

Understanding the Intention to Use LAPOR Application as e-Democracy in Indonesia: An Integrating ECM and UTAUT Perspective

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Abstract: The development of ICT enables citizen involvement in the decision-making process and two-way communication between democratic actors in the political sphere through digital e-democracy platforms. Unfortunately, implementing digital platforms faces severe problems on the adoption side. A literature review shows that developing countries are research locations that have been widely studied in recent years, and specific theoretical models were used to explain the critical factors that influence user acceptance of e-democracy. This study investigates the critical factors influencing the adoption of e-democracy to fill the research gap. The conceptual model is proposed by integrating the ECM into UTAUT. A cross-sectional survey was designed and employed to test the conceptual model. Tests were carried out on 355 data samples using SmartPLS software. The PLS algorithm testing and the bootstrapping procedure were carried out. The results found that satisfaction, perceived usefulness, effort expectancy, and facilitation conditions directly influence the intention to use e-democracy. At the same time, social influences do not significantly affect the intention to use e-democracy. In addition, perceived usefulness, facilitation conditions, and expectancy confirmation positively influence user satisfaction. Expectancy confirmation positively influences perceived usefulness. Theoretical and practical implications are discussed. Consequently, some policy recommendations need to be adopted by the Indonesian government to improve the quality of e-democracy.

Keywords: Citizen Involvement, Digital Democracy, ECM, e-Democracy, UTAUT

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1. Introduction

The development of information and communication technology (ICT) has brought many changes to the democratic system. The influence of communication technology in the era of new media has enabled anyone to access anything via the Internet (Syahputra & Hafiar, 2019). The advanced development of ICT makes human life easier by quickly connecting regions that are not limited by space and time (Nugraha et al., 2022). It is also a driving factor in strengthening the people's voice and empowering individuals in decision-making in the government sector (Gupta & Biswas, 2021). Citizen involvement in critical policy issues is the implementation of participatory governance by utilizing digital platforms (Watat & Jonathan, 2021). The use of digital platforms in the democratic process is known as e-democracy. The presence of digital platforms in political participation allows citizens to participate actively in government processes, which is an essential impact of ICT (Musiał-Karg, 2022). Interestingly, the existing literature uses different terms for this concept, such as e-democracy (Al-hujran et al., 2014; Hujran et al., 2020; Keramidis & Charalabidis, 2021; Kneuer, 2016; A.A. Oni et al., 2016; Sendag et al., 2022; Watat & Jonathan, 2021) or digital democracy (Brill, 2021; K. Hacker & van Dijk, 2000; Hague & Loader, 1999). Even though digital platforms can improve the quality of the decision-making process, digital platforms designed have yet to be able to fulfil the interaction and aggregation of interests (Brill, 2021). A solution is needed to achieve the benefits of ICT in an open democratic system.

The transformation of electronic political systems packaged in e-democracy faces serious problems related to low adoption (Naranjo-Zolotov, Oliveira, & Casteleyn, 2019; Naranjo-Zolotov, Oliveira, Casteleyn, et al., 2019). According to Aderonke A Oni et al. (2017), the level of electronic participation in developing countries is low, due to digital divide problems, such as uneven internet access, inadequate infrastructure development, and low interest in technology adoption. Our review of the existing literature shows that developing countries, especially in West Asia, in research locations that have been widely studied in recent years, such as Jordan (Al-hujran et al., 2014; Hujran et al., 2020); sub-Saharan Africa (Watat & Jonathan, 2021); Kuwait (Aljazzaf et al., 2020); Nigeria (Aderonke A Oni et al., 2017); and Turkish (Sendag et al., 2022). Indeed, many studies of e-democracy in developing countries' context have been conducted. However, the existing research still concentrates on using specific theoretical models to evaluate user adoption of e-democracy. Theory of reasoned action (TRA) (A.A. Oni et al., 2016; Watat & Jonathan, 2021), the theory of planned behaviour (TPB) (Al-hujran et al., 2014; Hujran et al., 2020), the technology acceptance model (TAM) (Al-hujran et al., 2014; Aljazzaf et al., 2020; Hujran et al., 2020), Unified Theory of Acceptance and Use of Technology (UTAUT) (Hujran et al., 2020; Naranjo-Zolotov, Oliveira, & Casteleyn, 2019; Naranjo-Zolotov, Oliveira, Casteleyn, et al., 2019); empowerment theory (Naranjo-Zolotov, Oliveira, Casteleyn, et al., 2019); and the Civic Voluntarism Model (A.A. Oni et al., 2016; Watat & Jonathan, 2021) are theories or models that are often used to explain factors influencing technology adoption in an e-democracy context. In fact, findings from previous research investigations are very diverse, and limitations from the citizens' perspective are still present in showing the factors influencing the

adoption of e-democracy (Mishra, 2020; Naranjo-Zolotov, Oliveira, & Casteleyn, 2019; Naranjo-Zolotov, Oliveira, Casteleyn, et al., 2019).

These theoretical models, TRA, TPB, TAM, and UTAUT, have similar constructs in predicting user behavioural intentions using information systems (Y. Kim & Crowston, 2011; Pal et al., 2020). According to Kim & Crowston (2011), TRA and TPB are the fundamental theories for developing other adoption theories, such as TAM and UTAUT, which explain behavioural intention as the outcome variable of the independent variable. TAM is a theoretical model adapted from TRA. This theoretical model predicts users' behavioural intention in adopting an information system (Davis, 1989). Existing literature states that the TAM proposal aims to simplify TRA by removing subjective norms (Taherdoost, 2018; Wu et al., 2010). Meanwhile, UTAUT is "a theoretical advancement" that comes from re-examining previous theories of information systems adoption and diffusion (Dwivedi et al., 2011). The UTAUT construct results from mapping and integrating eight theories of information systems adoption and diffusion, including TRA, TPB, and TAM (Venkatesh et al., 2003). These theoretical models, TRA, TPB, TAM, and UTAUT, are similar.

The present research is different from previous research because the investigation process was carried out in a developing Southeast Asian country, namely Indonesia. The context of developing countries is interesting to examine more deeply. It is because developing countries face major democratic problems, from problems involving the heterogeneity of democratic practices, unequal coverage of the state, low enforcement of the rule of law, contestation of power caused by personal interests, and political violence that harms many parties (Behrend, 2021). It pushes into the weak democratic systems in developing countries, which impacts the unclear political direction in decision-making (Pelicice, 2019). Previous works predicted the factors influencing citizens' behavioural intentions in accepting and using e-democracy. Unfortunately, previous work has been limited in investigating the crucial factors why citizens decide whether to continue or discontinue using e-democracy. The research question is raised: what are the critical factors influencing citizens' acceptance of e-democracy? To fill the research gap, this study investigates the factors influencing citizens' acceptance of e-democracy.

This study proposes an integration model of ECM and UTAUT to expand knowledge and better understand the factors influencing citizens' behavioural intentions to adopt and use e-democracy. ECM is used because it is a theoretical model that can predict citizens' behavioural intentions in using sustainable e-democracy. Moreover, UTAUT is a modern and integrated theory capable of explaining 70% variance of behavioural intention (Abbad, 2021; Dwivedi et al., 2019, 2020; Hafiar et al., 2022; Venkatesh et al., 2003, 2012; Zha et al., 2022; Zhou, 2008) while 27% to 40% variance of behavioural intention is explained by the previous theoretical model (Venkatesh et al., 2003). In addition, no study investigates how integrated theories predict the behavioural intention of citizens to adopt e-democracy. Thus, integrating these two theoretical models can fill the existing research gap. It is because different proposed models provide different perspectives in explaining the factors affecting user acceptance. It is necessary to use a multilevel approach in analysing conceptual models on aspects of e-Democracy. This conceptual model needs to be studied theoretically and practically (Keramidis & Charalabidis, 2021). The proposed model provides a distinct knowledge contribution and a credible framework for measuring the success of continuing e-democracy adoption.

2. Literature Review

2.1. The definition of e-Democracy

A universal definition of the concept of e-democracy has yet to be created. The concept of e-democracy consists of two words: electronics and democracy. Electronic refers to information communication and technology devices (ICTs). At the same time, democracy is based on the notion of a political regime that allows citizens to have the right to vote and be elected in contesting certain political positions in government institutions, based on the principle of free and fair elections (Behrend, 2021). *E-democracy* can be defined as; using ICTs that assist democratic actors in the political process. Existing literature believes that e-democracy is a new form of democracy and a concept at the intersection of e-government and e-participation (Al-hujran et al., 2014; Watat & Jonathan, 2021).

Existing literature defines the concept of e-democracy in various senses. Even though much literature has provided definitions of e-democracy, the diversity of the definitions makes them inconsistent (Kneuer, 2016). For example, According to Lindner & Aichholzer (2020), *E-democracy can be defined as using ICT to improve the quality of democratic practices by reducing or eliminating traditional "analogue" political practice boundaries such as time, space, and other physical conditions*. This understanding confirms that the ideal practice of democracy should leave the democratic border, which can hinder the democratic process. Providing a new space to realise the active involvement of the community in the democratic process is needed (Congge et al., 2023).

Existing literature also reveals that digital democracy relates to the relationship between government and ICTs infrastructure (Berg & Hofmann, 2021) in the political decision-making process. Musiał-Karg (2022) also states that e-democracy is a form of democratic practice that uses ICTs to enable citizens in political decision-making through direct and indirect democracy. Greater citizen involvement in driving changes in decision-making practices in the political sphere is possible due to the vital role of ICTs. Technological tools capable of driving democratic transformation are smartphones, web 2.0, and the Internet (Al-hujran et al., 2014). According to Arafah et al. (2021), e-democracy is defined as; the use of ICTs to bridge virtual and non-virtual spaces in strengthening democratic and political processes. It is because using ICTs increases citizens' access to information and effective communication among democratic actors (Aderonke A Oni et al., 2017). The application of ICTs in democratic practices allows the community to take an active part in government processes through access to information, policies, and government services in a transparent manner (A.A. Oni et al., 2016). Such a democratic process is believed to encourage an effective interaction of democratic actors between the public, elected officials, and other stakeholders, such as political parties, non-government organizations, political observers.. In the end, increasing wider access to information dissemination and deliberation between democratic actors in decision-making, can improve the quality of a participatory democratic system (Aderonke A Oni et al., 2017).

Concerning democracy, Kneuer (2011, 2016) emphasize three dimensions of the quality of democracy. First, the dimension of civil and political rights is a dimension that considers constitutional and oversight factors in increasing the rule of law. Second, the procedural dimension is the dimension that concerns the relevant basic principles of democracy, which are at the level of input and decision-

making processes. Finally, the output dimension is the dimension that emphasizes the effectiveness of government performance. Regardless of the normative definition of e-democracy, science, politics, social issues, technology, and management all play a role in effectively implementing e-Democracy (Keramidis & Charalabidis, 2021). Existing literature also reveals the purpose of e-democracy as a flexible and interactive tool that is ideally useful in providing space for public participation in governance processes that enable stronger democracy (Al-hujran et al., 2014; Sendag et al., 2022), fostering government decision-making processes within the framework of good public governance (Al-hujran et al., 2014), increase government accountability and transparency in public administration (Hujran et al., 2020), and improve democratic processes and structures that are better in policy making by empowering and involving the community in public consultations.

The inconsistency of the e-democracy concept is due to the multidimensional construction involving the overlapping of e-government and e-participation (Kneuer, 2016). Little literature summarizes previous research and provides a rationale regarding empirical e-Democracy, to understand the use of ICTs in a general democratic context (Päivärinta & Sæbø, 2006). It encourages the diversity of definitions from one literature to another due to differences in the authors' perceptions. Even so, e-government and e-participation can still be distinguished from one another. E-Government refers to; applying ICT in government institutions to improve public services (Gupta & Biswas, 2021; Keramidis & Charalabidis, 2021) or transforming public service delivery into digital public services (Huda et al., 2022). Meanwhile, e-participation refers to the use of ICT by the government and society in reciprocal communication, namely exchanging information, consulting each other, and participating in decision-making (Keramidis & Charalabidis, 2021). The definition of e-democracy emphasizes a great opportunity for the community to participate fairly in the political process and decision-making (Gupta & Biswas, 2021). The e-democracy initiative is a new perspective on developing and using ICTs as complementary instruments that are more appropriate to use in the context (Musiał-Karg, 2022). Therefore, the concept of e-Democracy refers more to the use of ICT in the decision-making process in the political sphere, accompanied by changes in communication in two directions. The two-way communication process allows for wider societal participation in governance through decision-making.

2.2. The Implementation of LAPOR Applications in Indonesia

The application of Aspirations and Complaints Service Online People (LAPOR!) is a digital channel used to convey aspirations, complaints, and information requests for Indonesian citizens (LAPOR, n.d.). The development of this digital democracy application was motivated by the partial and uncoordinated management of public service complaints, which resulted in these complaints not being handled by government agencies (LAPOR, n.d.). On the other hand, the demand for implementing good governance motivates the government to provide an integrated complaint-handling governance mechanism. Thus, the government introduced the LAPOR application as a digital democracy application that facilitates the needs of citizens to convey aspirations, complaints, and requests for information. In administering the LAPOR application, the Ministry of State apparatus and bureaucratic reform, the presidential staff office, and the Indonesian Ombudsman are the institutions that manage it (DISNAKERTRANS Provinsi Banten, 2021). Presidential Regulation No. 95/2018 concerning Electronic-Based Government Systems is the legal basis that strengthens the implementation of

the LAPOR application. This digital democracy application has three main objectives: first, assist the government in managing public complaints in a simple, fast, precise, thorough, and well-coordinated manner. Second, increasing access to citizens' political participation in conveying aspirations and complaints. Third, improving the quality of public services. The application of digital democracy has the benefit of reducing the cost of political participation, increasing the political participation of citizens in conveying public policy aspirations, and increasing citizen awareness of emerging problems (Deseriis, 2023). The LAPOR application uses technology that makes it easier for citizens to participate politically in government administration, including conveying aspirations, complaints, and questions. Thus, technology is a fundamentally scientific approach to data processing (including complaints, suggestions, and questions) used to formulate public policies representing people's voices in solving problems (B. Kim et al., 2021).

2.3. Integrating Theoretical Model between ECM and UTAUT

The primary debate in Expectation Disconfirmation Theory (EDT), user satisfaction is the motivation that drives user behavioural intentions in repurchasing products or services and is the rationale for explaining sustainable behavioural intentions (Oliver, 1980). EDT believes that consumers go through multi-stages in determining purchasing decisions. The first stage is the formation of initial expectations about the product. After that, consumers use the product within a certain period of time. In the next stage, consumers compare their experiences with the initial expectations. It is the stage of determining the level of satisfaction or dissatisfaction with the product. This stage is called disconfirmation. Later in the development of the literature, the EDT model was modified by changing the predictor variable "expectation" to "perceived usefulness" (Bhattacharjee et al., 2008).-According to Bhattacharjee et al. (2008), that is the fundamental reason for the extension and modification of the EDT model. For example, the expectation is a predictor of disconfirmation and- satisfaction with an IT product which may apply if it is in a sufficiently stable state over time. So the initial expectation assessment is the pre-adoption assessment of the IT product, and the actual usage is the post-adoption assessment of such an IT product. The result of the EDT modification is known as the Expectancy Confirmation Model (ECM).

ECM is a theoretical model used in the consumer behaviour literature to explain the relationship between constructs, customer satisfaction, post-purchase behaviour, and marketing services (Bhattacharjee et al., 2008). This theoretical model explains sustainable behavioural intentions in the use of information systems built by construction variables, perceived benefits, confirmation, and satisfaction (Nikou, 2021; Oliver, 1980; Zhao & Bacao, 2020). This theoretical model also allows explanations for increasing more effective interventions and better mechanisms for understanding what underlies changes in user behaviour (Jafari et al., 2017). The government and e-democracy application developers realize that citizens' behavioural intentions, using sustainable e-democracy products and services, result from citizen satisfaction and perceived usefulness of government products and services. According to Bhattacharjee et al. (2008), the satisfaction and confirmation constructs include pre-use expectations. In addition, ECM considers the user's ongoing behavioural intention in three constructs; perceived benefits, confirmation of expectations, and user satisfaction.

Thus, the primary ECM construct can explain the intention to behave sustainably in using e-democracy. Therefore, ECM is an appropriate framework for explaining the reasons for the continued adoption of e-democracy.

Moreover, the Unified Theory of Acceptance and Use of Technology (UTAUT) is a model or theory that explains the mechanism of the emergence of behavioural intentions and individual acceptance of new technologies (Hafiar et al., 2022; Venkatesh et al., 2016). The UTAUT model was based on the analysis results of different acceptance models, including TRA, TAM, TPB, C-TAM-TPB, MM, and IDT (Venkatesh et al., 2003). The UTAUT model is an integrated model for investigating the acceptance and use of technology. In addition, this model has been tested in various contexts. It is because the UTAUT model is a theoretical model that can explain the variance of behavioural intention by 70% (Abbad, 2021; Dwivedi et al., 2019, 2020; Hafiar et al., 2022; Venkatesh et al., 2003, 2012; Zha et al., 2022; Zhou, 2008) while the variance of use technology is 50% (Dwivedi et al., 2019; Venkatesh et al., 2012). The determinant factors proposed in the UTAUT Model to predict individual behavioural intentions, using new technology are performance expectations, effort expectancy, social norms, and facilitating conditions (Blut et al., 2022; Hafiar et al., 2022; Venkatesh et al., 2003).

In its use to study the acceptance and use of technology, the UTAUT model is integrated with other theoretical models (Venkatesh et al., 2016). Several studies have tested and modified the UTAUT model (Brill, 2021; Naranjo-zolotov et al., 2019; Naranjo-Zolotov, Oliveira, & Casteleyn, 2019). Despite testing and modifying the UTAUT model with other theoretical models, the existing literature using the UTAUT has illustrated certain limitations. Dwivedi et al. (Dwivedi et al., 2019) argue that there are opportunities and potential reasons to reconsider the relationship proposed by UTAUT systematically:

- 1) The importance of reconsidering the moderator proposed in the original UTAUT model. The results of previous studies on the literature did not apply the complete UTAUT model, such as only using a part of the model and eliminating the moderator.
- 2) The importance of rethinking the completeness of the path coefficient relationship proposed in the original UTAUT model. According to Venkatesh et al. (2003), if effort expectancy are not considered in formulating the UTAUT model, consideration of the use of facilitating conditional determinants that users expect in predicting the user's behavioural intention, in accepting and using the new technology, is suggested. It is because the determinant factor is the basis of previous technology acceptance theories that model the relationship between facilitating conditions and explicit behavioural intentions.
- 3) Other constructs are necessary to extend the original UTAUT model in explaining individual behavioural intentions of acceptance and use of new technologies.

In addition, Dwivedi et al. (Dwivedi et al., 2019) explain that the determinants of individual behaviour intentions are divided into two groups. The first group, such as performance expectancy and effort expectancy, are exogenous constructs in the UTAUT model that represent technological attributes, while social influence and facilitating conditions are contextual factors that represent perceptions held by individuals about technology.

ECM is a theoretical model that explains the factors that influence, using a sustainability information system (Jafari et al., 2017; Nikou, 2021). ECM is a better theoretical model for explaining the continued use and modified results of EDT. Even the primary constructs of ECM, perceived usefulness, confirmation and satisfaction, are believed to better explain the intervention mechanism regarding the reasons for continued use after using a product or service (Jafari et al., 2017). However, regardless of past successful use of a system, there needs to be more than past benefits to encourage future use. Expecting future benefits is an essential condition that forms the basis of future use (Seddon, 1997). The main weakness of ECM is using extrinsic motivations in predicting users' sustainable behaviour, such as satisfaction (Kang et al., 2010) and perceived usefulness (Kang et al., 2010; M. K. O. Lee et al., 2005). As a result, ECM ignores intrinsic motivation when defining user continuing behaviour (Hung et al., 2007). Thus, the shortcomings of ECM increase the opportunity for it to be modified or integrated with other theoretical models.

UTAUT is an integrated theoretical model because it resulted from a review and synthesis of eight previous theoretical models (Venkatesh, 2006; Venkatesh et al., 2003). Although the majority of UTAUT is in its construction, performance expectancy, effort expectancy, social influence, and facilitating conditions are crucial factors in predicting users' behavioural intention (Venkatesh et al., 2012). However, most of the attention of the previous works is on replicating UTAUT to the organizational context and working conditions (Adov et al., 2017). The importance of other studies to carry out "replication, application and extension/integration of UTAUT" broadly is to broaden and enrich the understanding of technology adoption and reduce the theoretical limitations (Jewer, 2018; Venkatesh et al., 2003, 2012). In the context of e-democracy adoption, our proposed model provides opportunities for testing the "boundary conditions" of the UTAUT model. Venkatesh (2006) argues that creating some theoretical models is a fact in technology adoption research at the individual level that is mature. In addition, the UTAUT construct includes technological and contextual factors, able to explain 70% of the variance of the user's behavioural intention. Social influence is believed to be essential in building intrinsic motivation in influencing users' behavioural intentions to use information systems (M. K. O. Lee et al., 2005; Shen et al., 2011). Thus, UTAUT has advantages in predicting intrinsic motivation that influences the behavioural intention of users to accept and use e-democracy. Therefore, the majority of UTAUT can complement the weakness of ECM. As a result, integrating the ECM and UTAUT models in this study expands knowledge and a better understanding of the crucial factors that can influence the adoption and use of e-democracy. Understanding the factors that constrain a user's behavioural intention to use and accept technology is critical to increasing understanding of how to attract more people to use and accept this type of technology (Adzharuddin, 2013; Alshammari, 2021)

2.4. Hypotheses Development

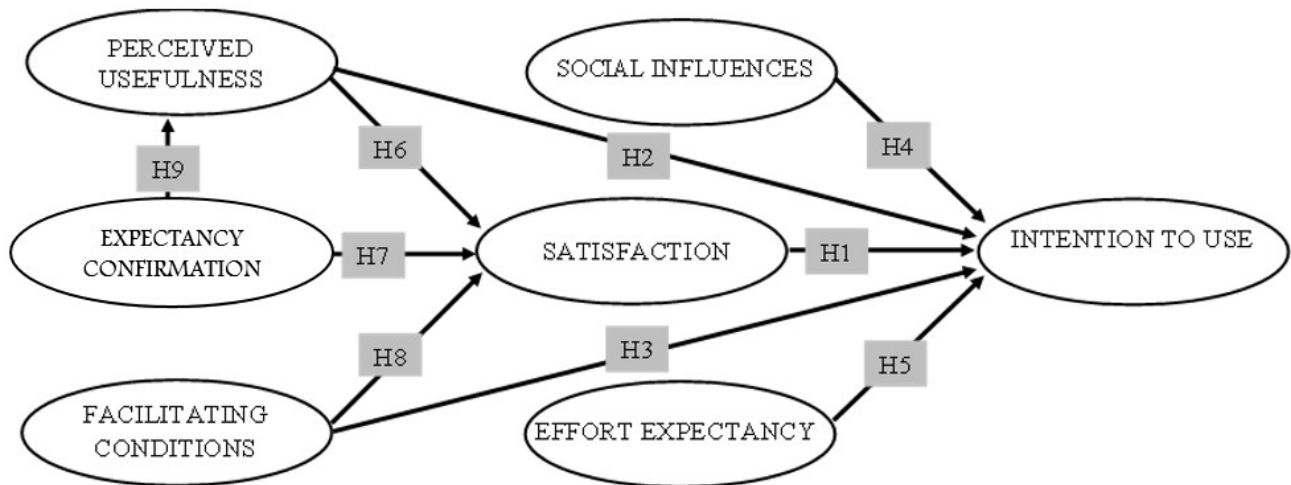
We searched previous literature to determine the use of the theoretical models ECM and UTAUT in e-democracy, e-participation, e-voting, and e-consultation. These contexts are other contexts that are relevant to this research. According to Bannister & Connolly (2020), e-democracy is not a single concept that stands alone, but it has the same meaning as e-voting, e-participation, and e-consultation. Our search results on previous literature in the Scopus database found no use of ECM in that context. However, previous research has investigated using ECM in other contexts. Previous research has

shown that the determinant factors of ECM are critical factors for predicting user behaviour and intentions to use and receive technology (Sarassina, 2022; Xie et al., 2020). In the mobile payment context, the previous study analysed 420 respondents (Sarassina, 2022). The results indicate a substantial influence between perceived usefulness on user satisfaction and a substantial influence of user satisfaction on continuance intention (Sarassina, 2022). In Shared Nurses' Service context, an empirical study examined 373 valid questionnaires to demonstrate a direct influence of perceived usefulness on continuation intentions, satisfaction on intentions, expectancy confirmatory on satisfaction, and perceived usefulness (Xie et al., 2020). The previous study also validates the substantial influence of EC determinants on user behavioural intentions through user satisfaction as a mediator variable. In the context of e-public service, the results of previous work evaluated 200 respondents (Huda, 2023). The study results show a positive relationship between perceived usefulness and satisfaction on intention, perceived usefulness on satisfaction, and confirmation of expectation on perceived usefulness and satisfaction (Huda, 2023).

In addition, the previous study has an empirical investigation on user behaviour intentions to use and receive technology-based services using UTAUT (Naranjo-zolotov et al., 2019; Naranjo-Zolotov, Oliveira, & Casteleyn, 2019). Previous work evaluated 210 respondents who used e-participation (Naranjo-Zolotov, Oliveira, & Casteleyn, 2019). The results of his research show that facilitation conditions are found to have a positive effect on intentions to be used in the context of e-participation. Meanwhile, social influence and effort expectancy do not affect the intention to use. Another study was conducted (Naranjo-zolotov et al., 2019). This study evaluates 200 respondents who have experience related to e-participation. The results of his research show that effort expectancy and facilitating conditions have a significant effect on the intention to use e-participation. Nonetheless, the two previous works found no social influence on usage intention. However, other research shows a positive social influence on the intention to use e-voting (Chauhan et al., 2018; Powell et al., 2012). Empirical investigations evaluated 566 respondents to see differences in responses between young adults and seniors (Powell et al., 2012). The research results show a significant influence of social influence on the intention to use online voting in both age groups. Other previous work also proves that all UTAUT constructs positively affect intentions to use in e-participation adoption (Naranjo Zolotov et al., 2018). The basis of the UTAUT model believes that social influence is a significant predictor that influences users' behavioural intention to accept and use technology (Venkatesh et al., 2003).

The relationship between constructs in the ECM and UTAUT models, as the basis for integrating these two theoretical models is the direct effect of FC on satisfaction. Previous research suggests that facilitating conditions are the most crucial factor influencing individual behavioural intentions regarding system use (Guo, 2014; Naranjo-zolotov et al., 2019; Naranjo-Zolotov, Oliveira, & Casteleyn, 2019) and user satisfaction (Almari et al., 2019; W.-I. Lee et al., 2021). Testing the effect of facilitating conditions on user satisfaction has been carried out in several contexts, for example, in online social networks context (Almari et al., 2019) and m-health service context (W.-I. Lee et al., 2021). The two study findings show that facilitation conditions substantially affect user satisfaction. Therefore, this study considers the facilitating influence of user satisfaction conditions in the context of adopting e-democracy.

Figure 1: Proposed research model



The research model is shown in Figure 1. Based on this explanation, we build hypotheses:

- **H1:** Satisfaction has a positive impact on the intention to use e-democracy.
- **H2:** There are positive impacts of perceived usefulness on the intention to use e-democracy.
- **H3:** Facilitating conditions have positive impacts on the intention to use e-democracy.
- **H4:** Social influences have positive impacts on the intention to use e-democracy.
- **H5:** There are positive impacts of effort expectancy on the intention to use e-democracy.
- **H6:** There are positive impacts of perceived usefulness on satisfaction toward using e-democracy.
- **H7:** There are positive impacts of expectancy confirmation on satisfaction toward using the e-democracy.
- **H8:** There are positive impacts of facilitating conditions on satisfaction toward using e-democracy.
- **H9:** There are positive impacts of expectancy confirmation on the perceived usefulness of using e-democracy.

3. Method

3.1. Procedure and sampling

The research design used in this study is quantitative with a cross-sectional survey. The population of this research is Indonesian people who have accessed services at LAPOR (<https://www.lapor.go.id>). Participation of respondents in providing data is voluntary. The sample selection process was carried out using convenience sampling. Determining the minimum number of samples in the test refers to the R-square method, namely 181 samples require (Hair et al., 2014, 2021; Kock, 2018). These samples are considered to achieve a valid and adequate test in the multivariate statistical analysis approach. However, 355 respondents filled out the complete questionnaire, which is useable in data analysis. The number of samples will yield a power greater than 0.9; hence, our sample

size is sufficient to show confident findings (Hair et al., 2017). The process of distributing the questionnaire links was carried out from March 25, 2022, to June 25, 2022.

A questionnaire was used as a data collection instrument, based on questionnaire items validated by previous work. Questionnaire statements were adapted and modified in advance, according to the research context. The questionnaire was built using well-structured sentences, and the local language was used. Questionnaires were distributed to respondents via a Google form link where the questionnaire link was set to the option of filling out once per email. Each questionnaire item is also set on the "required" option. Using this procedure, the present study collected data from 359 respondents; however, we realized 355 as usable for analysis. In the first part, the respondent has stated the respondent's agreement. In the second part, the respondents were presented with questions about the demographics of the respondents, which included: gender, age, level of education, and services that were frequently used. In the third section, respondents were presented with questionnaire items that investigated their views on adopting e-democracy measured using a 5-point Likert scale.

3.2. Measures

We measured satisfaction with five items adapted from the previous study (Pai & Alathur, 2019; Sarassina, 2022; Xie et al., 2020). Sample items include "I think the LAPOR app is very helpful" and "I am confident with the government services provided by the LAPOR app." Perceived usefulness was operationalized in a four-items instrument, adapted from Pai & Alathur (2019), Sarassina (2022), and Hujran et al. (2020). Example items are; "How to learn the operation of the LAPOR application is easy for me" and "LAPOR application is flexible to interact with the government." Then, we modified three items from Xie et al. (2020) study to measure expectancy confirmation. The three items measuring expectancy confirmation include; "I get a better experience than I expected when I use the LAPOR app" and "Most of my expectations for the LAPOR app have been met." Responses of all items were measured on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

The operationalisation of effort expectancy was modified from previous studies (Venkatesh et al., 2003, 2012). Sample items are; "The LAPOR app operates understandably" and "The use of the LAPOR app requires a little effort to make me proficient in operating it." We measured social influence with three items adapted from Venkatesh et al. (2003) and Venkatesh et al. (2012). Example items are; "The government is the one who encouraged me to use the LAPOR app" and "The Government believes that I prefer to use the LAPOR app". Facilitating conditions were operationalized in a four-items instrument, adapted from Venkatesh et al. (2003) and Venkatesh et al. (2012). Sample items include; "I have the resources to use the LAPOR app" and "There's always someone else to help me when I'm having trouble using the LAPOR app." Then, we adapted three items from previous study (Hujran et al., 2020; Pai & Alathur, 2019; Sarassina, 2022; Wirtz et al., 2018, 2019) to measure the intention to use. The three items measuring the intention to use LAPOR App as an e-democracy tool include; "I intend to use the LAPOR application as often as possible" and "I intend to utilize the LAPOR app in the future". Responses of all items were measured on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

3.3. Data Analysis

The data obtained were analysed using SmartPLS 3.0 software. The PLS algorithm testing process aims to calculate convergent validity, reliability, discriminant validity, and test path coefficient. The convergent and discriminant validity calculated the value of factor loadings, Average Variance Extracted (AVE), and Fornell-Larcker value, while reliability was calculated as the value of composite reliability (CR) and Cronbach's alpha (CA). The PLS-SEM testing process was carried out twice, following the guidelines from Hair et al. (Hair et al., 2014). The first test aims to select outlier data. We maintain data with a residual value of testing between 4.00 and -4.00. We found that there were four data containing outlier data, and we decided to eliminate the data. The second PLS Algorithm testing and bootstrapping procedure used 355 data.

Table 1: Respondent's characteristic

Item	Category	Frequency (n= 355)	Percentage (%)
Gender	Male	170	47.89
	Female	185	52.11
Age	< 17 years old	39	10.98
	18-27	195	54.93
	28-37	99	27.89
	< 38 years old	22	6.20
Education	High School or Less	44	12.39
	Undergraduate	245	69.01
	Postgraduate	66	18.60
Most requested service	Complaint	294	82.82
	Public aspirations	12	3.38
	Information request	49	13.80

4. Results and Discussion

4.1. Respondents' characteristics

Respondent demographic information was collected and calculated using Ms. Excel. The demographic distribution of respondents, which includes; gender, age, level of education, and services frequently used, is in Table 1. The demographic of the sample demonstrated that 47.89% of respondents were male, while 52.11% were female. Most respondents have dominated between 18-27 (54.93%) and 28-37 (27.89%). Most of the respondents were dominated by undergraduates (69.01%) and postgraduates 18.60% while respondents had education at the high school or tutoring level 12.39%. Most respondents agreed that the LAPOR application was mainly used for complaint facilities (82.82%) and public aspirations (3.38%), while information requests were used by 13.80%.

4.2. Measurement model evaluation

An assessment was made of the accuracy of the research instruments used in measurement and consistency of the research instruments using reliability, convergent validity, discriminant validity, and content validity. The content validity of our survey instrument was achieved in two ways: first, the constructs and their dimensions used have been validated by previous work because they were all adopted from the existing literature. Second, the pre-test results that we conducted with subject matter experts ensure the validity of the contents of the survey instrument. The Cronbach Alpha method is a method used to measure the reliability and internal consistency of generally accepted research instruments. According to Hair et al. (2021), the reliability received is by asking if the comparison of Cronbach's alpha values with each construct is equal to or greater than 0.70. The level of internal consistency of each construct is outstanding.

The value of the loading factors received is greater than 0.707 (Benitez et al., 2020). The factor loading value indicates that the appropriate latent variable explains more than 50% of the variance in one indicator. Reliability assessment is carried out by considering Composite Reliability (CR) and Average Variance Extracted (AVE) test values. According to Benitez et al. (2020), an AVE value of greater than 0.5 is empirical evidence of convergent validity, which refers to the ability of a latent variable to explain more than half of the variance in the belonging indicator and its consequences. The required CR value for each construct must exceed 0.70. The CR and AVE values for each construct in the model are above 0.70, which is acceptable. Convergent validity and reliability of the measurement instruments were successfully confirmed because the values of each construct's loading factors, AVE, CR, and CA were greater than the specified minimum limits. The details are contained in Table 2.

Furthermore, the discriminant validity was evaluated by comparing the AVE square root of the construct with the correlation between constructs and other constructs. It can be evaluated with Fornell-Larker's Criterion value. The conclusion of discriminant validity that is considered "valid" is found by asking if the value of the square root of AVE is greater than the correlation shared between the construct and other constructs in the model. The discriminant validity of the measuring instrument was successfully confirmed. The square root value of the AVE of each construct was greater than all other cross-correlations with other constructs. The details of Fornell-Larker's Criterion are contained in Table 3.

We also assessed the value of VIF on all constructs, to ascertain whether the construct that formed the latent variables in the model was free from multicollinearity problems. The test results found that all indicators were < 10 , the VIF value of IU was between 2.522 and 3.918, Satis indicators were between 1.788 and 4.181, PU indicators were 2.484 until 3.028, EC indicators started from 2.872 until 3.601, EE indicators were between 1.441 until 2.561, SI indicators were between 2.326 until 2.988, and FC indicators were between 2.935 until 4.187. It means the model was free from multicollinearity problems or unproblematic.

Table 2: Convergent validity and reliability

Construct	Code	Convergent Validity		Reliability	
		Outer Loading (>0.7)	AVE (>0.5)	CR (>0.7)	CA (>0.7)
IU	IU1	0.891	0.850	0.944	0.912
	IU2	0.940			
	IU3	0.935			
Satis	Satis1	0.764	0.704	0.922	0.893
	Satis2	0.873			
	Satis3	0.897			
	Satis4	0.877			
	Satis5	0.773			
PU	PU1	0.905	0.756	0.925	0.893
	PU2	0.847			
	PU3	0.868			
	PU4	0.858			
EC	EC1	0.925	0.850	0.944	0.912
	EC2	0.927			
	EC3	0.913			
EE	EE1	0.774	0.674	0.892	0.841
	EE2	0.855			
	EE3	0.848			
	EE4	0.805			
SI	SI1	0.903	0.817	0.931	0.889
	SI2	0.886			
	SI3	0.923			
FC	FC1	0.895	0.832	0.952	0.933
	FC2	0.908			
	FC3	0.931			
	FC4	0.914			

Note: IU is the intention to use the LAPOR Application; Satis is user's satisfaction; PU is perceived usefulness; EC is expectancy confirmation; EE is effort expectancy; SI is social influence; FC is facilitating conditions.

Table 3: Discriminant Validity Fornell-Larker's Criterion

	EC	EE	FC	UI	PU	SI	Satis
EC	0.922						
EE	0.358	0.821					
FC	0.344	0.416	0.912				
UI	0.378	0.444	0.402	0.922			
PU	0.376	0.463	0.412	0.465	0.870		
SI	0.472	0.478	0.444	0.386	0.417	0.904	
Satis	0.493	0.489	0.535	0.474	0.506	0.803	0.839

Figure 2: Structural model results (*Significant at $p < 0.05$, ** at $p < 0.01$, and *** at $p < 0.001$)



Table 4: Hypotheses testing results

Hypotheses	β	f2	Decision
H1: Satis → IU	0.238*	0.025	Supported
H2: PU → IU	0.222***	0.049	Supported
H3: FC → IU	0.119*	0.014	Supported
H4: SI → IU	-0.045	0.001	Not Supported
H5: EE → IU	0.197***	0.039	Supported
H6: PU → Satis	0.262***	0.095	Supported
H7: EC → Satis	0.281***	0.117	Supported
H8: FC → Satis	0.328***	0.153	Supported
H9: EC → PU	0.376***	0.164	Supported

Note:
 *Significant at $p < 0.05$, ** at $p < 0.01$, and *** at $p < 0.001$
 $f2 \geq 0.02$ (small), $f2 \geq 0.15$ (medium), and $f2 \geq 0.35$ (large)

4.3. Structural model evaluation

The relationship significance is done by combining the results of the PLS algorithm and the bootstrapping method. The PLS algorithm calculates the correlation between constructs through the β -value and f-square, while the bootstrapping method displays the model relationship through the p-value. β -value shows the correlation between constructs through the path coefficient number, while f2 shows the magnitude of the effect size of the independent variable on the dependent variable. The p-value indicates the number of errors in the test that can be tolerated. Table 4 concludes that the proposed hypotheses are a combination of the β -value, p-value, and f-square. The result shows the intention to use e-democracy application is positively predicted by Satisfaction ($\beta = 0.238$, $p < 0.05$), PU ($\beta = 0.222$, $p < 0.001$), FC ($\beta = 0.119$, $p < 0.05$), and EE ($\beta = 0.197$, $p < 0.001$); therefore, **H1**, **H2**, **H3**, and **H5** is supported. In contrast, **H4** is not supported because SI is not statistically significant in predicting IU ($\beta = -0.045$, $p < 0.634$). The present study also shows that PU ($\beta = 0.262$, $p < 0.001$), EC ($\beta = 0.281$, $p < 0.001$), and FC ($\beta = 0.328$, $p < 0.001$) significantly predicted Satis so that **H6**, **H7**, and

H8 are supported. Furthermore, the result also founds that EC positively influences PU in the context of e-Democracy ($\beta = 0.376$, $p < 0.000$). Therefore, **H9** is supported. The present study also reveals the effect size in Table 4 and shows the effect size ranges from no effect to medium effect. In addition, the present study displays the structural equation modelling results in Figure 2 to make it easier for the reader to understand the results. Figure 2 also shows the R-square values that indicate the variance of the dependent variable, which is explained by the independent variable that influences it. An R-square value greater than 0.25 indicates that the proposed model is quite well. Overall, the independent variable in this study explains 0.334 or 33.4% of the variation in the intention to use the LAPOR application.

5. Discussion

This study's purpose was to predict individual behavioural intentions in accepting and using technology to improve the democratic system in Indonesia. The proposed model is proposed with the integration of ECM and UTAUT. The study's findings showed that eight hypotheses were supported, while one was not supported. The results showed that satisfaction and perceived usefulness strongly predict the intention to use e-democracy. The result is in line with previous work findings on the use of mobile payment by Sarassina (2022) and also with shared nurses' continuance intention by Xie et al. (2020). This study believes that user satisfaction and perceived usefulness are "added values" encouraging citizens to continue using the LAPOR application. The basis for maintaining sustainable use is product use based on meeting user needs and usability functions (Xie et al., 2020). Users also feel they can contribute more to politics and governance by using e-democracy. Therefore, perceived usefulness significantly affects the intention to use e-democracy, which aligns with hypothesis H2. According to Aljazzaf et al. (2020), technical factors are strongly related to building better and more efficient e-government services. As a result, it encourages users to prefer e-government services. The result is in line with previous work findings from Wirtz et al. (Wirtz et al., 2018, 2019) in the open government data context, Sarassina (2022) in the use of mobile payment, and also Xie et al. (2020) in shared nurses continuance intention.

Furthermore, the results also prove that effort expectancy significantly affects the intention to use e-democracy. Effort expectancy refers to citizens' belief that using e-democracy allows them to be free from challenges and facilitates political participation. This study's results support previous work's findings, which revealed an effect between effort expectancy on intention to use (Mansoori et al., 2018; Naranjo-zolotov et al., 2019). According to Venkatesh et al. (2003), effort expectancy is a variable that plays an essential role in technology acceptance. In the context of e-democracy, implementing LAPOR application products and services allows citizens to participate in politics and government easily. Thus, citizens feel that the LAPOR application is a solution for more outstanding contributions to politics and government without trying hard. However, this study's results reject previous work's findings (Mensah, 2019; Naranjo-Zolotov, Oliveira, & Casteleyn, 2019). Although the technological attribute factors that support the digital democracy platform are good, however, the constructs in contextual factors do not all have a good influence on behavioural intentions to use the digital democracy platform at all. The findings show, facilitating conditions have a significant

effect on the intention to use e-democracy. Facilitating conditions refer to the availability of conditions that facilitate the implementation of LAPOR application products and services. Telecommunications infrastructure allows the government to create a conducive environment in providing products and services to citizens (Mensah, 2019). Even the availability of telecommunication infrastructure allows citizens to access the LAPOR application products and services. The results of this study are also in line with previous work, which revealed an influence between facilitating conditions on intention to use (Mansoori et al., 2018; Mensah, 2019; Naranjo-zolotov et al., 2019; Naranjo-Zolotov, Oliveira, & Casteleyn, 2019; Naranjo Zolotov et al., 2018).

The finding also show that social influences do not significantly affect the intention to use e-democracy. The findings show that citizens ignore the opinions of others in deciding to use the LAPOR application, which is easy to use and valuable. Social influence plays an important role when users have insufficient experience and knowledge of information systems at an early stage (Venkatesh et al., 2003). Over time, the experience gained by citizens continues to increase. It pushes social influence to decrease (Venkatesh et al., 2003). In addition, the characteristics of the respondents show that most of the respondents have a bachelor's level of education. Citizen education factors enable good knowledge of information systems. This factor is why citizens reduce the influence of other people's opinions in using the reporting application. Another reason is that social influence results from marketing promotions and advertising from the government that manages the system (Naranjo Zolotov et al., 2018). Thus, citizens may need more influence on the opinions of others in deciding to use the LAPOR application. Citizens do not necessarily know each other when using e-democracy, which is a factor that can reduce social influence itself (Naranjo-Zolotov, Oliveira, Casteleyn, et al., 2019). According to Musial-Karg (2022), ICTs are useful in increasing citizens' centrality relations with state structures, increasing citizens' political activities digitally, creating conditions for increasing public debate, and reducing social exclusion. As a result, citizens do not know each other, which reduces social influence among citizens (Naranjo-zolotov et al., 2019). However, our finding is in line with previous work that showed social influence has no significant effect on the intention to use (Mansoori et al., 2018; Mensah, 2019; Naranjo-zolotov et al., 2019; Naranjo-Zolotov, Oliveira, & Casteleyn, 2019) but it is found in a different context.

Then, perceived usefulness, expectancy confirmation and facilitating conditions are determining factors that significantly affect user satisfaction in the LAPOR application (H6, H7, and H8). In actual use of the LAPOR application, user satisfaction describes the psychological state the user feels after expectations are met. As determinant factors in ECM, expectancy confirmation and perceived usefulness describe the user's satisfaction (Bhattacharjee et al., 2008; Sarassina, 2022; Xie et al., 2020). Users are happy when the actual experience and advantages of utilizing the LAPOR application meet or surpass expectations. User satisfaction with the LAPOR application will increase if they are satisfied when the technology they use provides real benefits. The findings showed that expectancy confirmation substantially affects perceived usefulness. Users have high hopes for the LAPOR application to provide more benefits when they use ICTs to participate in politics and government. When the LAPOR application can benefit users in submitting complaints, public aspirations, and information requests to the government, before using the LAPOR application, the user will form their target expectations in the initial stages. This will be confirmed if the target user expectations have been met. At the same time, the user's actual experience is one of the instruments for perceived

benefits. Experience builds users' perception of the LAPOR application service. The results of the path coefficient test show a value ($\beta = 0.376$, $p < 0.001$). That means that expectancy confirmation fundamentally influences the user's perception of usefulness. The better the user experience, the higher the perceived usefulness of the LAPOR application. The research findings support the findings of previous work that there is a significant influence between expectancy confirmation on perceived usefulness (Sarassina, 2022; Xie et al., 2020).

In particular, the perceived usefulness significantly impacts user satisfaction, the "added value" obtained, or even what users feel. Perceived usefulness and expectancy confirmation are individual assessments of the benefits provided by the technology (Wirtz et al., 2021). The better the level of expectancy confirmation, the better the relationship between the user's expectations and the user's satisfaction. Conversely, the impact will decrease user satisfaction if the user's expectations are unmet (disconfirmation). In addition, the ICT's infrastructure facilities support implementing technological devices to run well (Venkatesh et al., 2003). As a result, the LAPOR application work as well. LAPOR application is a tool for citizens to participate in politics and government by conveying aspirations, complaints, and requests for information to the government. Therefore, the level of user satisfaction increases cumulatively from both determinant factors.

The research contributes theoretically, methodologically, and practically in the context of the adoption of e-democracy. Our research makes three main contributions to enriching the theoretical body of literature on e-democracy tool adoption: first, the proposed model integrating UTAUT and ECM to explain intentions to use in e-democracy is well validated. The measurement model shows acceptable reliability and validity values, while the structured equation model also shows a high degree of model fit for empirical data. Empirical data collection was conducted in Indonesia to test the model empirically. As a result, eight hypotheses were validated, but one was rejected. Thus, the second theoretical contribution is that investigations into the proposed model enriched knowledge and reduced both theories' limitations through replication, application, and integration of ECM and UTAUT. The proposed model allows a better understanding of predicting citizens' behavioural intentions using e-democracy. The proposed model also helps us identify and analyse the crucial factors for citizens in deciding whether to continue or stop using e-democracy. Therefore, the third theoretical contribution is to enrich the literature on adopting e-democracy.

Previous work focused on using specific theoretical models, TRA, TPB, TAM, and UTAUT. Some of the past work has focused on the context of e-participation. Based on a literature review, this research is the first study to replicate, apply and integrate ECM and UTAUT. Methodological contributions were also made to this study. The proposed model, integrating ECM and UTAUT to explain intentions to use in the context of e-democracy, is well validated. Examination of CFA, construct, convergent, and discriminant validity helps analyse solid results in measuring all constructs. The low factor loading in the construct was selected. Thus, this study has validated all the constructs and their items. Lastly, this research provides a practical contribution to enriching knowledge on multidimensional constructs in e-democracy. This knowledge also helps policymakers in government institutions and application developers consider multidimensional factors in improving the quality of LAPOR applications. This factor impacts the application's success in attracting more citizens who accept and use government products and services.

6. Conclusion

This study aims to fill the existing research gap in assessing the e-democracy context. The proposed model is proposed by integrating the expectancy confirmation model (ECM) and the unified theory of acceptance and use of technology (UTAUT). Both theoretical models were chosen to comprehensively understand the factors influencing the acceptance and use of e-democracy. The study's findings revealed that eight hypotheses were substantially supported, while one was rejected. Some research limitations may be addressed in future studies: first, data collection was carried out relatively quickly (cross-sectional) citizen perceptions about perceived usefulness, expectancy confirmation, satisfaction, facilitating conditions, social influences, effort expectancy, and intention to use e-democracy may change over time due to the accumulation of new knowledge and experiences. Therefore, future studies should use a longitudinal data collection design to capture more accurate findings from the sample studied. Second, although the moderation of this study is satisfactory, other variables, such as expectancy confirmation and perceived usefulness can also moderate the relationship between the intention to use e-democracy and other factors/variables. Future research is important, considering these variables as moderators. Third, the research data collection technique is a questionnaire. Respondents may not express their valid opinions when answering the questions arranged in a questionnaire. It can cause errors in the test results. This issue must be handled with care when interpreting research data.

Our policy recommendations are related to the finding for improving the quality of the LAPOR application. The study's results revealed that social influence is a factor that affects a minimal category ($\beta = -0.045$, $f^2 = 0.001$). Social influence refers to citizens' beliefs about the opinions and behaviour of others in accepting and using e-democracy. Thus, developing the live chat feature on the LAPOR application may be required. The live chat feature allows citizens to interact and exchange opinions between citizens regarding complaints, public aspirations, and requests for information. The addition of the live chat feature attracted many people to use the LAPOR application's products and services. Digital platforms are a powerful alternative for increasing community participation and providing complete services for citizens (El Hajj et al., 2023). The study's results also reveal that facilitating conditions are factors that also affect the small category ($\beta = 0.119$, $f^2 = 0.014$) in influencing citizens' behavioural intentions to accept and use e-democracy. Facilitating conditions refer to the availability of infrastructure to support the implementation of LAPOR application products and services. Thus, developing telecommunication infrastructure is a critical step the government can take. The availability of telecommunications infrastructure allows easy access for citizens to the LAPOR application products and services. Developing countries, especially Indonesia, also face the problem of infrastructure inequality between provinces. Therefore, developing telecommunications infrastructure is a priority in the development agenda in Indonesia.

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