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Citizens' Intention to Use E-Government Services in Local Government by Integrating UTAUT, TPB, and TAM Model

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ABSTRACT

In contemporary society, the widespread adoption of information and communication technologies has become integral to meeting daily needs. E-Government leverages these technologies to deliver efficient and secure services to citizens, particularly at the local government level. However, existing literature lacks comprehensive exploration into citizen preferences for utilizing e-government services, especially those offered by local governments. Addressing this gap, this study investigates citizen intentions to use e-government, focusing on the application system provided by local governments. Our research framework integrates three established models (UTAUT, TAM, and TPB) and employs empirical validation through a structured questionnaire. Data collection involved 97 respondents from diverse cities/regencies. Rigorous reliability and validity assessments were conducted on the questionnaire, with analysis performed using structural equation modeling (SEM). The findings underscore the significant influence of citizens' attitudes toward e-government, shaped by factors such as effort expectancy, facilitating conditions, and perceived risk. Furthermore, a positive and significant relationship between attitude and Intention to use revealed. This research contributes to a deeper understanding of citizen behavior towards e-government services, offering insights crucial for enhancing service delivery and citizen engagement at the local level.

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INTRODUCTION

Information and communication technology has had an important effect on government organizations (Tejedo-Romero et al., 2022). The advancement of information technology has necessitated significant overhauls in government organizations to consistently deliver optimal service to the people. These modifications encompass not just the service items, but also the organizational structure and

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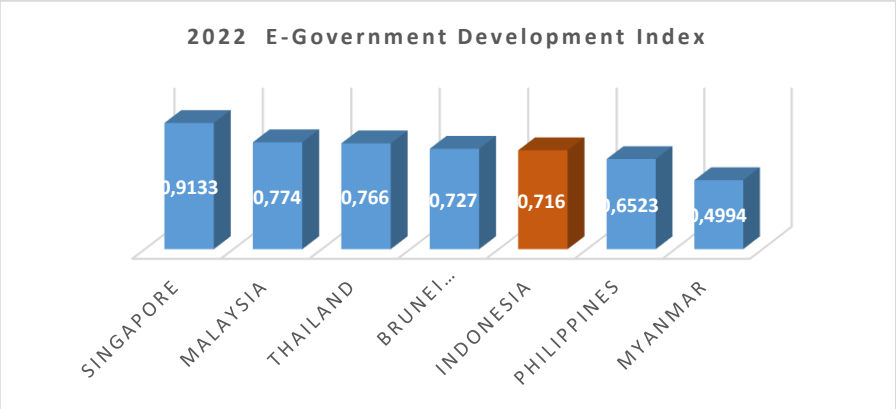
administration. In advanced nations, e-government arises from the reformation of bureaucratic processes of engagement with society to foster a more amicable environment. In developing nations, there is a widespread belief among policymakers that e-government can be a means to achieve a clean, authoritative, and transparent government.

The fundamental idea behind e-government is the provision of services using electronic means, such as the internet, cell phones, computer networks, and multimedia. The implementation of e-government involves the organization and optimization of information management systems and public service operations through the utilization of information and communication technology. To optimize the user experience of public service users, a public service organization should demonstrate innovation by utilizing digital technologies (Trischler & Westman Trischler, 2022).

The scope of e-government includes the contacts between the government and society, government and businesses, and inter-governmental relations (Das & Das, 2021). Alternatively, e-government can be defined as the utilization of digital technology to revolutionize government operations to enhance the efficacy and efficiency of service provision (Anshari & Hamdan, 2023). The idea implies that utilizing digital technology for service delivery in government operations might enhance efficiency and effectiveness (Carter et al., 2022). The efficiency in this scenario encompasses time, cost, and energy. According to the World Bank, e-government refers to the utilization of Internet technologies by government agencies, including WAN, internet, and mobile computing. This has the potential to alter the dynamics between government, society, business, and other relevant parties.

The implementation of government initiatives aimed at enhancing technology-based services has revitalized regional administrations in Indonesia. Ongoing endeavors to enhance services for the community persist. The development of diverse applications for all categories of permissions was initiated to facilitate the acquisition of permits without any limitations based on geographical location. This is significant due to Indonesia's vast archipelago comprising several islands. The current Indonesian E-Government Development Index (EGDI) data is illustrated in the following figure 1:

Figure 1. E-Government Development Index 2022



Source: (United Nations, 2023)

Indonesia ranks far behind its neighboring countries. In 2022, Indonesia's EGDI (E-Government Development Index) stands at 0.7160, placing it at the 77th position in the ranking. The ranking condition is displayed in the subsequent figure 2.

Figure 2. E-Government Development Rank 2022

Country	Rank 2022	EGDI 2022
Singapore	12	0.9133
Malaysia	53	0.7740
Thailand	55	0.7660
Brunei Darussalam	68	0.7270
Indonesia	77	0.7160
Philippines	89	0.6523
Myanmar	134	0.4994

Source: (United Nations, 2023)

This evidence clearly shows that Indonesia ranks far behind its neighboring countries, such as Singapore (EGDI 0.9133, rank 12), Malaysia (EGDI 0.7740, rank 53), Thailand (EGDI 0.7660, rank 55), and Brunei Darussalam (EGDI 0.7270, rank 68) (United Nations, 2023). The facts show that Indonesia can still not compete with its neighbors, such as Singapore, Malaysia, and Thailand.

The implementation of e-government in Indonesia is still ongoing. The implementation stages begin with the central government, such as the Ministry office, and go to the local government level, specifically the province, city/district, and village levels. Riau Province is one of the Indonesian provinces that have adopted e-government. Backed by 12 cities/regencies that are dedicated to providing services that are transparent, efficient, and user-friendly, is one of the objectives. The strong excitement exhibited by e-government users in Riau Province serves as a driving force for the government to enhance its services, so striving to meet the expectations of the people. For its journey, the regional government in Riau Province consistently enhances its services on an annual basis. This is substantiated by the following data (Table 2).

Table 2. Evaluation of electronic-based government systems in central and local government 2023

No	Local Government	Indeks	Predicate
1	Provincial government of Riau	3,01	Good
2	Government of Kampar Regency	2,96	Good
3	Government of Bengkalis Regency	2,70	Good
4	Government of Indragiri Hulu Regency	2,88	Good
5	Government of Indragiri Hilir Regency	2,23	Fair
6	Government of Pelalawan Regency	2,27	Fair
7	Government of Rokan Hulu Regency	2,64	Good
8	Government of Rokan Hilir Regency	2,50	Fair
9	Government of Siak Regency	3,01	Good
10	Government of Kuantan Singingi Regency	2,96	Good
11	Government of Kepulauan Meranti Regency	2,74	Good

12	Government of Pekanbaru City	3,42	Good
13	Government of Dumai City	3,43	Good

Source: Minister for Administrative Reform and Bureaucratic Reform of the Republic of Indonesia, 2024

The research indicates that the regional government in Riau province is predominantly characterized by a good predicate. Several regional governments are currently in the process of building electronic-based services that continue to obtain satisfactory ratings. Surprisingly no local government has yet obtained a very good reputation.

The regional government's strength must be bolstered by service users, namely citizens. The multitude of programs developed will certainly be devoid of importance in the absence of their users. The rise in demand for government-developed applications as a demonstration of the local government's responsibility to serve its citizens requires careful consideration. Both governments and citizens can obtain and utilize data for various objectives, including decision-making, conversation, coproduction, surveillance, and monitoring (Agostino et al., 2022).

The author argues that the current body of literature lacks research that focuses on the goals of citizens as users of applications. The research findings on the intentions of e-government service users in local governments in Riau serve as the foundation for the present research. Afrizal, M. Wallang, *et al* (2023), stated there is only a small percentage of users in local governments who believe that the prepared applications have not achieved optimal performance. In addition, there exists a deficiency in citizen trust in the government (Afrizal, Saputra and Ilyanzah 2023) and Public skepticism against government initiatives in deploying communication and information technologies (Karman et al., 2021). The examination of e-government user intentions can be approached through several theories of technology adoption, including motivation model, theory of planned behavior, theory of reasoned action, technology acceptance model, combined TAM & TPB, model of PC utilization (MPTU), innovation diffusion theory and social cognitive theory. The latest framework in this area is the Unified Theory of Acceptance and Use of Technology latest model is the UTAUT Model (Afrizal, Wallang, et al., 2023a; Afrizal & Wallang, 2021).

The UTAUT model, which expands on the unified theory of acceptance and use of technology, suggests that performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitation conditions (FC) all contribute positively to the adoption of information technology or information systems (Venkatesh, 2021; Venkatesh et al., 2003, 2012). Thus, it is imperative to validate the suitability of this model in the context of e-government adoption. Fortunately, previous studies have already confirmed that PE, EE, SI, and FC are helpfully correlated with the adoption of e-government (Williams et al., 2015; Mwilongo & Kachota, 2023).

The subsequent model to be integrated is the technology acceptance model (TAM). The Technology Acceptance Model (TAM) is a widely recognized theory and model in the literature that has achieved significant popularity. It has been successful in explaining the acceptance and usage of e-government services (Davis FD, 1989). The Technology Acceptance Model (TAM) explains the process by which people adopt and utilize technology based on their (PU) and perceived ease of use (PEOU) (Zubir & Latip, 2022).

The Technology Acceptance Model (TAM) is a theoretical framework that investigates the process by which individuals acquire and utilize specific technology. When users are introduced to a novel software system, various factors influence their decisions regarding how and when to utilize it (Nurkholis & Anggraini, 2020). The Technology Acceptance Model (TAM) served as a theoretical framework to establish the precise connections between two key elements, namely perceived usefulness and perceived ease of use, and users' cognitive processes, intents, and actual behavioral intentions towards usage. The model was developing a more comprehensive comprehension of the variables influencing citizens" attitudes towards the implementation of e-government (Khamis, 2023). The Technology Acceptance Model (TAM) can accurately assess how individual behavioral intentions are influenced by their attitudes toward technology usage (Dwivedi et al., 2017). Trust in the Internet refers to the subjective extent to which citizens believe that using an online e-government system is secure and has no threat to their privacy.

Researchers have utilized the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) to examine the adoption of e-government from diverse viewpoints. The level of trust in both the internet and the government influences the intention to use technology (Schaupp & Carter, 2005). Trust is a multifaceted concept that spans several disciplines and is therefore defined from different perspectives to suit specific contexts. Nevertheless, the general basis of trust states that promises made by one party can be relied upon by the other party (Zhao & Khan, 2013). Trust plays an important part in analyzing the intentions of e-government users, especially when considering the integration of trust with another theory of technology adoption (Wallang, 2018).

The Theory of Planned Behavior (TPB) is an expansion of the Theory of Reasoned Action (TRA) that was proposed to address limitations in the original TRA model about situations where individuals have little control over their actions (Ajzen, 1991). The unique aspect of this TPB model is the inclusion of user-perceived behavior. This theory argues that the combination of behavioral control and behavioral objectives can directly predict behavioral outcomes. The Technology Acceptance Model (TPB) has been effective in understanding the individual's acceptance and usage of many technologies (Dwivedi et al., 2017).

Attitude acts as a mediating variable, resulting in an increased overall intention to use a system. Several studies have been conducted in the areas of public administration, especially e-government (Hung et al., 2013). More precisely, this study used a model where attitude played a role in mediating the effect of three fundamental factors from UTAUT (performance expectancy, effort expectancy, and social influence) on behavioral intention (Rana et al., 2017). The study showed that attitude was the most significant factor in explaining the behavioral intention to use e-government services (Verkijika & Wet, 2018)

The proposed model is a combination of three models: UTAUT, TAM, and TPB. The UTAUT paradigm incorporates four key constructs: performance expectancy, effort expectancy, social influence, and facilitating conditions. The TAM model is highly effective in predicting and understanding the adoption of e-government and other technological innovations. Therefore, numerous scholars utilize the Technology Acceptance Model (TAM) to comprehend the acceptance of e-government.

The theoretical basis of TAM rests on the theory of reasoned action (TRA), which argues that beliefs have a direct impact on intentions, and these intentions, in turn, shape one's behaviors (Xie et al., 2017a). The research has identified a suggested framework consisting of three models that have been shown to influence attitudes, which in turn influences the intention to use (Alhadid et al., 2022; Lai, 2017).

This study will integrate multiple theoretical frameworks for technology adoption, specifically the Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB), together with the updated Unified Theory of Acceptance and Use of Technology (UTAUT) Model and this research aims to address the existing knowledge gap and will be the primary subject of discussion in this article.

METHOD

This study utilizes a quantitative approach. The study included 97 respondents who had previous experience with government services. The sampling technique uses the purposive random sampling technique. The study utilized a questionnaire as the research instrument (Setiawan et al., 2024). The questionnaire items were obtained from similar research studies and distributed throughout 12 cities and districts within the Riau Province region. The data used consists of primary data obtained from respondent feedback and secondary data obtained from reliable sources. To evaluate the suggested theoretical framework, the software tool Partial Least Squares Structural Equation Modeling (PLS-SEM) will be employed, specifically utilizing the Smart PLS application. This method can evaluate the theoretical framework that includes a formative concept with intricate connections between the concepts, and it can handle data that does not follow a normal distribution (Hair Jr et al., 2014).

This study involved the integration of three models of technology adoption UTAUT, TPB, TAM and the development of seven hypotheses:

1. PE significantly and positively affects Attitude (ATT)
2. EE significantly and positively affects Attitude (ATT)
3. SI significantly and positively affects Attitude (ATT)
4. FC significantly and positively affects Attitude (ATT)
5. PR significantly and positively affects Attitude (ATT)
6. Trust of Application (ToA) significantly and positively affects Attitude (ATT)
7. Attitude (ATT) significantly and positively affects Intention To Use (ITU)

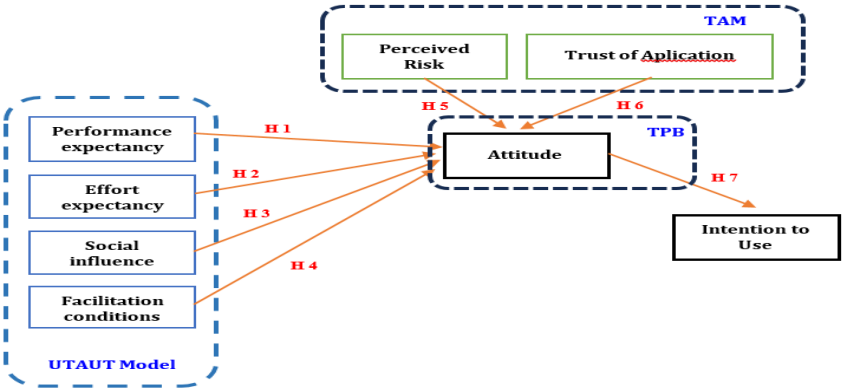


Figure 2. A proposed framework for the research

RESULTS AND DISCUSSION

Validity and reliability test

In the beginning, all primary data collected will undergo testing to assess their validity and reliability. This will be done using multiple pieces of evidence. In order to determine the accuracy of data in SEM PLS analysis, the initial phase will involve assessing the Outer Loading, Average Variance Extracted (AVE), Fornell-Larcker Criterion, and Cross-loading. The determination is made by conducting loading factor testing, utilizing the Outer Loading value of the indicator (Table 2):

Table 2. Outer Loading test

	ATT	EE	FC	ITU	PE	PR	SI	ToA
ATT1	*0.742*							
ATT2	*0.735*							
ATT3	*0.885*							
ATT4	*0.753*							
ATT5	*0.874*							
ATT6	*0.787*							
EE2		*0.820*						
EE3		*0.863*						
EE4		*0.877*						
EE5		*0.828*						
FC1			*0.795*					
FC2			*0.760*					
FC3			*0.855*					
FC4			*0.719*					
FC5			*0.840*					
ITU1				*0.784*				
ITU2				*0.892*				
ITU3				*0.832*				
ITU4				*0.734*				
PE1					*0.798*			
PE2					*0.772*			
PE3					*0.870*			
PE4					*0.760*			
PE5					*0.863*			
PE6					*0.753*			
PR1						*0.798*		
PR2						*0.877*		
PR3						*0.864*		
SI1							*0.782*	
SI2							*0.765*	
SI3							*0.834*	
SI4							*0.756*	
SI5							*0.728*	
ToA1								*0.805*
ToA2								*0.881*
ToA3								*0.838*

Source: Results of data analysis using Smart PLS

All valid results have been obtained from the analyzed data. This complies with the requirement that all other loading values must be greater than 0.7. Hair Jr *et al.* (2014) suggest that the highest level of capacity is higher than 0.7. This indicates that each indicator in possession can measure the variable being utilized. In addition, the subsequent test entails evaluating the average variance extracted (AVE) produced from the data (Table 3):

Table 3. Average variance extracted (AVE), Cronbach's Alpha, and Composite Reliability test

	Cronbach's Alpha	Composite Reliability	Averege Variance Extracted (AVE)
ATT	*0.885*	*0.913*	*0.637*
EE	*0.869*	*0.910*	*0.718*
FC	*0.854*	*0.896*	*0.633*
ITU	*0.828*	*0.886*	*0.661*
PE	*0.890*	*0.916*	*0.647*
PR	*0.802*	*0.884*	*0.718*
SI	*0.833*	*0.882*	*0.599*
ToA	*0.796*	*0.879*	*0.709*

Source: Results of data analysis using Smart PLS

The data clearly shows that all the utilized construct variables have values of average variance extracted (AVE) that are more than 0.5. This demonstrates that each recorded value is valid. This claim is confirmed by Hair Jr *et al.* (2014), which shows that a desirable average variance extracted (AVE) value is greater than 0.5. This data presents evidence that all the variables used can be accurately measured as described.

The Cronbach's Alpha values for the utilized variables are as follows: ATT (0.885), EE (0.869), FC (0.854), ITU (0.828), PE (0.890), PR (0.802), SI (0.833) and ToA (0.796). All of these values exceed the threshold of 0.7. Meanwhile, Composite Reliability in ATT (0.913), EE (0.910), FC (0.896), ITU (0.886), PE (0.916), PR (0.884), SI (0.882) and ToA (0.879). All of these values are larger than 0.7. According to Hair Jr *et al.* (2014), the maximum acceptable value for Cronbach's Alpha and Composite Reliability is 0.7. Evidence has shown that the implemented variables are precise and capable of measuring the variables.

The following part will present the results of the Fornell-Larcker Criterion test, which are as follows (Table 4):

Table 4. Fornell-Larcker Criterion test

	ATT	EE	FC	ITU	PE	PR	SI	ToA
ATT	***0.798***							
EE	*0.601*	***0.847***						
FC	*0.688*	*0.464*	***0.795***					
ITU	*0.773*	*0.668*	*0.792*	***0.813***				
PE	*0.674*	*0.583*	*0.618*	*0.687*	***0.804***			
PR	*0.177*	*0.007*	*0.025*	*0.030*	*0.013*	***0.847***		
SI	*0.671*	*0.567*	*0.716*	*0.624*	*0.761*	*-0.049*	***0.774***	
ToA	*0.209*	*0.088*	*0.048*	*0.082*	*0.216*	*0.193*	*0.062*	***0.842***

Source: Results of data analysis using Smart PLS

The correlation between ATT and ATT is found to be 0.798, The correlation between EE and EE is found to be (0.847), FC and FC (0.795), ITU and ITU 0.813, PE and PE (0.804), PR and PR (0.847), SI and SI 0.774, ToA and ToA (0.842). These results indicate that the correlation value between the same variables is higher than the correlation with other variables. Following this, the Cross-Loading test, outlined in the subsequent table, will be conducted (Table 5):

Table 5. Cross Loading values

	ATT	EE	FC	ITU	PE	PR	SI	ToA
ATT1	***0.742***	*0.336*	*0.532*	*0.600*	*0.500*	*0.141*	*0.485*	*0.152*
ATT2	***0.735***	*0.439*	*0.363*	*0.559*	*0.487*	*0.156*	*0.441*	*0.117*
ATT3	***0.885***	*0.559*	*0.644*	*0.731*	*0.651*	*0.150*	*0.637*	*0.200*
ATT4	***0.753***	*0.596*	*0.553*	*0.631*	*0.480*	*0.101*	*0.517*	*0.095*
ATT5	***0.874***	*0.491*	*0.653*	*0.644*	*0.565*	*0.139*	*0.556*	*0.177*
ATT6	***0.787***	*0.431*	*0.507*	*0.509*	*0.523*	*0.170*	*0.554*	*0.257*
EE2	*0.418*	***0.820***	*0.321*	*0.511*	*0.439*	*-0.036*	*0.422*	*0.002*
EE3	*0.474*	***0.863***	*0.410*	*0.584*	*0.546*	*-0.049*	*0.491*	*0.060*
EE4	*0.599*	***0.877***	*0.485*	*0.602*	*0.455*	*0.077*	*0.486*	*0.045*
EE5	*0.515*	***0.828***	*0.332*	*0.557*	*0.538*	*0.008*	*0.515*	*0.182*
FC1	*0.571*	*0.355*	***0.795***	*0.601*	*0.484*	*-0.041*	*0.628*	*0.068*
FC2	*0.640*	*0.568*	***0.760***	*0.713*	*0.716*	*0.087*	*0.641*	*0.166*
FC3	*0.547*	*0.361*	***0.855***	*0.618*	*0.351*	*0.036*	*0.495*	*0.001*
FC4	*0.428*	*0.206*	***0.719***	*0.435*	*0.383*	*-0.040*	*0.496*	*-0.001*
FC5	*0.503*	*0.279*	***0.840***	*0.469*	*0.457*	*0.035*	*0.557*	*-0.085*
ITU1	*0.646*	*0.657*	*0.599*	***0.784***	*0.512*	*0.038*	*0.495*	*0.020*
ITU2	*0.724*	*0.560*	*0.708*	***0.892***	*0.677*	*0.083*	*0.620*	*0.119*
ITU3	*0.637*	*0.464*	*0.580*	***0.832***	*0.572*	*0.014*	*0.431*	*0.147*
ITU4	*0.466*	*0.490*	*0.445*	***0.734***	*0.441*	*-0.069*	*0.474*	*-0.058*
PE1	*0.542*	*0.461*	*0.592*	*0.558*	***0.798***	*-0.039*	*0.758*	*0.069*
PE2	*0.545*	*0.630*	*0.540*	*0.634*	***0.772***	*0.025*	*0.600*	*0.094*
PE3	*0.627*	*0.466*	*0.481*	*0.584*	***0.840***	*0.035*	*0.587*	*0.308*
PE4	*0.475*	*0.489*	*0.365*	*0.499*	***0.760***	*0.023*	*0.482*	*0.169*
PE5	*0.473*	*0.358*	*0.435*	*0.509*	***0.863***	*0.022*	*0.601*	*0.165*
PE6	*0.556*	*0.397*	*0.543*	*0.513*	***0.753***	*-0.001*	*0.632*	*0.214*
PR1	*0.143*	*-0.051*	*0.000*	*-0.044*	*-0.056*	***0.798***	*-0.137*	*0.148*
PR2	*0.156*	*0.012*	*0.014*	*0.051*	*0.028*	***0.877***	*-0.029*	*0.106*
PR3	*0.151*	*0.053*	*0.048*	*0.065*	*0.058*	***0.864***	*0.037*	*0.237*
SI1	*0.423*	*0.459*	*0.471*	*0.385*	*0.630*	*0.031*	***0.782***	*-0.035*
SI2	*0.487*	*0.434*	*0.495*	*0.414*	*0.487*	*-0.004*	***0.765***	*0.086*
SI3	*0.628*	*0.475*	*0.567*	*0.547*	*0.711*	*-0.034*	***0.834***	*0.075*
SI4	*0.543*	*0.402*	*0.624*	*0.504*	*0.560*	*-0.029*	***0.756***	*0.041*
SI5	*0.474*	*0.427*	*0.603*	*0.541*	*0.541*	*-0.149*	***0.728***	*0.057*
ToA1	*0.141*	*0.015*	*-0.028*	*0.082*	*0.150*	*0.142*	*-0.013*	***0.805***
ToA2	*0.188*	*0.111*	*0.106*	*0.082*	*0.202*	*0.154*	*0.071*	***0.881***
ToA3	*0.191*	*0.082*	*0.026*	*0.047*	*0.188*	*0.188*	*0.083*	***0.838***

Source: Results of data analysis using Smart PLS

The correlation between ATT1, ATT2, ATT3, ATT3, ATT4, AT5, AT6 and ATT had values of (*0.742, 0.735, 0.885, 0.753, 0.874, 0.787*). Correlation between EE2, EE3, EE4, EE5 had values (*0.820, 0.863, 0.877, 0.828*). Correlation between FC1, FC2, FC3, FC4, FC5 and FC had values (*0.795, 0.760, 0.855, 0.719, 0.840*). Correlation between ITU1, ITU2, ITU3, ITU4 and ITU had values (*0.784, 0.892, 0.832, 0.734*). Correlation between PE1, PE2, PE3, PE4, PE5, PE6 and PE had values (*0.798, 0.772, 0.840, 0.760, 0.863, 0.753*). Correlation between PR1, PR2, PR3 and PR had value (*0.798, 0.877, 0.864*). Correlation between SI1, SI2, SI3, SI4, SI5 and SI had values (*0.782, 0.765, 0.834, 0.756, 0.728*) and correlation

between ToA1, ToA2, To3, and ToA had values (0.805, 0.881, 0.838). Based on the comprehensive data, it is evident that the underlying elements of each variable, which are correlated with the variable itself, show a greater correlation value compared to the correlation value with other variables.

Evaluation of the structural equation model

During the evaluation of the structural equation model, attention will be given to the R Square value and path coefficient. Furthermore, additional information can be found in the analysis results (Table 6).

Table 6. R Square values

	R Square	R Square Adjusted
ATT	*0.653*	*0.630*
ITU	*0.597*	*0.593*

Source: Results of data analysis using Smart PLS

The collected data show that the R Square ATT value is 0.653, indicating that the endogenous variable contributes 65%, while the remaining 35% is impacted by other variables. Meanwhile, for ITU it is 0.597, indicating that the endogenous variable contributes to 41%. The table below shows the Path Coefficient values

Table 7. Path Coefficients values

	ATT	ITU
ATT		*0.773*
EE	*0.239*	
FC	*0.351*	
ITU		
PE	*0.186*	
PR	*0.154*	
SI	*0.144*	
ToA	*0.092*	

Source: Results of data analysis using Smart PLS

The data analysis reveals correlations between the ATT variable and other variables: EE and ATT have a correlation coefficient of 0.239, FC and ATT have a correlation coefficient of 0.351, PE and ATT have a correlation coefficient of 0.186, PR and ATT have a correlation coefficient of 0.154, SI and ATT have a correlation coefficient of 0.144, and ToA and ATT have a correlation coefficient of 0.092. The correlation between the ITU variables ATT and ITU is 0.773. Based on this data, it is evident that the correlation is positive. To comprehend the significance of each variable, one might consult the bootstrapping technique described below (Table 8):

Table 8. T Statistics results

	T Statistics (O/STDEVI)	
ATT -> ITU	*17.226*	*significant*
EE -> ATT	*2.677*	*significant*
FC -> ATT	*3.385*	*significant*
PE -> ATT	*1.542*	*No significant*
PR -> ATT	*2.034*	*significant*
SI -> ATT	*1.722*	*No significant*
ToA -> ATT	*1.301*	*No significant*

Source: Results of data analysis using Smart PLS

The findings of the Bootstrapping analysis indicate that the T Statistics (O/STDEVI) values for the relationships ATT -> ITU (17.226), EE -> ATT (2.677), FC -> ATT (3.385), and PR -> ATT (2.034) are all greater than 1.96, indicating that these relationships are significant. Meanwhile, the T Statistics (O/STDEVI) value for the relationships PE -> ATT (1.542), SI -> ATT (1.722), and ToA -> ATT (1.301) is below 1.96, indicating that these relationships are not significant. The next step to consider is the Predictive Relevance, which assesses the quality of the observations made. To observe it with the use of blindfolding procedures (Table 9):

Table 9. Predictive relevance

	Q2 (=1-SSE/SSO)
ATT	*0.398*
ITU	*0.378*

Source: Results of data analysis using Smart PLS

The tests showed a Q2 (=1-SSE/SSO) result of 0.398 for ATT and 0.378 for ITU. Both values are greater than zero, indicating that the observation value is satisfactory. Conversely, if the value is less than zero, the observation findings are considered not good. Meanwhile, the Fit Model was tested, and the following data was obtained (Table 10):

Table 10. Model Fit

	Saturated Model
NFI	***0.536***

Source: Results of data analysis using Smart PLS

Considering the data, it can be shown that the NFI value of the model used is 0.536, representing a percentage of 53%. It may be inferred that the model used is 53% fit.

The utilization of e-government services to satisfy community needs is a well-established service idea now being applied in Indonesia. Nevertheless, with the growing need for these services, individuals are becoming increasingly inclined to adjust to the prevailing circumstances. In addition, concurrently, the government, as a service provider, is likewise striving to deliver its services in an ideal manner.

The purpose of this study is to determine the intention of citizens to use e-government, specifically through the application system offered by the local government. Based on the research findings in hypothesis 1, specifically on performance expectancy (PE) it does not significantly and positively affect Attitude. It is evident that citizens while using government applications, do not believe that the prepared system will significantly enhance their user experience, which does not influence their attitude toward utilizing such services. This stands in opposition to the results released by Alhadid *et al.* (2022) which state that performance expectancy (PE) has a significant effect on attitudes.

Effort expectancy (EE) significantly and positively affects Attitude. Citizens perceive that the level of ease related to utilizing the system can impact their attitude toward the adoption of government applications. A study from Biruk & Abetu (2019) also showed that attitude toward using an application is highly influenced by effort expectancy. This result is in direct opposition to the results made by (Verkijika & Wet, 2018). These results are in direct opposition to the results of the study conducted (Verkijika & Wet, 2018) the

study found that there was no significant connection between effort expectancy and attitude. However, SI does not significantly and positively affect Attitude. In this situation, the individual's mindset stays impervious to external social influences. Evidence suggests that the existence of social influence has no significant impact on users' attitudes. These findings contradict the results of the study conducted by Biruk & Abetu (2019), the aforementioned study also demonstrated that the intention to use an application is greatly impacted by social influence. A study by Verkijika & Wet (2018) shows that when services provided by e-Government receive support from individuals nearby, such as family, friends, and colleagues, social factors will readily foster favorable feelings about these services.

The subsequent hypothesis argues that the facilitating conditions (FC) significantly and positively affect Attitude. The government's infrastructure and the available equipment and procedures that facilitate the usage of the system can impact individuals' inclination toward utilizing e-government apps. The research findings align closely with the findings provided by Alhadid *et al.* (2022) which state that facilitating conditions (FC) have a significant effect on attitudes. Furthermore, Perceived risk (PR) significantly and positively affects Attitude. The user has uncertainty when they are unable to anticipate the consequences of their decisions when using an application. The extent of the perceived risk is contingent upon the user's assessment. Nevertheless, the government provided a comprehensive explanation. The government's promotion of privacy and security measures for e-government services is a commendable initiative to enlighten citizens about the potential implications of data breaches. Undoubtedly, this will enhance citizens' confidence in the government.

The results align closely with the results by Alhadid *et al.* (2022) The findings indicate that the perceived risk has a favorable influence on the attitude towards adopting application services, which in turn affects the intention to use. Veeramootoo *et al.* (2018) show that the perceived risks diminish when users exhibit favorable views and confidence toward government service. The lack of a meaningful association between perceived risk and intention to continue using technology. Meanwhile, this finding contradicts (Xie et al., 2017a). Research indicates that the impact of perceived risk on the intention to use suggests that perceived risk is not a strong predictor of technology adoption (Zolotov et al., 2018).

Besides that, Trust of Application (ToA) does not significantly and positively affect Attitude. Citizens' attitudes towards using the application are not affected by their trust in the application developed in this research. This is due to the government system not having options. For example, in the case of processing permits, there is only one application available. Consequently, regardless of personal preferences, citizens are going to keep using it without influencing their attitude toward the system. There are no choices to consider when obtaining services, and citizens are required to utilize them. This result is in contrast to (Zolotov et al., 2018), that statement suggests that those who possess a greater degree of trust in government services are more likely to trust and use the electronic systems provided by the government. Final hypothesis Attitude significantly and positively affects ITU. Many studies reveal that attitudes affect user intentions in using applications that have been provided by the government (Xie *et al.,* 2017b; Biruk & Abetu, 2019; Dwivedi *et al.*, 2017).

CONCLUSION

The study's findings reveal that dimensions such as effort expectancy (EE), facilitating conditions (FC), and perceived risk (PR) have a significant and positive influence on people's attitudes towards e-government. Additionally, attitude (ATT) is an important factor in influencing and sustaining citizens' intentions to use e-government. However, it is worth noting that performance expectancy (PE), social influence (SI), and Trust of application (ToA) do not have an important effect on Attitude.

The model we propose includes 7 hypotheses that are expected to yield fresh insights in the future regarding the intents of e-government users. We anticipate that the framework will serve as a valuable resource for the local government to enhance its electronic services and contribute valuable insights for the Indonesian government to consider when implementing enhancements to e-government services. Besides that, further researchers can use and evaluate this model in other cities. Researchers can even add more variables and investigate using various approaches to produce findings that contribute to the advancement of e-government.

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