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Understanding the Role of Trust Mediation in e-Government Adoption in Citizenship Administration Services Policies in Bantul Regency Using *Disdukcapil* Smart Application

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ABSTRACT

This study investigates the role of trust in the acceptance of e-government technologies using a modified Unified Model of Electronic Government Adoption (UMEGA) that includes trust as a mediating variable. This study involved 107 respondents from six sub-districts in Bantul Regency, focusing on the use of the *Disdukcapil* Smart application in e-government citizenship administration services. The findings indicate that performance expectancy, effort expectancy, and perceived security, which are managed by e-government providers, are the determinants of trust. Meanwhile, social influence and privacy risk, which are not managed by e-government providers, are disregarded. Facilitating conditions like citizen-owned infrastructure ease the use of system. The study confirms that trust level influences public participation in bureaucracy, as shown by behavioral intentions in using e-government.

I. INTRODUCTION

The creation of a government with good governance is the principle and ideal condition to be realized by any government. In order to create good governance, the government needs to build a climate of public trust and avoid deviant behaviour so that it gets strong support from the community (Salminen & Ikola-Norrbacka, 2010). The issue of trust is seen as an important foundation for building legitimacy and a sustainable political system (Camões & Mendes, 2019). Several empirical evidences stated that the increase of public trust towards the government and its bureaucracy will result in higher community participation (Lee & Schachter, 2019).

E-government is a strategy and policy implemented by central to regional governments for

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improving the quality of public services (Gauld, 2006). The implementation of e-government is widely used by the government as a strategy in creating a climate of trust because it is closely related to the effectiveness of institutional performance, which is typically characterized by cheap, fast, efficient, and effective public services (Haning et al., 2020). As a G2C (Government to Citizen) service provider, the Bantul Regency Government is mandated to conduct the public services, one of which concerning the citizenship administration. It is closely related to the primary duties and responsibilities of the Population and Civil Registration Office (*Disdukcapil*).

In supporting e-government, the *Disdukcapil* of Bantul Regency innovated citizenship administration services by providing digital-based services in the form of *Disdukcapil* Smart application. This application has been provided and can be downloaded through the Google Play Store. This app contains various citizenship administration service features, such as changing e-KTP, making Child Identity Card (KIA), birth certificates, data changes, death certificates, marriage certificates, divorce certificates, moving in, and moving out. The use of the *Disdukcapil* Smart app as a valuable service for citizenship administration aims to benefit the community by increasing effectiveness and efficiency in terms of manpower, costs, and time.

Despite the benefits of incorporating technology into the delivery of public services, many countries still face several challenges that impede their e-government implementation, such as a lack of support and infrastructure from the government (Van de Walle et al., 2008), the fact that people still prefer using traditional methods (Hooda et al., 2022), and vulnerabilities in terms of privacy and security (Burt, 2019).

Understanding the roots of trust is critical in order to address the factors that hinder society's adoption of technology in e-government (Wang et al., 2020). Trust is formed through one's assessment of the advantages and disadvantages. In other words, trust is formed from the advantages offered by e-government compared to the losses incurred so that those in power need to pay more intensive attention (Yuen et al., 2021).

Based on that background, it is necessary to investigate the factors that can create the climate of public trust concerning the implementation of e-government. In addition, it is also important to know how a trust towards e-government can influence the behavioural intention of the community to engage further in supporting government policies. Therefore, it is necessary to conduct an in-depth study regarding the role of trust as a mediating variable in e-government implementation, particularly in the context of digitalization technology in citizenship administration services using *Disdukcapil* Smart application in Bantul Regency.

Many earlier studies, including those by Khalilzadeh et al. (2017), Shaw and Sergueeva (2019), Arfi et al. (2021), Hanif and Lallie (2021), and Tomić et al. (2022), had raised the issue concerning how trust affects people's behavioural intentions when it comes to the use of technology. However, the majority of these studies only focused on the direct effects of trust and did not address the determinants of trust itself.

In addition, the previous studies that focused on the determinants of trust in e-government implementation has been carried out by Carter & Belanger, 2008; Teo et al., 2008; Rehman et al., 2016; and Hooda et al., 2022. However, these studies revealed that there were still various interpretations on the determinants of trust.

In explaining e-government adoption, previous studies had tried to adopt a number of frameworks in order to analyse the factors that influence people's intention to use the technology. For example, Hung et al. (2006) using the Technology Acceptance Model (TAM) (Davis, 1989), Jasimuddin et al. (2017) using Theory of Planned Behavior (TPB) (Ajzen, 1991), and AlAwadhi & Morris (2008) using Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003). Dwivedi et al. (2017) model research addressed the need for a technology acceptance model in e-government by introducing the Unified Model of Electronic Government Adoption (UMEGA) model theory, which refines the UTAUT model for the specific use in the e-government context.

Moreover, Namahoot and Jantasri (2022) also used UTAUT model in their study to measure trust in the mediation of technology user behaviour tendencies and behavioural intentions in non-government context. Nonetheless, there has been no research to this day that applied this model in the context of e-government.

Considering the importance of using and developing relevant theory, this study develops the UMEGA technology acceptance model introduced by Dwivedi et al. (2017) with the consideration that this model is an update of several models so that it particularly suitable in the context of technology acceptance of e-government.

II. ANALYTICAL FRAMEWORK

A. Theory and Hypothesis

1) E-Government and Its Conditions in Indonesia

E-government is defined as government activities that produce services for the community using the leverage of information technology as the basis of operation to improve the traditional implementation (McNabb, 2009; Stewart & Clarke, 1987). It is anticipated that e-government will have a positive impact on the values held by government organizations (Haning et al., 2020). The use of e-government is beneficial in streamlining and improving the process of service transactions between the government and stakeholders like communities, effort organizations, and between government organizations. For this reason, the resources owned by the government must be maximized in order to ensure that all stakeholders receive the best public services. Currently, e-government has been used by political leaders as a driver engine in making changes and openness of public services. Governments around the world have recognized the use of e-government to generate a significant impact on organizational performance, encourage innovation, develop investment, and conduct financial management through the support of information technology infrastructure (Gauld, 2006). Nonetheless, in practice, e-government implementation in Indonesia still faces several obstacles, such as poor IT infrastructure, incompetent human resources, unprepared citizens for accepting and adopting technology, and an unsupportive environment (Sabani et al., 2019).

2) Trust in E-Government

Public confidence in the government's ability to provide digital-based services is very important for consideration in the development of e-government extensively (Carter & Belanger, 2008). In the context of e-government, the community must believe that e-government service providers, namely the government, possess the ability and supporting infrastructure to run and secure the system (Carter & Belanger, 2008). Trust is considered a critical factor for the success of e-government implementation, as it greatly facilitates an effective and efficient public service (Papadopoulou et al., 2010). Thus, strong support of public trust is seen as the key to successful democratic governance. In contrast, low public trust can lead to low levels of compliance, risk aversion, investment delays, and weak public innovation (OECD, 2013).

3) Security and Privacy Risks in E-Government

Barriers often cited in previous studies relate to the need for adequate security and privacy in e-government (Conklin, 2007; Ebrahim & Irani, 2005). The emergence of these obstacles is none other than the nature of e-government itself, which has the basic concept of openness and availability so that it creates gaps in security and privacy, either consciously or unconsciously (Alfawaz et al., 2008).

Security and privacy controls are keys for management success. All parties do not want any interference that can harm various parties in the transaction process. According to Hutton (1996), the public sector is very sensitive to information security incidents. Even if the incidents are not directly related to e-government, they still cause a negative impact on its implementation. This is in addition to objective security through investment that is purposefully made for security (Tomić et al., 2022).

An application known as Information Security Management System (ISMS) is a step that can be taken by the government for supporting the management and control of security and privacy in e-government. This management process is carried out by implementing policies regarding security standards and describing the processes and controls needed to manage and control security in e-government systems (Alfawaz et al., 2008).

4) Unified Model of Electronic Government Adoption (UMEGA)

UMEGA model uses traditional technology acceptance constructs that don't accurately capture the characteristics of e-government. Instead, it primarily aims to measure the dynamics of organizational management, thus causing the research on technology acceptance in the context of e-government has drawn a lot of criticism (Dwivedi et al., 2017). The performance expectancy, effort expectancy, social influence, and facilitating conditions variables are still used in the UMEGA model, which is an improvement of the UTAUT model. Besides, the attitude and perceived risk variables are recently added to represent the characteristics of e-government. The majority of these variables already characterize the construction of several models to explain technology acceptance. This modified UMEGA model improves the original UTAUT model by adding the role of attitude as a mediating variable due to the lack of individual constructs in the initial model. The decision to add attitude variable was based on a study by Davis (1989), that individuals develop certain behaviour intention, which they believe will enhance their performance beyond any positive or negative feelings they may have towards the behaviour. This model eliminates the use of behaviour variable so that it is better in capturing data from various levels of digital capabilities from both service adopters and non-adopters. Age, gender, experience, and volunteering are also eliminated from the model because these moderator variables are too static to be set. In addition, the appearance of moderators will impede the basic theory used to develop the model. This explains why the majority of studies using UTAUT only used this model partially or omitted it entirely.

5) Overview of the Proposed Research Model

It should be noted that this study carries the concept expressed by Singh et al. (2017) that the mediating role of belief in the use of technology can be explained using technology acceptance theory. As a refinement, this study used a technology acceptance model that is more suitable in the context of e-government, namely the UMEGA model (Dwivedi et al., 2017) by modifying it so that it can be used in response to the mediating role of trust.

Modification of the model was carried out, among other things, by shifting the mediating variable from attitude to trust. Trust is a compromise element of the assessment concerning the advantages and disadvantages perceived by service users (Yuen et al., 2021). In other words, trust will be formed if the advantages generated by e-government outweigh the disadvantages. Therefore, the perceived benefits of using technology can be used as an indicator in determining one's trust (Cai et al., 2023).

Trust, risk, and security are interrelated variables in technology acceptance (Khalilzadeh et al., 2017; Shin, 2009). In relation to citizenship administration services that involve disclosing personal data, the role of perceived security is related to risk and trust. For that reason, this study adds the perceived security variable into the model in order to examine its relationship to risk and trust. Self-perception of security is the extent to which a person believes that using e-government will not put them at risk (Shin, 2009). Furthermore, changes were also made to the risk perception variable. This study uses the context of e-government's citizenship administration services to make the problem of use risk more specifically related to privacy concerns. The disclosure of population data in application now more specifically refers to how a person perceives the potential outcomes of providing personal information to the government online. The term privacy risk is used if the risk that occurs is closely related to privacy (Khalilzadeh et al., 2017). Thus, risk perception variable in this

study is developed in a more specific direction, namely becoming a privacy risk.

6) Research Hypothesis

For the proposed conceptual model, eight hypotheses were formulated based on causal relationships among the eight constructs used. The development of these hypotheses is briefly summarized as follows:

a) Performance Expectancy

Performance expectancy can be defined as an expectation regarding how adopting a system will provide an increase in user's performance (Venkatesh et al., 2003). Through the use of TAM (Davis, 1989) and DPTB (Taylor & Todd, 1995), it was concluded that perceived usefulness significantly affects the user's attitude towards technology. Based on this, performance expectancy in the context of e-government imply benefits to users, such as efficiency, effectiveness, productivity, quality, transparency, accountability, and democratization in the delivery of public services (Haning et al., 2020). In this study, performance expectancy is defined as feelings about the benefits individuals receive in using the *Disdukcapil* Smart application in citizenship administration services in Bantul Regency. The benefits obtained are the determining factors for someone to feel the advantages of using the technology, while trust depends on one's assessment of usability and function (Hegner et al., 2019). Therefore, the technology's perceived usefulness function can promote a positive outlook to users and ultimately contribute to trust (Zhang et al., 2019). Therefore, the proposed hypothesis can be drawn as follows:

H1: Performance expectancy has a positive and significant effect on trust

b) Effort Expectancy

Effort Expectancy is the user's belief in obtaining a level of ease in using the system (Venkatesh et al. 2003). In this study, effort expectancy are defined as the feelings about the convenience that individuals receive in using e-government citizenship administration services through the *Disdukcapil* Smart application. When a technology provides convenience in obtaining, using, or interacting, the usability function will increase, which will ultimately contribute to trust (Zhang et al., 2019). Therefore, the proposed hypothesis is formulated as follows:

H2: Effort expectancy has a positive and significant effect on trust

c) Social Influence

Social influence is the degree to which a user perceives that other people consider it important to use the system so that the user believes he/she should use the system (Venkatesh et al., 2003). Individuals' perceptions of the function of the system's use will be influenced by information about positive and negative expectancy as well as testimonials from others who have used the system (Cai et al., 2023). Finally, the optimism and confidence of others will lead to one's increased confidence to use the system. Therefore, the proposed hypothesis is formulated as follows:

H3: Social influence has a positive and significant effect on trust

d) Facilitating Conditions

Facilitating conditions are the facility support, namely the extent to which users trust the technical and non-technical infrastructure owned to support the use of the system (Venkatesh et al., 2003). In UTAUT, facilitating conditions are seen as part of behavioural control (TPB), which can directly affect behavioural intention (Ajzen, 1991; Venkatesh et al., 2003). Empirical evidence suggested that facilitating conditions have a positive effect on behavioural intention in e-government implementation (Carter et al., 2012; Dwivedi et al., 2017).

Several studies regarding technology adoption (Alrawashdeh et al., 2012; Schaper & Pervan, 2007; Urumsah et al., 2011) found that there was a positive and significant impact on the relationship between facilitating conditions and effort expectancy. A study by Alrawashdeh et al. (2012) found that facilitating conditions had a positive and significant effect on effort expectancy and the acceptance of online training systems in

Jordan. Likewise, the same relationship was also found in the context of the use of technology in occupational therapists in Australia (Schaper & Pervan, 2007) and the use of electronic services in Indonesian airlines (Urumsah et al., 2011). Therefore, based on the findings of these previous studies, the proposed hypotheses can be drawn as follows:

H4: Facilitating conditions have a positive and significant effect on behavioural intention to use e-government

H5: Facilitating conditions have a positive and significant effect on effort expectancy

e) Privacy Risk

Risk can be interpreted as a person's negative expectancy regarding the possibility of potential losses in pursuing his goals (Gefen et al., 2003). In the context of acceptance of technology, risk is inseparable from privacy. The term privacy risk is used if the risks that occur are closely related to privacy (Khalilzadeh et al., 2017). The term privacy risk can also be interpreted as a person's perception that his/her personal information will not be confidentially maintained when using e-government services (Hanif & Lallie, 2021). This perception is related to individual anxiety regarding the disclosure of personal data in online transactions (Lin et al., 2021). The problems related to privacy risk can affect the user's perception on the usefulness of the system and will have a negative impact on trust (Zhang et al., 2019). Therefore, the proposed hypothesis is formulated as follows:

H6: Privacy risk has a negative and significant effect on trust

f) Perceived Security

Perceived security reflects individual perceptions of the reliability of systems that can safeguard personal and monetary information so that it cannot be viewed, stored, and manipulated during transit or storage by unauthorized parties (Kolsaker & Payne, 2002). In this study, perceived security are defined as subjective feelings by individuals that e-government operators have performed technical solutions to ensure the security and confidentiality of user privacy that arise in citizenship administration services using the *Disdukcapil* Smart application.

Based on a study by Kim et al. (2011) on the factors influencing trust in e-commerce in South Korea, and a study by Flavián & Guinalíu (2006) on the factors that influence one's trust towards a website, it was concluded that a person's perception of security has a positive and significant impact on the development of trust. Therefore, the proposed hypothesis is formulated as follows:

H7: Perceived security has a positive and significant effect on trust

g) Behavioural Intention

Trust plays an all-encompassing role if the user has no prior experience with transforming technology-based services (Herrenkind et al., 2019). In this study, trusting the government to build a reliable e-government system in providing citizenship administration services is the basic reason for someone using the *Disdukcapil* Smart application. Previous studies have proven that trust is a major factor in determining a person's intention to adopt a new technology (Flavián & Guinalíu, 2006; C. Kim et al., 2010; Singh et al., 2017; Cai et al., 2023). Therefore, the proposed hypothesis is formulated as follows:

H8: Trust has a positive and significant effect on behavioural intention

III. METHODOLOGY

A.`Research Model

Based on the results of the development and modification of the UMEGA model, the conceptual framework of this study is displayed in Figure 1.

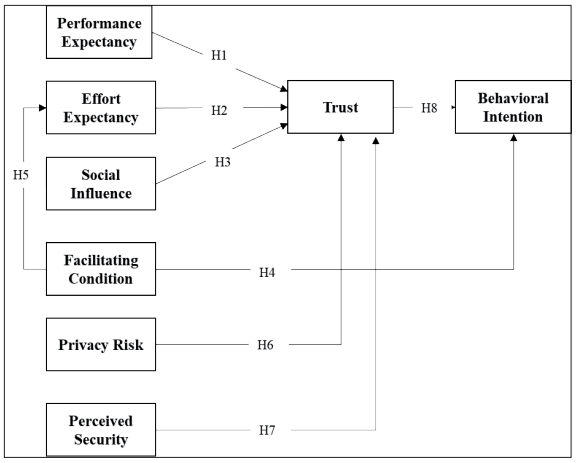

Figure 1. Research Model

B. Research Methods

The construct of this study was built using a correlational approach and quantitative method. The statistical technique used to achieve the aims of this study was Partial Least Square-Structural Equation Modelling (PLS-SEM). Then, the SmartPLS application was used as a tool in the PLS-SEM analysis technique.

Bantul Regency was chosen as the study location because the government there has been implementing e-government for citizenship administration services through the *Disdukcapil* Smart application. The target respondents as the data source to be studied were general public and staff workers of the subdistrict government, who have used the services of the *Disdukcapil* Smart application.

Using a stratified random sampling method, the sample distribution area was determined based on the Classification of the Bantul District Village Area, which is divided into urban areas and rural areas to be able to represent the characteristics of each area. The sample distribution was categorized based on population density, occupational structure (agriculture), household facilities, age range, etc.

Next, the questionnaires were distributed to the community in the selected sample areas. The questionnaire as a source of research support contained two parts, each of which functioned as a means to collect data from respondents. The first part explored the respondents' characteristics, such as age, occupation, education, domicile, experience in using the internet, and experience in using the *Disdukcapil* Smart application. Then, the second part were the questions aimed to i) measure the behavioural intention to use e-government, and ii) measure the determinants of trust using the research variables, namely performance expectancy, effort expectancy, social influence, facilitating conditions, perceived security, and privacy risks. A Likert scale with a scale of 1–5 was used to measure the research variables.

IV. RESULTS

A. Demographic Analysis

The questionnaires were distributed for approximately one month, from January 16, to February 14, 2023. The researchers distributed 120 questionnaire sheets, and 107 sheets containing the valid data were returned to researchers. Respondent profiles are presented in Table 1.

Table 1. Respondents' Profile

Information	Description	Frequency	Percentage
Gender	Man	64	60%
	Woman	43	40%
Age	17–30	31	29%
	31–40	40	37%
	41–50	20	19%
	> 50	16	15%
Education	Elementary-high school	38	36%
	College	69	64%
Job Status	General public	46	43%
	Sub-district staff	61	57%
Residence	Rural	58	54%
	Urban	49	46%
Internet Experience	1–5 Years	22	21%
	5–10 Years	27	25%
	10–20 Years	46	43%
	> 20 Years	12	11%

The demographic profile shows that 64% of the respondents were male and 43% were female, with age ranging from 17 to over 50 years old. The majority of respondents (64%) possess a university degree. In terms of job status, they were sub-district staffs (57%) and general public (43%). Respondents' residences were equally divided between rural areas (54%) and urban areas (46%). The majority of them also have known and used the internet for a long time, namely

having 10–20 years of experience in using the internet.

B. Outer Model Measurement

Outer model measurement was performed by testing the validity and reliability of the data. Table 2 presents the data validity test results, while Table 3 presents the data reliability test results.

AVE test indicates that each variable generated a value above 0.5 as a threshold in the criteria. This means the proposed variable is valid and acceptable, and the variance can be represented by each indicator in the variable. Moreover, the outer loading test for the proposed indicators generated a value above 0.7 for all variables, which means each variable shows good results and each indicator is good enough to form a variable.

Table 2. Validity Test Results

Variables and Indicators	Validity Test		
	Convergent		Discriminant
	Outer Loadings	AVE	Cross Loading & HTMT
	> 0.70	> 0.50	
Performance Expectancy			
1. PERF_1	0.906	0.741	fulfilling
2. PERF_2	0.890		
3. PERF_3	0.904		
4. PERF_4	0.812		
5. PERF_5	0.785		
Effort Expectancy			
1. EFF_1	0.886	0.809	fulfilling
2. EFF_2	0.943		
3. EFF_3	0.851		
4. EFF_4	0.916		
Social Influence			
1. SOC_1	0.722	0.621	fulfilling
2. SOC_2	0.817		
3. SOC_3	0.813		
4. SOC_4	0.796		
Facilitating Conditions			
1. FAC_1	0.881	0.776	fulfilling
2. FAC_2	0.879		
3. FAC_3	0.889		
4. FAC_4	0.874		
Privacy Risk			
1. PRIV_1	0.950	0.912	fulfilling
2. PRIV_2	0.971		
3. PRIV_3	0.944		
4. PRIV_4	0.955		
Perceived Security			
1. SEC_1	0.930	0.908	fulfilling
2. SEC_2	0.963		
3. SEC_3	0.966		
Trust			
1. TRUST_1	0.851	0.817	fulfilling
2. TRUST_2	0.918		
3. TRUST_3	0.931		
4. TRUST_4	0.914		
Behavioral Intention			
1. INT_1	0.857	0.778	fulfilling
2. INT_2	0.907		
3 INT_3	0.885		
4. INT_4	0.901		
Conclusion	fulfilling		fulfilling

The results of the cross-loading test show that the indicator correlation value on the same variable is greater than the correlation value on other variable indicators. The HTMT test result shows that all values obtained from each variable are below 0.9, which means each variable has good convergent validity and can be distinguished from the other variables. Thus, the test shows that the correlation between indicators is valid and meets the criteria of good discriminant validity.

Table 3 shows that the value of Cronbach's Alpha and composite reliability for all research variables generated value above 0.7. This indicates that the variables in this study are accurate, consistent, and appropriate for measuring latent variables.

It can be concluded that the outer model measurement has shown good results. The test was then continued to the inner model.

Table 3. Reliability Test Results

No.	Latent Variable	Reliability Internal Consistency	
		Composite Reliability	Cronbach's Alpha
1.	Performance expectancy	0.912	0.934
2.	Effort expectancy	0.921	0.944
3.	Social influence	0.799	0.867
4.	Facilitating conditions	0.905	0.933
5.	Privacy risk	0.968	0.976
6.	Perceived security	0.949	0.967
7.	Trust	0.925	0.947
8.	Behavioral intention	0.911	0.937
Conclusion		Fulfilling	

C. Inner Model and Hypothesis Testing

Table 4 shows the results of the inner model testing. It is revealed by the VIF test results that all variables generated VIF value below 5 for each construct formed in the study. This means all variables do not indicate multi-collinearity when built into the research model.

Table 4. Inner Model and Hypothesis Testing Results

Hypothesis and Construct	Collinearity (VIF)	Path Coefficient Significance			Conclusion
		β	t_{stat}	P_{Values}	
	< 5	> 0	> 1.96	< 0.05	
H_1: PERF -> TRUST	1.631	0.245	2.776	0.006	Accepted
H_2: EFF -> TRUST	1.710	0.228	2.378	0.017	Accepted
H_3: SOC -> TRUST	1.468	0.073	0.750	0.453	**Declined**
H_4: FAC -> INT	1.258	0.340	3.475	0.001	Accepted
H_5: FAC -> EFF	1.000	0.547	6.164	0.000	Accepted
H_6: PRIV -> TRUST	1.481	0.003	0.040	0.968	**Declined**
H_7: SEC -> TRUST	1.767	0.443	4.469	0.000	Accepted
H_8: TRUST -> INT	1.258	0.477	4.593	0.000	Accepted

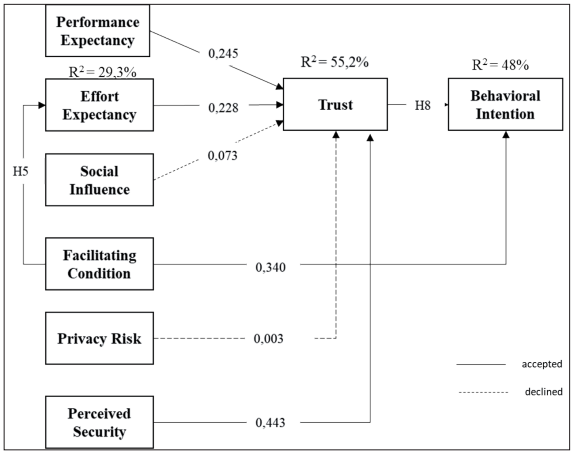

Figure 2. Inner model test results

As shown in Table 4, the relationship between performance expectancy (PERF) and trust (TRUST) shows a path coefficient of 0.245 in a positive direction. The p-value of 0.006 meets the significance threshold of 0.05 and the t-statistic value of the relationship between these variables is 2.776, exceeding the minimum value of 1.96 at a significance level of 5%. This means performance expectancy has a positive and significant influence on trust (hypothesis 1 is accepted).

The relationship between effort expectancy (EFF) and trust (TRUST) shows a path coefficient of 0.228 in a positive direction. The p-value of 0.017 meets the significance threshold of 0.05 and the t-statistic value of the relationship

between these variables is 2.378, exceeding the minimum value of 1.96 at a significance level of 5%. This means effort expectancy has a positive and significant influence on trust (hypothesis 2 is accepted).

The relationship between social influence (SOC) and trust (TRUST) shows a path coefficient of 0.073 in a positive direction. Meanwhile, the t-statistic value in relation to these variables is 0.750, which is less than the minimum t-value > 1.96 at a significance level of 5%, thus the t-test is rejected. The p-value of 0.453 does not meet the criteria for p-value < 0.05, which means social influence does not show any significance effect on trust (hypothesis 3 is rejected).

The relationship between facilitating conditions (FAC) and behavioural intention (INT) shows a path coefficient of 0.340 with a positive direction. The relationship between these variables has a t-statistic value of 3.475, exceeding the minimum value of 1.96 at a significance level of 5%, and the p-value of 0.001 satisfies the significance threshold of 0.05, which means facilitating conditions have a positive and significant influence on behavioural intention (hypothesis 4 is accepted).

The relationship between facilitating conditions (FAC) and effort expectancy (EFF) shows a path coefficient of 0.547 in a positive direction. The relationship between these variables has a t-statistic value of 6.164, exceeding the minimum value of 1.96 at a significance level of 5%, and the p-value of 0.000 satisfies the significance threshold of 0.05. This means facilitating conditions have a positive and significant influence on effort expectancy (hypothesis 5 is accepted).

The relationship between privacy risk (PRIV) and trust (TRUST) shows a path coefficient of 0.003 with a positive direction. Meanwhile, the t-statistic value in relation to these variables is 0.040, which is less than the minimum t-value > 1.96 at a significance level of 5%, thus the t-test is rejected. The p-value of 0.968 does not meet the criteria for p-value < 0.05, which means privacy risk does not show any significance effect on trust (hypothesis 6 is rejected).

The relationship between perceived security (SEC) and trust (TRUST) shows a path coefficient of 0.443 with a positive direction. The relationship between these variables has a positive and significant influence from perceived security to trust, as evidenced by the t-statistic value of 4.469, which exceeds the minimum value of 1.96 at a significance level of 5%, and the p-value of 0.000, which satisfies the significance threshold of 0.05. Therefore, it is revealed that perceived security has a positive and significant influence on trust (hypothesis 7 is accepted).

The relationship between trust (TRUST) and behavioural intention (INT) shows a path coefficient of 0.477 in a positive direction. The relationship between these variables has a t-statistic value of 4.593, exceeding the minimum value of 1.96 at a significance level of 5%, and a p-value of 0.000 that satisfies the significance threshold of 0.05. Therefore, it is revealed that trust has a positive and significant influence on behavioural intention (hypothesis 8 is accepted).

Table 5. Test Results for the Coefficient of Determination (R^2) and Effect Size (f^2)

Construct	Coefficient of Determination (R^2)	Effect Size (f^2)
PERF -> TRUST	0.552	0.086
EFF -> TRUST		0.071
SOC -> TRUST		0.008
PRIV -> TRUST		0.000
SEC -> TRUST		0.260
TRUST -> INT	0.480	0.354
FAC -> INT		0.181
FAC -> EFF	0.293	0.427

As shown in the results of coefficient of determination test (Table 5), trust is explained moderately at 0.552 or 55.2% by five variables (performance expectancy, effort expectancy, perceived security, social influence, and privacy risk). The remaining 44.8% suggests that there are still unknown variables that influence trust. Furthermore, behavioural intention is explained moderately at 0.480 or 48% by trust and facilitating conditions, and effort expectancy is explained weakly at 0.293 or 29.3% by facilitating conditions.

Next, the results of the effect size test show that i) perceived security (0.260) has a moderate effect on trust, ii) performance expectancy (0.086) and effort expectancy (0.071) have a small effect on trust, and iii) social influence (0.008) and privacy risk (0.000) have almost no effect on trust. Moreover, trust (0.354) has a large effect on behavioural intention, and facilitating conditions (0.181) have a moderate effect on behavioural intention. Meanwhile, facilitating conditions (0.427) have a large effect on effort expectancy.

IV. DISCUSSION

This study examines the determinants of trust and its role in influencing the behavioural intention of Bantul Regency's citizens as the users of e-government services, namely citizenship administration services in the form of the *Disdukcapil* Smart application. Modification of the UMEGA acceptance model was adopted in this study because of its specific characteristics to explain individual acceptance of e-government. The UMEGA model is an update of the UTAUT model with modifications to be applied to e-government characteristics. This expansion incorporates the perspective concerning trust, perceived security, and privacy risk.

This study also examines the public's blank perception regarding security and privacy. In practice, information about privacy policies are already included in the official website of the *Disdukcapil* of Bantul Regency and in the app on Google Playstore. Besides, the *Disdukcapil* of Bantul Regency also has received the ISMS ISO 27001 certification. However, this information was intentionally omitted from the questionnaire with aim to determine whether submitting population data through the application would impact the public perception on security and privacy.

The determinants of trust are revealed from testing hypotheses 1, 2, 3, 6, and 7. The results of testing hypotheses 1, 2, and 7 reveal that performance expectancy, effort expectancy, and perceived security are the determinants of trust. Meanwhile, the results of testing hypotheses 3 and 6 reveal that social influence and privacy risk have no significant effect on trust.

Social influence cannot be used to predict trust in this study. The results regarding this matter are different from the study by Dwivedi et al. (2017) and Singh et al. (2017), which stated that social influence is the most influential construct in determining trust. On the other hand, the results concerning social influence are in line with a study by Awalina (2021), which stated that social influence has no effect on the acceptance of citizenship administration technology. The results is also reinforced by a study by Lewis et al. (2003), which suggested that the context of the use of technology can change the role of social influence on trust. This is probably caused by the people's attitude, namely they don't really care about population management. If the circumstances are not compelling, they are reluctant to try, and if the community is not under pressure, they are reluctant to take care of their personal documents so that they don't really take the recommendations and suggestions from their closest group into consideration (Dahlila & Frinaldi, 2020).

Likewise, privacy risk also cannot be used to predict trust in this study. The results regarding this matter are not in line Lu et al. (2005), Teo and Liu (2007), Dwivedi et al. (2017), and Cai et al. (2023), who stated that privacy risk has a negative and significant effect on the attitude towards trust. Similar results were shown in the studies by Sanchez et al. (2019) and Velicia-Martin et al. (2021), which stated that the concern for personal information provided in the application to be used inappropriately does not affect trust. Based on a study by Delphia and Harjono (2021), the majority of Indonesian citizens are understand the value of protecting personal data, as they are already aware of it, but they are not yet fully selective in implementing security measures. This phenomenon may be explained by these findings. Population data is considered the most important data among all sample areas and can be misused because it is integrated in many fields, especially finance, banking, and biometric data.

The findings of this study show that public trust towards e-government implementation is most significantly influenced by perceived security. This suggests that the use of security-related technical solutions, such as the application known as Information Security Management System

(ISMS), will influence trust in e-government implementation. Likewise, the significant influence of performance expectancy and effort expectancy on trust also proves that the performance and convenience offered encourage the public to place higher trust in e-government implementation.

The lack of social influence on trust may be attributed to the attitude of Bantul citizens, namely they are less concerned with the matter of population management. If conditions are not coercive and urgent, people are reluctant to take care of their personal documents so that they don't really consider recommendations and suggestions from their closest groups.

Privacy risk also does not have a significant effect on trust. This is possible because in the use of the citizenship administration services system, the community's needs are considered more important than the risk to their privacy.

There is an intriguing fact that can be drawn from this finding, namely the rejection of factors that are internal to individual perceptions (perceived privacy risks and social influences), while factors originating from e-government providers (ease of use, good performance, and system security) have a significant impact on trust. Thus, it can be concluded that the policies and actions carried out by the *Disdukcapil* of Bantul Regency as e-government organizers in citizenship administration services greatly influence the community to develop trust in e-government implementation.

The determinant of trust in implementing e-government can be explained in this study at 55.2% and it is classified as moderate level in explaining this variable. The results obtained are higher than the original UMEGA model, which was only able to explain 44.9% of the determinants of attitude. However, these findings still fall short compared with the research models adopted in context other than e-government, such as a study by Singh et al. (2017), which was able to account for 64% of the variation in e-commerce trust, and Cai et al. (2023), which was able to account for 83% of the variation in trust resulting from the use of autonomous buses. Therefore, further studies to explain the determinant variants of e-government still need to be developed.

Other findings from this study suggest that trust and facilitating conditions are direct determinants of behavioural intention. The model proposed in this study can explain 48% of behavioural intention in using e-government. In terms of strength, it is classified as moderate in explaining the research variables. Moreover, as with the original UMEGA model, this study also found a strong and significant effect of facilitating conditions as a direct determinant of behavioural intention and effort expectancy. Because they are centred on infrastructure like devices that can run the applications, the capacity to comprehend administration flows, and knowledge of running the applications that people can own and use facilitates the favourable conditions. This ease of operation allows and facilitates people to use the system. In this study, facilitating conditions are placed as the only construct to build expectancy with significant results and can explain 29.3% of the determinants of effort expectancy.

V. CONCLUSION

This study was conducted to determine the role of trust as a mediating variable in the acceptance of e-government technology. This study modified the Unified Model of Electronic Government Adoption (UMEGA) as a model of e-government technology acceptance by integrating trust to investigate its effect on the core constructs of the UMEGA model. Based on the results, trust is determined by factors that are managed by e-government providers, namely performance expectancy, effort expectancy, and perceived security. Meanwhile, external factors, namely social influence and privacy risks, are disregarded. In addition, facilitating conditions in the form of infrastructure provided by the government make it easy for individuals to use the system.

However, the scope of this study can only explain how people's behavioural intentions when using application for citizenship administration are determined. This means this study cannot provide an explanation concerning why people have intentions and motivation to use the application for citizenship administration.

There are two main limitations regarding the results of this study. First, it has not fully ex-

plained the determinants of trust in the implementation of e-government citizenship administration services, as the explanatory power obtained is just 55.2%, thus there is still 44.8% that cannot yet be explained. Second, the determinants of effort expectancy are still weakly explained in this study because the condition instruments that were proposed in this study still do not take into account on how the facilities provided by e-government operators, such as ease of use, assistance, and so on, can benefit the community. These factors should be considered in further studies in order to generate more comprehensive results.

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