the individual) and tend to evaluate all consequences for each individual. Beliefs are described as the likelihood that individuals will exhibit growing behavior as a result of predetermined consequences.

Evaluation is an invisible evaluative response to the consequences that arise (Fishbein and Ajzen, 1975). This describes a view of information processing from an attitude formation, and a change will be influenced by external stimuli, attitudes, and will affect changes in people's belief structures (Ajzen and Fishbein, 1980). This theory states that TRA provides a complete rationale for the flow of causal relationships from external stimuli through user perceptions of attitudes toward technology, and finally to actual usage behavior (Fishbein and Ajzen, 1975).

The Technology Acceptance Model (TAM) assumes that beliefs will influence attitudes, which in turn drive intentions, which will then produce behavior. TRA and TAM state that what influences external variables of user behavior are user beliefs and attitudes. Trust is related to the assessment of individual relationships, that performing certain behaviors will result in specific consequences, while attitudes are related to individual desires that are positive or negative and tend to feel the influence of behavior (Hubona & Blanton in Feshbian and Azjen (1975). The goal of technology acceptance models is to predict information system acceptance and diagnose design problems before users have significant experience with a system (Davis, 1989).

Davis has developed considerations for measuring perceived usefulness and ease of use toward attitudes toward use, and attitudes toward using IT. The variables introduced in the technology acceptance model (such as consideration scales) offer a practical method that will save costs in evaluating new technologies and predict the degree to which end-users will seriously use a new technology before the system is actually implemented.

Attitudes in Using Information Technology

The technology acceptance model was developed by Davis to explain computer usage behavior (Davis, 1989; Davis et al., 1989), which was derived from the Theory of Reasoned Action (TRA). TRA predicts user acceptance based on the influence of two factors: namely, perceived usefulness and perceived ease of use. In social research, experts are looking for something to identify the determinants

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The goal of technology acceptance models is to predict information system acceptance and diagnose design problems before users have significant experience with a system (Davis, 1989). Davis has developed considerations for measuring perceived usefulness and ease of use toward attitudes toward use, and attitudes toward using IT. The variables introduced in the technology acceptance model (such as consideration scales) offer a practical method that will save costs in evaluating new technologies and predict the degree to which end-users will seriously use a new technology before the system is actually implemented. Regarding the attitude of using technology as a determinant of IT usage, Robbins (1996) defines attitude as a statement or evaluative consideration regarding an object, person, or event. The concept of attitude has three main components, namely: (a) Cognitive component, which is the opinion or belief segment of an attitude, (b) Affective component, which is the emotional or feeling segment of an attitude, and (c) Behavioral component, which is an intention to behave in a certain way towards someone or something. Thomson, et al. (1991) use the term affect as one of the components of "attitude" as a feeling of pleasure, joy, cheerfulness, or depression, horror, dislike, and hatred felt by individuals in relation to a certain action. So pleasure (affect) is related to what is felt by individuals as something pleasant or unpleasant. In the context of IT use, pleasure refers to the level of pleasure felt by individuals when interacting with IT. Ajzen & Fishbein (1988) stated that attitudes are described before being transferred to respond well or poorly to an object, person, event, or institution. He also stated that attitudes towards use play a central role in a system to appreciate the chain related to strength and ability. Igbaria (1995) regarding motivators for using IT recommends that, basically, motivators for using IT are formed from two aspects, namely intrinsic motivators, namely the pleasure felt by individuals in interacting with information technology, and extrinsic motivators.

Measurement of attitudes toward use is based on Ajzen and Fishbein (1980), an attitude scale that has been developed. Attitudes toward using a system refer to how well or poorly people generally

feel about using an information system. The semantic differential method is used to assess attitudes toward the use of the system. Individuals are asked to rate based on how they feel about using the system and describe their opinions about the existing system, five different pairs that form the evaluation dimensions of the semantic differential, which include (bad/good, unwise/wise, less good/good, harmful/beneficial, positive/negative).

Perception of Information Technology Users

Gibson et al (1996) define perception as a person's process in understanding their environment that involves organizing in interpretation as a stimulus in a psychological experience. Robbins (1996) states that perception is a process by which individuals organize and interpret their sensory impressions to give meaning to their environment.

In determining behavior, perception is an important factor, where perception is the initial influencer of environmental interpretation as a form of human interaction with the environment (Starub, 1995). In the research conducted (Hu 1997 and Fennech 2000 in Adi (2000) in relation to IT adoption, perception is divided into two, namely the perception of ease of use and the perception of perceived benefits.

Perceived Usefulness

Perceived usefulness is described as "the degree to which a person believes that using a particular system will improve his or her job performance" (Davis, 1989). The importance of perceived usefulness as an important determinant of user acceptance stems from the technology acceptance model, which proposes that perceived usefulness influences IT adoption, in terms of output value. Adams et al. (1992), Davis (1989), Straub et al. (1994), and Szajna (1996) said that user acceptance of an IT system is directed for a large system by the perception of perceived benefits. Further research by Davis (1993), denied that the perception of perceived benefits is a determining factor that influences system usage, in accordance with the functional capabilities of the new system.

Several measures have been used to model technology acceptance (Davis, 1989; and Venkatesh, 2000). Measures of perceived usefulness include increased performance, productivity, effectiveness, overall usefulness, time savings, and increased job performance. Perceived usefulness is always related, to measure perceived ease of use includes ease of learning, ease of control, ease of understanding, ease of doing something, clarity, and flexibility. Goodhue and Thompson (1995) view benefits as the suitability of technology to the job (task technology fit), namely the extent to which a technology provides assistance to individuals to complete work in an organization. Studies conducted by previous researchers show a positive correlation between perceptions of benefits and the use of the system.

Research conducted by Weidenbenck (1999) showed that perceptions of benefits influenced the use of mobile phones. Kohli and Vijparaj (1993) suggested that perceptions of benefits increased employees' desire to use new programs. Davis (1989) Perceived ease of use is described as "the degree to which a person believes that using a particular system would be free from mental and physical effort" Furthermore, it is said that the perception of ease of use is one of the important factors determining the use of operating systems through the perception of perceived benefits. Goodwin (1987) denied that the effective ability of a system, the perception of perceived benefits depends on its ability, namely the perception of ease of use. Davis (1993) stated that the perception of ease of use is the main cause of the

perception of perceived benefits. The technology acceptance model postulates that the perception of ease of use is an important determinant

Previous researchers stated that there is a tendency for perceptions of ease of use to have a less significant correlation with computer use. Research conducted by Straub and Brenner (1994) found that perceptions of ease of use were not significant in America, Switzerland and Japan. The results are consistent with research conducted by Adams, Nelson and Todd (1992) and Davis (1989). According to experts, this insignificance is caused by indirect effects from perceptions of perceived benefits.

The opposite of ease is complexity, which Rogers (1995) defines as "the degree to which an innovation is perceived as difficult to understand and use". Rogers stated that his research and experience led to the conclusion that the more complex a technology is perceived to be, the slower it is to adopt.

Based on empirical and theoretical studies, a conceptual research framework is formulated as in Figure 1.

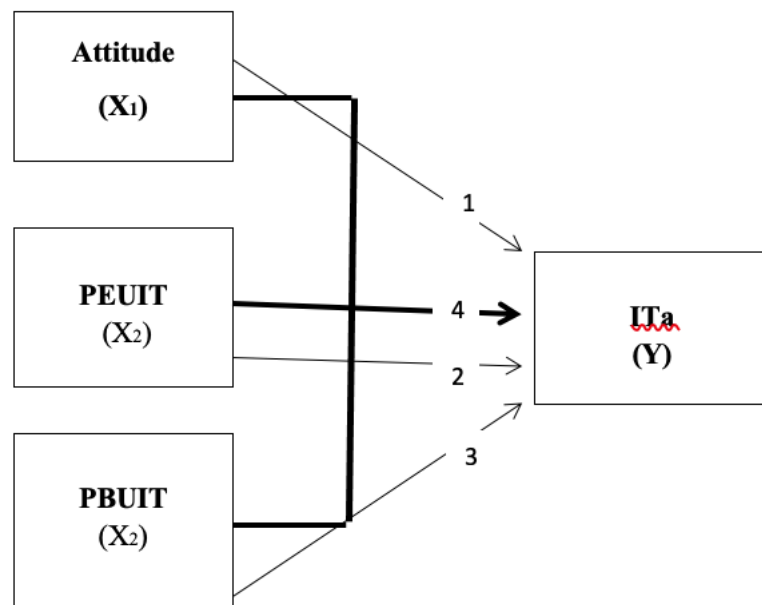


Figure 1. Research concept model

PBUIT = Perception of the Benefits of Using IT

PEUIT = Perception of Ease of Using IT

ITa = IT acceptance

Hypothesis

1. Attitude influences IT acceptance.
2. Perception of ease of using IT influences IT acceptance.
3. Perception of the benefits of using IT influences IT acceptance.
4. Attitude, perception of ease of use, and perception of benefits of using IT simultaneously influence IT acceptance.

METHOD

This study uses a quantitative approach using an explanatory design. The sample was 95 out of 1930 in the State Civil Apparatus (ASN) in SITARO Regency. The sampling technique was stratified proportional random sampling. Data were collected through a questionnaire instrument with a Likert scale. Before being used, the instrument was tested for reliability and validity. Data were analyzed using multiple regression analysis.

RESULTS AND DISCUSSION

The influence of attitudes on IT acceptance (ITa).

The results of data analysis for hypothesis testing can be seen in Table 1.

Table 1. Coeffisients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.064	1.497		.042	.966
	Attitude	.659	.097	.656	6.819	.000
	PEUIT	.225	.103	.208	2.185	.031
	PBUIT	.212	.073	.111	1.546	.026

a. Dependent Variable: ITa

Based on Table 1, the regression equation is $Y = 0.064 + 0.659X_1 + 0.225X_2 + 0.212 X_3 + \varepsilon$. The coefficient $b_1 = 0.659$ is obtained and is positive, meaning that the influence of the Attitude variable on ITa is 65.90% and the stronger the Attitude and trust of IT users, the higher the ITa. In addition, the sig. value is obtained = 0.000, and this value is smaller than $\alpha = 0.05$, so it is said that the influence of the attitude variable on ITa is real or significant.

Perception of Ease of Using IT (PEUIT) has an effect on ITa.

Based on Table 1, the coefficient $b_2 = 0.225$ is obtained and is positive, meaning that the influence of the PEUIT variable on ITa is 22.50% and the stronger the PEUIT, the better the ITa. In addition, the sig. value is obtained. = 0.031, and this value is smaller than $\alpha = 0.05$, so it is said that the influence of the PEUIT variable on ITa is real or significant

The perception of the benefits of using IT (PBUIT) has an effect on the ITa

Based on Table 1, the coefficient $b_3 = 0.212$ is obtained and is positive, meaning that the influence of the PBUIT variable on the acceptance of IT is 21.20% and the stronger the PBUIT, the higher the acceptance of IT. In addition, the sig. value is obtained = 0.026, and this value is smaller than $\alpha = 0.05$,

so it is said that the influence of the variable Perception of the benefits of using IT on the acceptance of IT is real or significant.

Attitude, PEUIT, and PBUIT simultaneously influence ITa.

The results of the analysis of variance (ANOVA) to test the significance of the simultaneous influence of Attitude, PEUIT, and PBUIT simultaneously influencing IT acceptance are obtained as in Table 2.

Table 2. ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	319.855	3	106.618	323.660	.000 ^b
	Residual	29.977	91	.329		
	Total	349.832	94			

a. Dependent Variable: ITa

b. Predictors: (Constant), PEUIT, PBUIT , Attitude

The results of the analysis to test the magnitude of the simultaneous correlation (R) and the coefficient of determination (R²) of attitudes, PEUIT, and perceptions of the PBUIT simultaneously have an effect on the ITa as in Table 3.

Table 3. Model Summary

Mode		Change Statistics							
		R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	Sig. F Change
1		.956 ^a	.914	.911	.574	.914	323.660	3	.000

a. Predictors: (Constant), PEUIT, PBUIT , Attitude

Based on Table 3 (ANOVA), obtained sig. value 0.000 smaller $\alpha = 0.05$, meaning that simultaneously Attitude, PEUIT, and PBUIT have a real or significant effect on IT acceptance towards ITa. Meanwhile, in table 5.3 obtained R = 0.956 shows that the magnitude of the relationship between the variables Attitude, PEUIT and PBUIT affect ITa is 95.60% and adjusted R square (R²) = 0.911, meaning that the contribution of the variables Attitude, PEUIT and PBUIT simultaneously towards ITa is 91.10%, while the rest (8.90%) is determined by other variables

DISCUSSION

The results of this study reveal that the acceptance of information technology by users is influenced by the perception of perceived benefits, perception of ease of use, and attitude towards using it. This means that the more users feel the benefits of IT and its ease of use, the more positive their attitude towards using it, and the better their acceptance of information technology. This shows that users generally use information technology to carry out or facilitate tasks related to their work or their needs. In this case, users choose and use an information technology application that they believe will maximize their task performance (learning process)

Soeprapto (2009) stated that usefulness is a variable that shows individual trust in the decision-making process related to the use of information systems, where the individual has the hope that by using the information system, they will be able to improve performance. Chau (1996), as quoted by Gardner and Amoroso (2004), stated that individuals evaluate their behavior regarding the use of information systems in the context of utility and base their behavioral choices on the desire to obtain benefits from using information systems.

In terms of ease of use, Soeprapto (2009) shows that there are two indicators, namely (1) ease of learning, which is indicated by the ease of understanding, learning to become skilled and (2) ease of use, which is indicated by being able to easily do something desired. He further stated that the strongest indicator as a measure of ease of use is ease of learning.

In relation to the influence of usefulness on attitude, this study supports the results of Soeprapto's (2009) research, that usefulness has a significant and positive influence on attitude. This means that the higher the usefulness of technology, the higher/more positive the attitude of its users.

This result also supports the research results by Taylor and Todd (1995), Nah et al. (2004), and Schepers and Wetzels (2007), which show the influence of usefulness on attitudes. Therefore, organizations need to pay attention to the usefulness aspect of technology (internet) to obtain a positive attitude response from users.

In general, the research results support the technology acceptance model from Davis, et al. (1989). The Technology Acceptance Model predicts user acceptance based on belief, behavior, perceived usefulness, and perceived ease of use, where these factors can determine attitudes and intentions towards the use of information technology. According to Davis, Perceived Benefits and Perceived Ease of Use are strong beliefs in attitudes that will shape the process of accepting information technology.

Jogiyanto (2007) stated that now we often hear that IT systems fail to be implemented because people refuse or do not want to use them for various reasons.

In order for the information system to be well received by its users, the behavior of rejection needs to be changed, or the system needs to be prepared in advance so that the users are willing to behave in an accepting manner. Changing behavior cannot be done directly to the behavior, but must be done through the antecedents or determinants, or causes of the behavior. One of the antecedents of behavior is beliefs about the information system.

CONCLUSION

Attitude, PEUIT, and PBUIT partially and simultaneously have a positive and significant effect on ITa. For that, it is necessary to change the attitude of IT users through their perception of IT being difficult to operate and its benefits or results are not much different from without using IT in the context of the public service process must be changed to the opposite, namely easy and more effective and efficient and efficient.

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