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## FACTOR AFFECTING TRUST AND USE OF E-GOVERNMENT: THE CASE OF BANDA ACEH CITY, ACEH PROVINCE

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### Abstrak

Di sektor pemerintahan, E-Government telah menjadi bagian dari inovasi. Penggunaan E-Government diperlukan untuk menjaga transparansi pemerintah. Di Kota Banda Aceh Provinsi Aceh, Indonesia, penelitian ini mencoba menangkap fenomena faktor-faktor yang mempengaruhi kepercayaan dan penggunaan E-Government. Tujuan dari penelitian ini adalah untuk mempelajari tentang elemen-elemen yang mempengaruhi kepercayaan dan adopsi E-Government di wilayah Banda Aceh melalui penelitian kuantitatif. Penelitian ini termasuk dalam kategori penelitian survei. Penelitian ini menemukan bahwa terdapat dua variabel yang berimplikasi positif dan signifikan terhadap variabel lainnya yaitu variabel manfaat memiliki implikasi yang signifikan untuk kepercayaan pada e-government, dan variabel kepercayaan pada e-government memiliki implikasi yang signifikan untuk penggunaan e-government. Sedangkan tiga variabel lain yang tidak berimplikasi signifikan adalah faktor organisasi, faktor teknologi dan faktor risiko kepercayaan masyarakat pada penggunaan E-Government oleh pemerintah. Penelitian ini juga memiliki keterbatasan, seperti hanya mempertimbangkan karakteristik yang berdampak positif terhadap penggunaan e-government di Wilayah Banda Aceh, daripada masalah yang mendasari penggunaan e-government di Wilayah Banda Aceh Provinsi Aceh. Batas waktu yang berhubungan dengan pengumpulan data merupakan kelemahan lain dari penelitian ini.

**Kata kunci:** Kewarganegaraan; E-Government; Persepsi

### Abstract

*In the government sector, E-Government has become part of innovation. The use of E-Government is necessary to maintain government transparency. In Banda Aceh City, Aceh Province, Indonesia, this study tries to capture the phenomenon of the factors that influence trust and use of E-Government. The purpose of this research is to learn about the elements that influence trust and adoption of E-Government in the Banda Aceh region through quantitative research. This research is included in the category of survey research. This study found that two variables have positive and significant implications for other variables, namely the benefit variable has significant implications for trust in e-government, and the trust variable in e-government has significant implications for the use of e-government. Meanwhile, three other variables that have no significant implications are organizational factors, technological factors, and risk factors for public trust in the use of E-Government by the government. This study also has limitations, such as considering the positive impact on the use of e-government in the Banda Aceh Region, rather than the problem of only using e-government in the Banda Aceh Region of Aceh Province. The time limit associated with data collection is another weakness of this study.*

**Keywords:** Citizenship; E-Government; Perception

## INTRODUCTION

Many governments around the world are increasingly relying on internet technology to deliver public services, such as electronic government. These services range from simple informational webpages to sophisticated platforms for managing relationships between government and non-government organizations. Electronic government (e-government) attempts to provide community members with savings that are more accurate, accessible, cost-effective, and time-efficient (Jacob et al., 2017).

E-government has been implemented in various nations, including the United States and the United Kingdom, with the best results. Ease of use and perceived value of a product tend to go hand in hand (Khan et al., 2020). When it comes to using the internet, trust is crucial in determining cultural disparities in e-government acceptance (Sabani et al., 2018). E-Government, on the other hand, is being employed in Asian countries such as India, South Korea, Japan, Indonesia, and China, and it is bringing some fresh perspectives on regulating public administration to digitalize more and make public services available anywhere and at any time (Draheim et al., 2020).

E-government has an impact on a variety of things, such as economic events in China. E-government can help to boost and support China's economic system (Al-Sai & Abualigah, 2017). Technology on E-Government possibility applied four stages of technology launch, and the antecedents to each are: (1) consumer awareness; (2) choice and personal alignment; (3) approach based on Big Data (Kane et al., 2016; Mensah & Adams, 2020; Nam, 2018), Technology on E-Government possibility applied four stages of technology launch, and the antecedents to each are: (1) consumer awareness; (2) choice and personal alignment; (3) approach and implementation efficiency; (4) market

viability creativity, ease, and help (Verkijika & De Wet, 2018). Case using E-Government can effect on boosting bureaucracy transparency and accountability (Kane et al., 2016)(Ahn & Bretschneider, 2011), Using Web 2.0 tools to examine whether it helps with customer service delivery, consumers' need for interactivity, and dissemination, and public awareness (Adiputra et al., 2018). In order to ensure security when using E-Government, four aspects must be considered: technical, political, cultural, and legal aspects (M.-S. Hwang et al., 2004), On the other hand, privacy in e-government is quite different just before taking into consideration throughout other public sector phases (Belanger & Hiller, 2006), In the case of the Swiss, the use of E-Government has received positive attention as well as positive response from citizens (López-López et al., 2018).

Several studies have been conducted on the use of E-Government in large countries (Li et al., 2019; Nam, 2018; Okunola et al., 2017; Sagarik et al., 2018; Scholta et al., 2019; Twizeyimana & Andersson, 2019). His small study focused on the citizen's perspective used in urban areas. Residents of Banda Aceh, Aceh Province, are the subjects of this study. The value of originality of this study aims to determine the public's perception of the implementation of e-government in the Banda Aceh region of Aceh Province.

## LITERATURE REVIEW

E-government is defined as a means of government employing innovative technology and information to improve public service (Adiyarta et al., 2018). The way e-government is used can have an impact on citizen trust. Organizational, technological, risk, and benefit considerations all influence trust in using e-government (Alzahrani et al., 2017).

Share value, structure, norm, belief, policy, method, and competency are all related to the organizational component (Choi & Chandler, 2020; Santa et al., 2019).

The trust in e-government is influenced by organizational issues (Glyptis et al., 2020; K. Hwang & Choi, 2017). The use of e-governments has the potential to improve customer satisfaction. The informational system in e-governments is also influenced by organizational issues (Fan & Zhao, 2017; Juell-Skielse et al., 2017).

Technology has been used and has an impact on the e-government application (Krishnan et al., 2017; Lallmahomed et al., 2017). In e-government, technology is utilized as a platform or instrument to communicate, share information, and provide a public service (Liang et al., 2017). The impact of technological factors on e-government can be seen through the eyes of the user and the platform; if the platform and the user can use technology to its full potential, the impact of e-government as a public service will be enhanced (Xie et al., 2017). Furthermore, citizen trust in the utilization of digital technology as an e-government platform is critical (Das et al., 2017).

In e-governments, risk factors can be seen of as values that governments can use to deal with the danger of implementing technology (Batara et al., 2017; Obaid et al., 2020)(Obaid et al., 2020). When citizens employ technology in the public sector, a risk element influences citizen trust in E-government (Sundberg, 2019). Risk concerns can provide e-government a new dimension when it comes to looking at the problem of citizens using e-governments (Abu-Shanab, 2017; Janita & Miranda, 2018). With the highest level of trust, the danger of using E-government will be reduced (Sundberg, 2019).

The benefit factor influences e-government trust, and it is used in e-government to build goals and improve public service in digital media (Basahel & Yamin, 2017). A citizen will recognize the benefits of adopting e-government in public service if the aforementioned aspects are

considered (Chen et al., 2019). People may be enticed to use e-government as the benefits of using it grow (Liang et al., 2017). Benefits provide a layer of e-government to the picture, allowing you to see the strategic steps and involvement in public service (Glyptis et al., 2020).

Citizens' trust in E-government can boost the number of people who use it. A citizen can express their voice concerning the public service if they have faith in the e-Government (Ayamba & Njoku, n.d.; Bhagat et al., 2021; Firmansyah et al., 2021). Furthermore, trust and e-government usage can imply that the e-government is accessible (Aljazzaf, 2019; Alzahrani et al., 2018; Pritchard, 2017; Santa et al., 2019; Santamaría-Philco & Wimmer, 2018).

## RESEARCH MODEL AND HYPOTHESES DEVELOPMENT

### Research Model

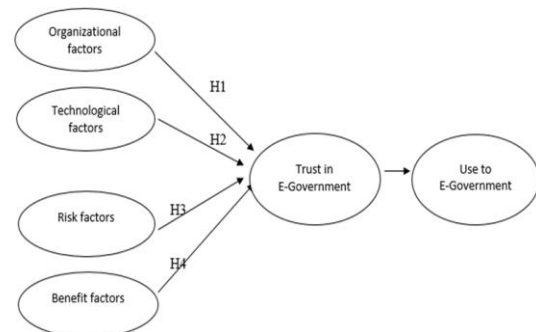


Figure 01. Research Model

### Hypotheses of this study:

- X1. Organizational factors affect trust in local governments in the use of e-Government positively and significantly.
- X2. Technological factors affect the trust of local governments in the use of e-Government positively and significantly.

- X3. Risk factors affect local government trust in the use of e-Government positively and significantly.
- X4. Benefit factors affect trust in local governments in using e-Government positively and significantly.
- Y5. E-government trust affects the use of e-government.

## METHOD

### *Data collection*

A survey method design was introduced to collect primary data on people's intention to use e-government. This study used a self-managed questionnaire for primary data collection as a research instrument.

This study takes the case of the community as respondents in using e-government. They are in the city of Banda Aceh, Indonesia. Since 2015, Banda Aceh City has received an award from the Ministry of Communication and Information of the Republic of Indonesia as an appreciation for regions with high regional performance in developing e-government.

### *Sampling technique*

Purposive sampling, as a form of non-probability sampling, is used in this study. The main purpose of sampling is to focus on selecting respondents with certain characteristics. The target respondents of this research are local government employees in cities who are personally assigned to implement e-government. According to Slovin's formula, the respondents at the agency are 110.

### *Research instrument*

Based on the theoretical framework, the integration of indicators into the likelihood aspect of each variable is developed. This study establishes indicators of intention to use e-government, attitudes, subjective norms, and perceived behavioral

control and indicators of organizational structure, processes, and culture.

The research method used in this research is quantitative. This study used a random selection method to distribute the questioners via a Google form (Henseler, 2007; Jhonson, 2014). The locus of this research is Banda Aceh City, Aceh Province. The population in this study is the entire population of Banda Aceh City of productive age (15-55 years) with the aim of not being biased in later sampling. The number of population obtained by the researchers was 59246 people, which the researchers found on the official website of the Central Statistics Agency for Banda Aceh City (BPS Kota Banda Aceh, 2020).

The number of respondents obtained in this study is the accumulation from March 29, 2021 to May 29, 2021. Furthermore, the researcher uses the Slovin formula to determine the number of samples. In this study the researchers chose to use a sampling error of % with an accuracy rate of %. For more details, you can see the Slovin formula and its calculations as follows:

$$n = \frac{N}{1 + Ne^2}$$

Information

n = Sample

N = Population

e = Fault tolerance (sampling error)

The sampling error (e) used is % with the consideration that the population tends to be homogeneous and the aspects of the researcher's limitations. Based on these considerations, the number of samples from the population in this study, namely:

$$\begin{aligned} n &= \frac{N}{1 + N^2} \\ &= \frac{201.466}{1 + 201.466 (0,1)^2} \\ &= \frac{201.466}{1 + 201.466 (0,01)} \end{aligned}$$

$$= \frac{201.466}{2.015,66} = 99,950 = \mathbf{100}$$

Based on the calculation using the Slovin formula, it can be concluded that the research sample is 100 respondents. Furthermore, to adjust the number of samples with the data (questionnaires) that have been distributed and filled out by the respondents, the number of respondents used in this study is 104 people, according to the number of respondents' responses during the two-month time interval. The data analysis tool in this study used the SmartPLS 3.3.3 program, with the tests carried out were the average score test, the outer model test, the structural/inner model test, and hypothesis testing. The measurement model is used to test the validity and reliability, while the structural model is used to test causality.

**Table 01.** Questioner Design

Variable	Indicator
Organizational factors	I see that the Regional Apparatus Organization in Banda Aceh City supports the implementation of E-Government.
	I see that the regional Apparatus Organization is doing its job well..
	I see that the culture of Regional Apparatus Organizations in Banda Aceh City has supported the implementation of E-Government.
Technological factors	I see that the use of E-Government in Banda Aceh City is one of the facilities to

	facilitate public services.
	I see that E-Government increases the capability of the Banda Aceh City government in the field of public services.
	I see that E-Government is a reference for public services in Banda Aceh City for the future.
Risk factors	I see that the use of E-Government minimizes the occurrence of errors in public services in Banda Aceh City..
	I feel that the use of E-Government provides time efficiency in public services in Banda Aceh City.
	I see the use of E-Government provides easy information to the public.
Benefits	I feel the ease of accessing public information with the existence of E-Government in Banda Aceh City.
	I see E-Government provides convenience in the implementation of public services in Banda Aceh City.
	I see that E-Government makes it easier for the public to provide criticism and suggestions to

	the Banda Aceh City government.
Trust in E-Government	I believe using E-Government helps society at large.
	I believe using E-Government to solve public service matters.
	I believe using E-Government opens up opportunities to voice criticism and suggestions to the government.
Use to E-Government	I use E-Government every time I complete public service matters.
	I use E-Government in providing criticism and suggestions to the government.
	I use E-Government because it is easier, more efficient and effective.

researcher are respondents from those who graduated from high school (SMA), are/have completed studies at the lecture level.

**Table 02.** Profile of respondents

Characteristics	Banda Aceh City	
	Frequency	%
<b>Gender</b>		
<b>Male</b>	45	45%
<b>Female</b>	59	59%
<b>Age</b>		
<b>11 - 20 years</b>	9	0.09%
<b>21 - 30 years</b>	88	0.88%
<b>31 - 40 years</b>	2	0.02%
<b>41 - 50 years</b>	1	0.01%
<b>51 - 60 years</b>	3	0.03%
<b>61 - 70 years</b>	1	0.01%
<b>Education level</b>		
<b>BS/JHS</b>	0	0%
<b>SHS</b>	30	0.3%
<b>D1 - D3</b>	8	0.08%
<b>UG</b>	58	0.58%
<b>G - PG</b>	8	0.08%

BS/JHS= basic school/junior high school; SHS=senior high school; D=diploma; UG=under-graduate; G=graduate; PG=post-graduate

Note: This research data collection method uses quantitative survey questions taken from the indicators per variable in the table. Survey questions were measured using 4 Likert scales: 1 = strongly disagree, 2 = disagree, 4 = agree, and 5 = strongly agree.

## RESULT AND DISCUSSIONS

### *Demographic profile of respondents*

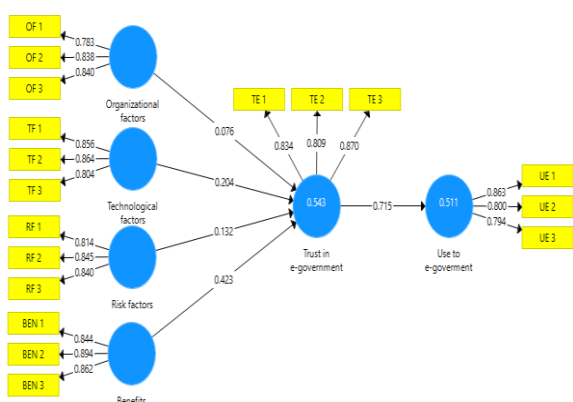
Based on a survey conducted by researchers on the community in Banda Aceh City, it was found that there were 104 respondents with more male compositions than women. Furthermore, the majority of respondents are also under the age of 30 years than above 30 years. As for the composition of the last education level taken, most of the respondents obtained by the

Table 02 shows the demographic profile of the respondents. Most of the respondents (45%) in the area were male, while the rest (59%) were female. The majority of respondents are young, namely 30 years and under (0.88 percent), while others are 40 years and over (0.1 percent). Respondents have senior high school education (0.3 percent), diploma (0.08 percent), undergraduate (0.58%), and postgraduate (0.08 percent).

### *Validated research model*

The researcher proposes a model to examine the data consisting of the constructs: Organizational factors, technological factors, risk factors, and perceived benefits, which can directly affect trust in e-government or function as mediating variables to influence use to e-government. The quality of the

measurement model is determined based on its validity and reliability by considering the values: Convergent Validity and Discriminant Validity which can be seen from the score results from the outer model, namely the Average Variance Extracted (AVE) and outer loading values, with a note that it must be greater than 0.5 to be said valid (Figure 02 & Table 03), and Cronbach's Alpha and Composite Reliability values, respectively, which must be more than 0.60 and 0.70, to be said to be reliable (Table 04).



**Figure 02.** Validity

**Table 03.** Validity Data

Variable	Indicator	Outer Loadings	Average Variance Extracted (AVE)	Description
Organizational factors	OF 1	0,783	0,674	Valid
	OF 2	0,838		
	OF 3	0,84		
Technological factors	TF 1	0,856	0,708	Valid
	TF 2	0,864		
	TF 3	0,804		
Risk factors	RF 1	0,814	0,694	Valid
	RF 2	0,845		
	RF 3	0,84		
Benefits	BEN 1	0,844	0,751	Valid
	BEN 2	0,894		
	BEN 3	0,862		
Trust in E-Government	TE 1	0,834	0,703	Valid
	TE 2	0,809		
	TE 3	0,87		
Use to E-Government	UE 1	0,863	0,672	Valid
	UE 2	0,8		
	UE 3	0,794		

The results of the validity test in Table 03 show that all questions on each research variable consisting of: organizational factors, technological factors, risk factors, benefits, trust in e-government and use to e-government have an outer loading value of > 0.50 and all variables research that has an AVE value > 0.50. Thus, it can be concluded that all questions on all research variables are declared valid or meet convergent validity and discriminant validity.

**Table 04.** Reliability Data

Variable	Mean	Standard Deviation	Cronbach's Alpha	Composite Reliability	Description
Organizational factors	3,657	0,901	0,758	0,861	Reliable
Technological factors	3,990	0,824	0,794	0,879	Reliable
Risk factors	4,013	0,860	0,781	0,872	Reliable
Benefits	3,926	0,812	0,834	0,901	Reliable
Trust in E-Government	3,968	0,900	0,788	0,876	Reliable
Use to E-Government	3,767	0,898	0,755	0,860	Reliable

The mean value in Table 04, shows the level of conformity of the six independent variables and the two dependent variables. The independent variable that got the highest score was "risk factors" with a value of 4,013, followed by "technological factors" with a value of 3,990. Meanwhile, the variable with the lowest value is the variable "organizational factors" with a value of 3,657. This variable is classified as the most common problem that can be found in almost all government agencies in Indonesia, such as convoluted procedures to the problem of time and price uncertainty which makes services difficult to reach naturally by the public.

Furthermore, Table 04 also shows the value of Cronbach's Alpha and Composite Reliability that is > 0.60 and > 0.70 respectively, so it can be concluded that all research variables; organizational factors, technological factors, risk factors, benefits, trust in e-government and use to e-government meet the reliability test. The measurement of the outer model that has met this validity and reliability test, shows that further measurements for the Inner Model can be carried out.

The inner model test was conducted to see the relationship between the construct, significance value and R square of the research model. The structural mode was evaluated using R Square for the dependent construct of the t test, as well as the significance of the coefficients of the structural path parameters. In assessing the model with PLS, it starts by looking at the R square for each dependent latent variable. Table 05 below is the estimation result of R square with SmartPLS 3.3.3.

**Table 05.** R-Square Result

Variable	R-Square
<b>Trust in e-government</b>	0.543
<b>Use to e-government</b>	0.511

If it is associated with the Rule of Thumb for the R Square test, namely 0.75 for the strong category, 0.50 for the medium category, and 0.25 for the weak category, it can be concluded that the variables that affect "trust in e-government" and then "Use for e-government", both have a moderate level of influence. These results indicate that 54.3% of the Trust in e-government (TE) variable can be influenced by organizational factors (OF), technology factors (TF), risk factors (RF) and benefits (BEN), while the variable Use to E-Government (EU), 51.1% is influenced by Trust in e-government (TE).

**Hypothesis Testing**

Hypothesis testing between variables, namely exogenous variables on endogenous variables and endogenous variables on exogenous variables, was carried out by the bootstrap resampling method after knowing the validity and reliability of the data. The test statistic used is the t statistic (t test). The comparison t value in this study was obtained from the t table. The test can be declared significant if the T statistic is > 1.96 and the P value is < 0.05. Hypothesis testing by looking at the output path coefficient, from the

bootstrap resampling results can be seen in Table 06.

**Table 06.** Hypothesis Testing

Variable	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values	Assessment of Hypothesis
BEN->TE	0.423	0.427	0.119	3.549	0.000	Accepted
OF->TE	0.076	0.075	0.115	0.659	0.510	Rejected
RF->TE	0.132	0.139	0.146	0.899	0.369	Rejected
TF->TE	0.204	0.200	0.123	1.662	0.097	Rejected
TE->UE	0.715	0.716	0.054	13.153	0.000	Accepted

Table 06 shows that from all interrelated variables, it can be seen that there are only two accepted hypotheses, which are indicated by the T statistics value > 1.96 and P values < 0.05 (in green), while the rejected hypotheses are the opposite (in red). The results shown in Table 06 confirm and at the same time negate the findings of previous studies, as well as regulations set by the government.

H1. Organizational factors have no significant implications for trust in e-government (hypothesis rejected), with T statistic and P value of 0.659 and 0.510, respectively. This study at the same time negates the findings of previous studies that organizational factors have a significant influence on trust in e-government.

H2. Technological factors have no significant implications for trust in e-government (hypothesis rejected), with T statistic and P value of 1.662 and 0.097, respectively. This study at the same time negates the findings of previous studies that technological factors do not have a significant effect on trust in e-government. This result is understandable, because Banda Aceh City is an area that is still below the average level of technology literacy.

H3. The risk factors have no significant implications for trust in e-government (the hypothesis is rejected), with



the T statistic and P value of 0.899 and 0.369, respectively. This study at the same time negates the findings of previous studies that risk factors do not have a significant effect on trust in e-government.

H4. Benefits have significant implications for trust in e-government (hypothesis accepted), with T statistic and P value of 3,549 and 0.000, respectively. This study at the same time negates the findings of previous studies that benefits have a significant influence on trust in e-government.

H5. Trust in e-government has significant implications for use to e-government (accepted hypothesis), with T statistic and P value of 13,153 and 0.000, respectively. This study at the same time negates the findings of previous studies that trust in e-government has a significant influence on use to e-government.

These accepted and rejected hypotheses, at the same time show that the findings, both affirm and negate the areas of factors that influence beliefs about the use of E-Government, where these areas are the areas of organizational management (organizational factors), service delivery, public electronics (technological factors), effectiveness and efficiency (risk factors), ease of access (benefits), strengthening trust (trust in e-government), and increasing system renewal (use to e-government).

## CONCLUSION

The main contribution of this study is to empirically examine the implications of organizational factors, technological factors, risk factors and benefits that are integrated into the use of E-Government, on citizens' trust in government and public services carried out by the local government of Banda Aceh. Since the relationship between many variables as previously mentioned has not been studied much, this research can be used as one of the directions for public service

reform in regions in Indonesia. There are two variables that have positive and significant implications for other variables, namely the variable of benefits on citizens' trust in the government, and the variable of citizens' trust in the government on the use of citizens in e-government. Meanwhile, three other variables that have no significant implications are organizational factors, technological factors and risk factors for public trust in the government.

The local government of the city of Banda Aceh must utilize its resources to improve the quality of the use of e-government in the city of Banda Aceh, Aceh Province. The Banda Aceh city government must then consider how E-government can provide benefits and easy access to residents in the area. This study aims to disseminate information about the application of E-government in Aceh Province, especially in the city of Banda Aceh; also aims to improve research on E-Government cases in Indonesia, Aceh Province, and Banda Aceh Region.

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