Blantika: Multidisciplinary Jornal
Volume 3 Number 9, Agustus, 2025
p- ISSN 2987-758X e-ISSN 2985-4199

An Analysis of E-Voting Adoption Using the Technology Acceptance Model (TAM) in the Simultaneous Village Head Elections in Sleman Regency)

Eri Hermawan[1], Dodie Tricahyono[2], Edi Witjara[3]
Universitas Telkom, Indonesia
Corresponding Author: Erihermawan89@gmail.com, dodietricahyono@telkomuniversity.ac.id, ewitjara@gmail.com

ABSTRACT
Electronic voting, commonly referred to as E-voting, represents a contemporary advancement in democratic systems, designed to optimize electoral efficiency, precision, and citizen engagement. One of the prominent entities involved in developing this digital infrastructure is PT Inti Konten Indonesia. This research investigates the integration of the E-voting mechanism within the 2021 concurrent village head elections held in Sleman Regency, utilizing the Technology Acceptance Model (TAM) as the theoretical foundation. The TAM construct in this context evaluates how Perceived Ease of Use, Perceived Usefulness, and Behavioral Intention to Use influence the Actual Usage of the system. Additionally, this study introduces E-Trust as an extended variable, offering new insights into user confidence toward digital electoral systems. A quantitative paradigm framed by an explanatory research design guided the inquiry. Data acquisition was conducted via structured questionnaires administered to Sleman residents who actively participated in E-voting electoral process. The sampling strategy adopted was stratified sampling, resulting in a total of 400 participants, with the sample size determined through the Slovin formula applying a 5% margin of error. To examine the hypothesized relationships among constructs, Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed using the SmartPLS analytical tool. This technique facilitated the assessment of both direct and indirect effects across the model's variables.
Keywords: *E-Voting; Technology Acceptance Model (TAM); Elections; Village Head; Elections.*

Manuscript accepted:Date *Revised: Date* *Date of publication: Date*

INTRODUCTION

Indonesia conducts general elections (Pemilu) every five years, based on Law No. 7 of 2017 concerning General Elections. The electoral process in Indonesia has undergone a long evolution that reflects the development of its democratic system. Beginning in 1955, Indonesia's elections have experienced significant transformations over time, with a focus on increasing voter participation and transparency in the electoral process. In 1998, a major reform occurred, providing greater opportunities for citizen participation in elections. One of the milestones in Indonesia's electoral history was the introduction of direct presidential elections in 2004, which granted the public full authority to elect their national leaders. Several types of elections are conducted in Indonesia, including Village Head Elections (Pilkades). The fundamental principles upheld in the implementation of elections are encapsulated in the acronym LUBER JURDIL direct, general, free, confidential, honest, and fair elections.

To tackle these issues, in 2013, the Agency for the Assessment and Application of Technology (BPPT), which later merged into the National Research and Innovation Agency (BRIN), in collaboration with PT INTI (Persero), developed an electronic voting (E-voting) system as an innovative solution. The initial implementation of E-voting was conducted at the Pilkades level as a pilot project to assess its effectiveness and public acceptance. E-voting offers several advantages, such as faster electoral processes, higher accuracy, reduced spoiled ballots, elimination of duplicate voter data, and long-term cost efficiency. This technology reflects Indonesia's efforts to adopt innovation in order to create a more modern, transparent, and fair democratic process. The implementation of E-voting represents an important step in addressing the need for an electoral system that is efficient and relevant to contemporary developments, while also supporting the realization of sustainable democracy in Indonesia.

E-voting began to be commercialized by PT INTENS in 2016. By 2021, E-voting had been implemented in 1,728 villages across 25 regencies in Indonesia. This figure remains relatively small compared to the total of 83,820 villages nationwide (BPS, 2021). On average, only about 192 villages adopted E-voting per year, resulting in PT INTENS's market penetration over the past nine years reaching only 2.06% of the available market potential. This low adoption rate illustrates the limited uptake of E-voting despite its expected benefits of improving accuracy, efficiency, and security in electoral processes, particularly at the village head election (Pilkades) level.

Of the 192 villages that had implemented E-voting by 2021 in Pilkades, Sleman Regency, Special Region of Yogyakarta, emerged as the regency with the largest number of villages and voters participating simultaneously. Sleman Regency covers an area of 574.82 km² with a population of 1,118,353 and a population density of 1,900 people/km². The simultaneous Pilkades in Sleman Regency was initially scheduled for 2020 but was postponed due to the Covid-19 pandemic and was eventually held on August 30, 2021. The simultaneous Pilkades in Sleman was conducted in 35 villages across 912 polling stations (TPS). A total of 160 candidates for village heads were officially nominated, with the total number of voters reaching 337,412 people (KPU, 2021). The application of E-voting is not limited to Pilkades or Pilkada. This system can be adapted for various other types of elections, such as legislative elections, presidential elections, or regional legislative council (DPRD) elections.

Implementing E-voting in multiple electoral contexts could enhance efficiency, reduce logistical costs, and accelerate the vote-counting process. However, its implementation requires technological infrastructure readiness, clear regulatory frameworks, and a high level of public trust in the system. According to research conducted by Kusuma (2022), although E-voting offers numerous benefits, regulatory and implementation challenges remain primary concerns in the adoption of this technology.

The adoption of e-voting technology is inevitably accompanied by challenges, including user acceptance of the technology itself. The Technology Acceptance Model (TAM), developed by Fred Davis in 1986, offers a theoretical framework to understand the factors that influence user acceptance of new technologies. TAM focuses on several key variables that are believed to shape users' attitudes and behaviors toward new technology, including Perceived Ease of Use (PEOU), Perceived Usefulness (PU), Attitude Toward Using (ATU), Behavioral Intention to Use (BIU), and Actual System Use (ASU) (Davis et al., 1989).

Perceived Ease of Use (PEOU) refers to the degree to which a user believes that using a particular technology will be free of effort. According to Davis et al. (1989), PEOU reflects users' perceptions of how easy the technology is to learn and operate. PEOU describes how users both voters and election officials perceive the e-voting system as easy to navigate without difficulty. The easier a technology is to use, the more likely users are to accept it. In this study,

PEOU will be evaluated to assess the extent to which perceived ease of use influences e-voting adoption in village head elections (Pilkades) in Sleman Regency. The alignment of technology with user needs also plays a critical role in shaping PEOU. Venkatesh and Bala (2008) found that the compatibility of technology with users' needs enhances perceived ease of use. Research conducted by Ramadhan et al. (2024) found that PEOU influences Actual System Use. Similarly, Tyas and Darma (2017) confirmed that PEOU significantly affects Actual System Use. Furthermore, Musriannur, Yasirandi, and Oktaria (2021) demonstrated that the constructs of Perceived Usefulness influence Behavioral Intention to Use, Perceived Usefulness affects Attitude Toward Using, Perceived Ease of Use influences Behavioral Intention to Use, and Perceived Ease of Use affects Attitude Toward Using. Additionally, Widiyanesti and Reynald (2016) confirmed that both Perceived Usefulness and Perceived Ease of Use have significant impacts on Behavioral Intention to Use.

According to a report by Radio Republik Indonesia (RRI), the people of Sleman expressed that despite using the e-voting system for the first time, they were satisfied and encountered no significant obstacles during the election process. The report highlighted that the majority of users found e-voting easy to understand due to its intuitive interface, clear instructions, and guidance provided throughout the process (RRI, 2024). This finding aligns with the Technology Acceptance Model (TAM), where two main factors Perceived Ease of Use and Perceived Usefulness are key determinants of technology acceptance. Ease of understanding and time efficiency contribute to user comfort and satisfaction. These facts strengthen the argument that e-voting holds significant potential to be widely accepted as a modern solution for democratic processes. However, alongside the rapid adoption of technology emerges a new challenge the need to build electronic trust (eTrust).

eTrust refers to the extent to which individuals trust the technology to perform according to their expectations in a digital environment. eTrust encompasses users' confidence in critical aspects such as data security, process transparency, and system integrity. Previous studies have predominantly focused on the ease of use and usefulness of technology, often overlooking the increasingly crucial element of trust (Komiak & Benbasat, 2006). The inclusion of eTrust as one of the variables in this study represents a novel contribution that offers a more holistic perspective on e-voting acceptance. The presence of eTrust provides valuable insights into how communities engage with technology. According to Juhri and Dewi (2017), trust significantly affects Behavioral Intention to Use, and their study further confirmed that trust also has a significant influence on Attitude Toward Using.

Public trust is the foundation of successful implementation of new technologies, particularly those related to elections. A lack of trust can be a major barrier to adopting e-voting, even if the technology is perceived as easy to use and beneficial. According to Eid (2011), technological implementation failures are often due to a lack of trust in the system, despite its technical reliability. The inclusion of eTrust in this research model introduces an approach that is not only technical but also social, thereby offering a better explanation of how communities interact with technology within the context of democracy.

Perceived Usefulness (PU) is defined as the degree to which an individual believes that using the technology will enhance performance or provide tangible benefits. PU reflects users' perceptions of the extent to which the technology can improve productivity or performance in a specific task or job (Davis, 1989). If users believe that e-voting provides benefits such as improving vote-counting accuracy and expediting the voting process, the likelihood of technology acceptance increases. Research by Seddon and Kiew (1994) indicated that higher system quality significantly contributes to Perceived Usefulness. Ease of use is also an

important factor influencing PU. Ramadhan et al. (2024) demonstrated that PU affects Actual System Use. Similarly, Tyas and Darma (2017) confirmed that PU has a significant influence on Actual System Use.

Literature Review and Hypotheses Development

This study investigates the relationships among Perceived Ease of Use (PEU), Perceived Usefulness (PU), and E-Trust on Behavioral Intention to Use (BIU) and Actual System Use (ASU) in the implementation of E-Voting for simultaneous village head elections in Sleman Regency. PEU represents the belief that the E-Voting system is easy to use, hypothesized to directly influence ASU and indirectly through BIU. PU, which reflects the system's perceived efficiency enhancement, is hypothesized to significantly affect both BIU and ASU, either directly or indirectly. Additionally, E-Trust, encompassing trust in the system's security, privacy, and reliability, is posited to have a significant impact on BIU and ASU, with BIU acting as a mediating variable in the indirect relationship. BIU, as the behavioral intention to use technology, serves as the primary predictor of ASU, signifying the transition from intention to actual behavior.

Previous research by Mulyanto et al. (2020) and Siswoyo & Irianto (2023) demonstrated that Perceived Usefulness positively influences technology acceptance and behavioral intention to use the system. For example, Rahmawati & Narsa (2019) found that Perceived Usefulness indirectly impacts actual system use but plays a crucial role through behavioral intention. Furthermore, Aditya & Wardhana (2016) established that Perceived Usefulness significantly affects the intention to use applications. Studies by Siswoyo & Irianto (2023) indicated that Perceived Ease of Use influences Perceived Usefulness and the intention to use the system. This finding aligns with Alomari (2016), who reported that ease of use positively affects the intention to use E-Voting. Additionally, Sulistyani (2020) confirmed that Perceived Ease of Use directly impacts behavioral intention and actual system use.

Based on the findings of Aditya & Wardhana (2016), Sulistyani (2020), and Benamati et al. (2012), behavioral intention to use technology serves as a mediator linking factors such as Perceived Ease of Use and Perceived Usefulness with actual system use. Sulistyani (2020) demonstrated that behavioral intention mediates the influence of Perceived Ease of Use on actual system use.

According to Adriansyah et al. (2016) and Hooda et al. (2022), trust has a significant impact on behavioral intention to use technology. Juhri & Dewi (2017) reported that trust significantly affects Attitude Toward Using, Perceived Ease of Use significantly impacts Attitude Toward Using, and trust significantly influences Behavioral Intention to Use. Furthermore, Musriannur, Yasirandi, & Oktaria (2021) found that the constructs of Perceived Usefulness influence behavioral intention to use and attitude toward using; Perceived Ease of Use also significantly affects both behavioral intentions to use and attitude toward using. Widiyanesti & Reynald (2016) similarly demonstrated the significant effects of Perceived Usefulness and Perceived Ease of Use on behavioral intention to use.

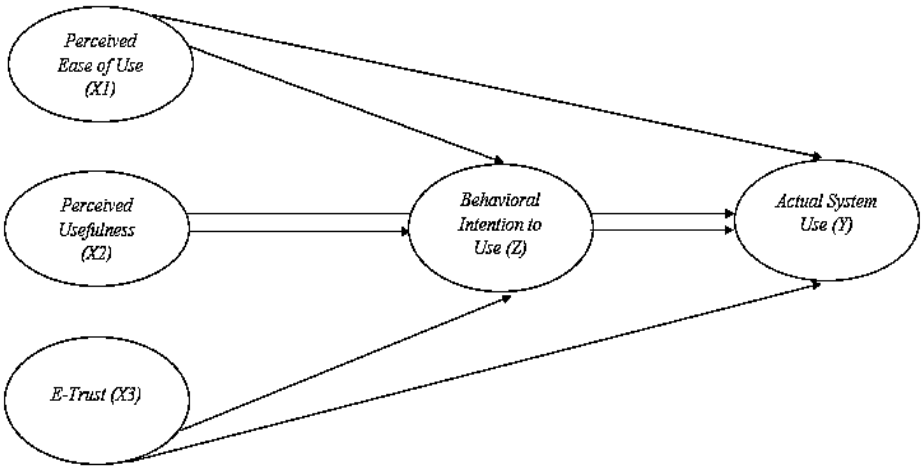

Figure 1. Framework Research
Source: Primary Data

RESEARCH METHOD

This research utilizes a quantitative methodology within an explanatory framework to investigate the underlying causal linkages among the examined constructs. According to Creswell (2014), explanatory quantitative research aims to explain the influence of independent variables on dependent variables through hypothesis testing. The primary focus of this research is to analyze the relationships among Perceived Ease of Use (PEOU), Perceived Usefulness (PU), and E-Trust on Actual System Use (ASU) in the implementation of E-Voting in Sleman Regency, Yogyakarta, with Behavioral Intention to Use (BIU) serving as a mediating variable. The theoretical framework applied in this study is the Technology Acceptance Model (TAM), which is extended by incorporating E-Trust as an additional variable to assess users' trust in the security and reliability of the system.

The population of this research comprises 322,433 eligible voters who participated in the Village Head Elections (Pilkades) in Sleman. The sample was selected using stratified sampling with the Slovin formula at a 5% margin of error, resulting in a total of 400 respondents. Data were collected through a closed-ended questionnaire using a 5-point Likert scale (ranging from Strongly Disagree to Strongly Agree). The research instrument was operationalized using indicators as outlined in the following variable operationalization table:

Table 1. Variable Operationalization

Variable	Indicator	Item
Perceived Ease of Use (PEOU) (Davis, 1989)	Productivity	1,2
	Job Performance	3,4
	Task Effectiveness	5,6
	Ease of Use	7,8
Perceived Usefulness (PU) (Davis, 1989)	Ease of Learning	1,2
	Clarity and understanding	3,4
	Mental Effort	5,6
	Skill Mastery	7,8
E-Trust (Chiu et al., 2009)	Reliability	1,2
	Security	3,4
	Credibility	5,6
	User Experience	7,8

	Perception of Technology	9,10
Behavioral Intention to Use (BIU) (Davis, 1989)	Intention to Use	1,2
	Usage Prediction	3,4
	Usage Plan	5,6
Actual System Use (ASU) (Davis, 1989)	Frequency of Use	1,2
	Duration of Use	3,4
	Task Integration	5,6

Source: Secondary Data

Data analysis was carried out using Partial Least Squares Structural Equation Modeling (PLS-SEM), facilitated through the SmartPLS software. The assessment of the measurement model involved evaluating convergent validity ensured by Average Variance Extracted (AVE) values exceeding 0.5 and item loadings above 0.7 as well as discriminant validity, confirmed when AVE surpassed inter-variable correlations. Construct reliability was established through Composite Reliability and Cronbach's Alpha, both exceeding the threshold of 0.7. To assess the structural model, indicators such as the Goodness of Fit (GoF) index, R^2, and F^2 values were examined. The significance of hypothesized paths, both direct and mediated, was determined through the bootstrapping method, with a 5% significance level ($\alpha = 0.05$) employed for statistical inference. The results of the analysis were interpreted based on the p-value, T-statistic, and original sample values to determine the acceptance or rejection of the hypotheses. This study contributes methodologically by integrating E-Trust into the TAM model, as well as applying SEM-PLS to explain the complexity of the relationships between variables within the scope of E-Voting. This procedure ensures the validity of the findings in empirically explaining the factors that influence the acceptance of electronic voting technology

RESULTS AND DISCUSSION

This study aims to analyze the acceptance of the E-Voting system using the Technology Acceptance Model (TAM) in the simultaneous village head elections in Sleman Regency. Ontologically, this research is based on the assumption that the reality of E-Voting technology acceptance can be measured and understood through well-defined constructs such as Perceived Ease of Use (PEOU), Perceived Usefulness (PU), E-Trust, Behavioral Intention to Use (BIU), and Actual System Use (ASU). The ontology in this study is objective, where the acceptance of E-Voting technology is considered a phenomenon that can be observed and measured through empirical indicators. Thus, this research assumes that technology acceptance is not merely an abstract concept, but something that can be operationalized through measurable variables.

Respondent Description

As of 2021, E-Voting adoption in Indonesia remains relatively low, with implementation in 1,728 villages (2.06% of the total 83,820 villages). Sleman Regency is one of the leading regions, implementing this system in the 2021 Village Head Election in 35 villages with 912 polling stations, involving 337,412 voters. This implementation includes a variety of scales, such as Sendangtirto Village (24,968 voters) and Madurejo Village (2,060 voters), demonstrating the trial of technology under diverse conditions, from large to small populations. Sleman's success in conducting E-Voting simultaneously makes it an ideal case study to evaluate the acceptance of this technology.

The study involved 400 respondents from Sleman with diverse demographic characteristics. Of the respondents, 55% were male and 45% female, reflecting a balanced gender representation. In terms of education, the majority were high school/vocational school

graduates (36.3%) and bachelor's degree holders (26.3%), while 20% of respondents had primary school education, indicating a variation in digital literacy. The workforce was dominated by entrepreneurs (22.5%) and village officials (16.3%), with significant participation from informal sectors such as farmers (8.8%) and laborers (8.8%). Geographically, respondents were concentrated in urban sub-districts such as Depok (15.3%) and Gamping (13.0%), while rural areas like Cangkringan (1.3%) had limited representation.

Outer Model Analysis

The assessment of the outer model was undertaken to examine the associations between latent constructs and their observed indicators by applying tests for validity and reliability. The analysis of convergent validity revealed that all constructs namely X1 (Perceived Ease of Use), X2 (Perceived Usefulness), X3 (E-Trust), Z (Behavioral Intention to Use), and Y (Actual System Use) fulfilled the requisite AVE threshold, with each construct yielding a value greater than 0.5. Specifically, the AVE scores were 0.936 for X1, 0.911 for X2, 0.892 for X3, 0.900 for Z, and 0.879 for Y, indicating that more than 87% of the variance in the observed variables is explained by their respective latent constructs. Furthermore, the loading coefficients for all indicators ranged impressively between 0.928 and 0.971, significantly exceeding the established minimum criterion of 0.7. These findings substantiate the strong and consistent measurement of each construct by its respective indicators.

Discriminant validity was assessed using the Fornell-Larcker criterion, where the square root of the AVE for each variable (Y = 0.937; Z = 0.949; X3 = 0.944; X2 = 0.967; X1 = 0.954) exceeded the correlations between constructs. For instance, the square root of the AVE for Y (0.937) was higher than its correlations with Z (0.904), X3 (0.879), X2 (0.846), and X1 (0.852). A similar pattern was observed across all variables, demonstrating that each construct is empirically distinct and unique.

Reliability tests using Composite Reliability and Cronbach's Alpha produced remarkably high values for all variables. Composite Reliability ranged from 0.972 (Y) to 0.990 (X2), while Cronbach's Alpha values ranged from 0.972 (Y) to 0.990 (X2), significantly exceeding the minimum requirement of 0.7. These findings indicate a very strong internal consistency among indicators within each variable. Therefore, the measurement model is deemed valid and reliable, fulfilling the prerequisites for further analysis of the structural model. These results strengthen the reliability of the research instrument in reflecting the theoretical constructs under investigation and ensure the accuracy of the interpretation of relationships among variables in the context of E-Voting technology acceptance.

Inner Model Analysis

The inner model analysis was carried out to evaluate the structural relationships between latent variables and to test the research hypotheses. First, the Goodness of Fit (GoF) was calculated by combining the Average Communalities Index (0.903) and the R-square (0.853), resulting in a GoF value of 0.877. This value far exceeds the benchmark for a large effect size (0.36), indicating that the model exhibits excellent predictive relevance, supported by high validity, reliability, and predictive strength.

The R-square test revealed that 82.9% of the variance in Actual System Use (ASU) and 87.8% of the variance in Behavioral Intention to Use (BIU) could be explained by the independent variables within the model. Both adjusted R^2 values (0.827 for ASU and 0.877 for BIU) indicate substantial predictive capability without signs of overfitting. This further supports the model's appropriateness in explaining the dynamics of E-Voting adoption.

The F-square test revealed varying effect sizes among the variables. Behavioral Intention to Use (BIU) exerted a large effect on ASU ($f^2 = 0.300$), underscoring the pivotal role of user intention in driving actual system use. E-Trust exhibited a moderate effect on BIU ($f^2 = 0.254$), but only a weak effect on ASU ($f^2 = 0.039$). Meanwhile, Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) demonstrated minimal effects on both ASU and BIU ($f^2 = 0.001–0.017$), suggesting that perceived ease and usefulness are less dominant factors in this context.

These findings emphasize that BIU functions as the primary mediator linking psychological factors (such as E-Trust) to actual system usage. Although E-Trust contributes to the formation of user intention, actual implementation is more directly influenced by the intention itself. Conversely, the relatively weak effects of PEOU and PU indicate the need for supplementary approaches, such as training or socialization initiatives, to strengthen users' perceptions of the E-Voting technology.

Hypothesis Testing

The hypothesis testing was conducted using the bootstrapping procedure, focusing on the P-value, T-statistic, and Original Sample estimates. The subsequent step involved the formal hypothesis testing process.

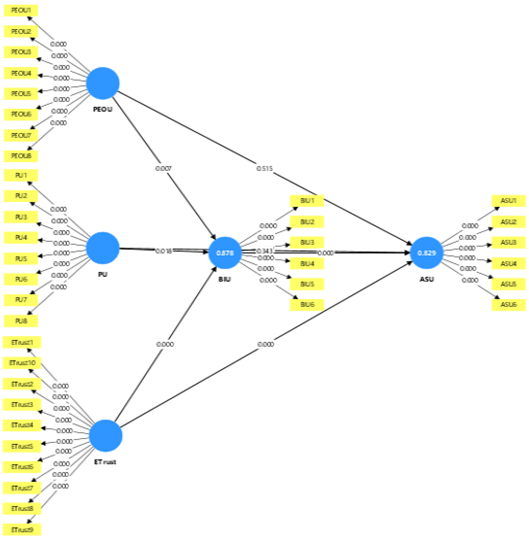

Figure 2. Boothstarping Path Analysis
Source: SmartPLS Data Processing

The following table presents the results of the bootstrapping analysis performed using SmartPLS:

Table 2. Direct Effect

Impact	*Original Sample*	T *Statistics*	P *Values*
PEOU -> BIU	0,173	2,694	0,007
PU -> BIU	0,179	2,366	0,018
ETrust -> BIU	0,598	9,584	0,000
PEOU -> ASU	0,049	0,651	0,515
PU -> ASU	-0,088	0,948	0,343
ETrust -> ASU	0,313	3,748	0,000
BIU -> ASU	0,649	10,507	0,000

Source: SmartPLS Data Processing

H_1: Perceived Ease of Use has a significant influence on Behavioral Intention to use in the implementation of E-Voting for the Simultaneous Village Head Election in Sleman Regency

"The analysis results indicate that Perceived Ease of Use (PEOU) has a significant influence on Behavioral Intention to use (BIU), with a path coefficient (Original Sample) of 0.173, a T-statistic of 2.694 (> 1.96), and a p-value of 0.007 (< 0.05). These findings suggest that the ease of use of the E-Voting system significantly increases the behavioral intention to use it among the citizens of Sleman Regency. Therefore, hypothesis H_1 is accepted."

"Theoretically, this result is consistent with the Technology Acceptance Model (TAM) developed by Davis (1989), which posits that the ease of use of a technology is a key factor in shaping users' intention to adopt it. According to Davis, the easier a technology is to use, the less effort is required from users, thus increasing their likelihood of accepting and using the technology."

Perceived Ease of Use (PEOU) has also been proven to have a significant influence on Behavioral Intention to use (BIU) in various prior studies. Adriansyah et al. (2016) found that PEOU positively contributes to user attitudes, which ultimately enhances acceptance of the E-Vote technology. This finding is corroborated by Mulyanto et al. (2020), who demonstrated that PEOU significantly influences the acceptance of the MasjidLink application.

H_2: Perceived Usefulness has a significant influence on Behavioral Intention to use in the implementation of E-Voting for the Simultaneous Village Head Election in Sleman Regency

"Perceived Usefulness (PU) has been shown to have a significant influence on Behavioral Intention to use (BIU), with a path coefficient of 0.179, a T-statistic of 2.366 (> 1.96), and a p-value of 0.018 (< 0.05). These findings indicate that citizens' perceptions of the usefulness of the E-Voting system significantly affect their intention to use it. Therefore, hypothesis H_2 is accepted."

"Theoretically, this result aligns with the Technology Acceptance Model (TAM) proposed by Davis (1989), which states that perceived usefulness of a technology is a key determinant in shaping users' intention to adopt it. According to Davis, the higher the users' perception of the benefits of a technology, the greater the likelihood they will accept and use it. In the context of E-Voting, the perceived benefits by the community such as time efficiency, accuracy in vote counting, and transparency in the electoral process have contributed to the increase in the intention to use the system."

Perceived Usefulness (PU) has also been widely found to have a strong impact on Behavioral Intention to use (BIU). Adriansyah et al. (2016) reported that PU positively affects the acceptance of E-Vote technology. This finding is supported by Mulyanto et al. (2020), who showed that PU positively influences the acceptance of the MasjidLink application. Rahmawati & Narsa (2019) added that PU not only directly affects intention to use but also contributes to actual usage through intention to use. Similarly, Siswoyo & Irianto (2023) revealed that PU plays a vital role in influencing users' behavioral intentions. Aditya & Wardhana (2016) confirmed that PU is significant in encouraging users to continue using the LINE application. Sulistyani (2020) also emphasized that PU directly influences behavioral intention. Pertiwi & Sharif (2019) identified that PU affects both user attitudes and behavioral intentions.

H3: E-Trust has a significant influence on Behavioral Intention to Use in the implementation of E-Voting in the Simultaneous Village Head Elections in Sleman Regency

"E-Trust has a highly significant influence on Behavioral Intention to Use (BIU), with a path coefficient of 0.598, a T-statistic of 9.584 (> 1.96), and a p-value of 0.000 (< 0.05). This indicates that public trust in the E-Voting system is a dominant factor in shaping the intention to use it. Therefore, hypothesis H_3 is accepted."

"The analysis results demonstrate that E-Trust has a strong and significant impact on Behavioral Intention to Use (BIU), with a path coefficient of 0.598, a T-statistic of 9.584 (> 1.96), and a p-value of 0.000 (< 0.05). This finding suggests that trust in the E-Voting system is a key determinant in fostering the intention to adopt the system. Theoretically, this result aligns with Komiak and Benbasat (2006), who argue that trust in technology is a critical prerequisite for technology adoption, particularly in systems involving risk and uncertainty, such as E-Voting."

E-Trust has been proven to be a significant factor in enhancing Behavioral Intention to Use (BIU). Okediran et al. (2020) found that perceived trust significantly affects the intention to use mobile voting. Mannonov and Myeong (2024) showed that trust in technology positively influences the intention to use blockchain-based E-Voting systems. Furthermore, Hooda et al. (2022) identified that trust plays a vital role in increasing user intentions towards e-government systems. Tung et al. (2008) also revealed that trust positively impacts behavioral intentions in the use of electronic logistics information systems. Similar results were reported by Juhri and Dewi (2017), who demonstrated that trust significantly influences Behavioral Intention to Use. Belanche et al. (2012) emphasized that trust can act as a mediator within the Technology Acceptance Model (TAM) framework. Additionally, Benamati et al. (2010) highlighted that the integration of trust in TAM is essential to understand users' intention to use a system.

H4: Perceived Ease of Use has a significant influence on Actual System Use in the implementation of E-Voting in the Simultaneous Village Head Elections in Sleman Regency

"The analysis results indicate that Perceived Ease of Use (PEOU) does not have a significant influence on Actual System Use (ASU), with a path coefficient of 0.049, a T-statistic of 0.651 (< 1.96), and a p-value of 0.515 (> 0.05). This finding suggests that the ease of use of the E-Voting system does not directly affect the actual use of the system. Therefore, hypothesis H_4 is rejected."

"The findings of this study reveal that Perceived Ease of Use (PEOU) does not significantly impact Actual System Use (ASU) in the implementation of E-Voting in the Simultaneous Village Head Elections in Sleman Regency. Based on the analysis, the path coefficient of 0.049, a T-statistic of 0.651 (below the significance threshold of 1.96), and a p-value of 0.515 (greater than 0.05) indicate that hypothesis H_4 is rejected."

The relationship between Perceived Ease of Use (PEOU) and Actual System Use (ASU) has been extensively examined in various studies. Rahmawati and Narsa (2019) found that although PEOU does not directly affect actual usage, it has an indirect effect through intention to use. This result is corroborated by Sulistyani (2020), who showed that PEOU influences behavioral intention more significantly than actual usage directly.

According to the Technology Acceptance Model (TAM) developed by Davis (1989), PEOU is expected to enhance the level of technology adoption. However, in the context of this study, the insignificant result indicates that other factors might have a more dominant influence on the actual use of E-Voting. This aligns with prior research, which suggests that in environments with varying levels of technological literacy, ease of use alone is insufficient to

drive the adoption of new technologies. In the case of village head elections in Sleman Regency, other factors such as trust in the system, resistance to change, and technological infrastructure may play a more critical role in determining whether the public will actually use the E-Voting system.

H5: Perceived Usefulness has a significant effect on Actual System Use in the implementation of E-Voting in the Simultaneous Village Head Election in Sleman Regency

"The results indicate that Perceived Usefulness (PU) does not have a significant effect on Actual System Use (ASU), as evidenced by a path coefficient value of -0.088, a T-statistic of 0.948 (< 1.96), and a p-value of 0.343 (> 0.05). This finding demonstrates that the perceived benefits of the E-Voting system do not directly influence the actual use of the system. Therefore, hypothesis H_5 is rejected."

"This study shows that Perceived Usefulness (PU) does not significantly affect Actual System Use (ASU) in the implementation of E-Voting for the Simultaneous Village Head Election in Sleman Regency. With a path coefficient of -0.088, a T-statistic of 0.948 (below the significance threshold of 1.96), and a p-value of 0.343 (greater than 0.05), it can be concluded that hypothesis H_5 is rejected. In other words, although the E-Voting system offers benefits in terms of efficiency and effectiveness compared to conventional voting methods, these advantages do not directly encourage voters to use the system in practice."

Perceived Usefulness (PU) appears to influence Actual System Use (ASU) more indirectly. Rahmawati & Narsa (2019) found that PU does not have a direct effect on actual usage but contributes through intention to use. Similarly, Sulistyani (2020) demonstrated that PU influences behavioral intention more significantly than actual usage directly.

According to the Technology Acceptance Model (TAM) developed by Davis (1989), PU is expected to enhance technology adoption, based on the assumption that the greater the perceived benefits of a system, the higher the likelihood that users will adopt it. However, the findings of this study indicate that perceived usefulness alone is insufficient to increase the actual use of the E-Voting system.

H6: E-Trust has a significant effect on Actual System Use in the implementation of E-Voting in the Simultaneous Village Head Election in Sleman Regency

"E-Trust significantly affects Actual System Use (ASU), with a path coefficient of 0.313, a T-statistic of 3.748 (> 1.96), and a p-value of 0.000 (< 0.05). This finding indicates that public trust in the E-Voting system substantially increases the actual usage of the system. Therefore, hypothesis H_6 accepted."

"The results demonstrate that E-Trust has a significant impact on Actual System Use (ASU) in the implementation of E-Voting in the Simultaneous Village Head Election in Sleman Regency. With a path coefficient of 0.313, a T-statistic of 3.748 (above the threshold of 1.96), and a p-value of 0.000 (less than 0.05), it can be concluded that hypothesis H_6 is accepted. This finding suggests that the higher the public trust in the E-Voting system, the greater the likelihood that the system will be actively used during the village head elections."

E-Trust has been found to have a significant effect on Actual System Use (ASU) in various studies. Hooda et al. (2022) revealed that trust directly influences the use of e-government systems. Tung et al. (2008) demonstrated that trust affects not only behavioral intention but also actual system usage. Furthermore, Belanche et al. (2012) found that trust can mediate the relationship between TAM factors and actual usage. Wu et al. (2011) also identified that trust significantly contributes to Actual System Use across different contexts.

In the Technology Acceptance Model (TAM) developed by Davis (1989), trust is often considered an external factor that influences perceived ease of use and perceived usefulness. However, in the context of E-Voting, trust in the system becomes a more crucial determinant of whether people are willing to adopt the technology.

H7: Behavioral Intention to Use has a significant effect on Actual System Use in the implementation of E-Voting in the Simultaneous Village Head Election in Sleman Regency

"Behavioral Intention to Use (BIU) has a strong and significant effect on Actual System Use (ASU), with a path coefficient of 0.649, a T-statistic of 10.507 (> 1.96), and a p-value of 0.000 (< 0.05). This indicates that behavioral intention is the primary predictor of actual system use in the E-Voting system. Therefore, hypothesis H_7 is accepted. This finding implies that the greater an individual's intention to use E-Voting, the more likely they are to actually use it during the election process."

Behavioral Intention to Use (BIU) is the primary predictor of Actual System Use (ASU). Rahmawati & Narsa (2019) found that intention to use mediates the relationship between PU/PEOU and actual usage. Siswoyo & Irianto (2023) also showed that behavioral intention directly influences actual system usage. Sulistyani (2020) emphasized that behavioral intention plays a crucial role in bridging the relationship between PEOU/PU and actual usage. Pertiwi & Sharif (2019) supported this finding by demonstrating that intention to use is influenced by user attitudes and affects actual usage.

Table 3. Indirect Effect

Impact	***Original Sample***	**T *Statistics***	**P *Values***
PEOU -> BIU -> ASU	0,112	2,637	0,008
PU -> BIU -> ASU	0,116	2,276	0,023
ETrust -> BIU -> ASU	0,389	7,055	0,000

Source: SmartPLS Data Processing

H8: Perceived Ease of Use has a significant effect on Actual System Use through Behavioral Intention to Use in the implementation of E-Voting in the Simultaneous Village Head Elections in Sleman Regency

"The analysis results indicate that Perceived Ease of Use (PEOU) has an indirect effect on Actual System Use (ASU) through Behavioral Intention to Use (BIU), with a path coefficient of 0.112, a T-statistic of 2.637 (> 1.96), and a p-value of 0.008 (< 0.05). This finding suggests that the ease of use of the E-Voting system enhances actual system use by increasing users' behavioral intention. Therefore, hypothesis H8 is accepted."

"The study shows that Perceived Ease of Use (PEOU) does not directly influence Actual System Use (ASU), but it has a significant effect through the mediating variable Behavioral Intention to Use (BIU). With a path coefficient of 0.112, a T-statistic of 2.637 exceeding the threshold of 1.96, and a p-value of 0.008 below 0.05, hypothesis H8 is accepted. These results indicate that the easier a system is to use, the stronger an individual's intention to use it, which eventually encourages actual usage of the system during the Simultaneous Village Head Elections in Sleman Regency."

In the relationship between PEOU and Actual System Use (ASU), Behavioral Intention to Use (BIU) serves as a mediating variable that bridges the indirect influence of PEOU on ASU. Previous studies by Rahmawati & Narsa (2019) and Sulistyani (2020) found that PEOU does not directly increase actual system use but operates through users' behavioral intention to

adopt the system first. Users who perceive the system as easy to use are more likely to have a stronger intention to use it, which ultimately drives actual system adoption.

These findings are consistent with the Technology Acceptance Model (TAM) developed by Davis (1989), which posits that Perceived Ease of Use (PEOU) does not directly enhance technology usage but plays a more crucial role in increasing individuals' intention to adopt the technology. According to the model, individuals who perceive a system as easy to use are more likely to intend to use it, and this intention subsequently becomes the primary predictor of actual system use.

H9: Perceived Usefulness has a significant effect on Actual System Use through Behavioral Intention to Use in the implementation of E-Voting in the Simultaneous Village Head Elections in Sleman Regency.

"Perceived Usefulness (PU) was found to have an indirect effect on Actual System Use (ASU) through Behavioral Intention to Use (BIU), with a path coefficient of 0.116, a T-statistic of 2.276 (> 1.96), and a p-value of 0.023 (< 0.05). These findings indicate that the perceived benefits of the E-Voting system enhance actual system use by increasing users' intention to use it. Consequently, hypothesis H9 is accepted."

"The study demonstrates that Perceived Usefulness (PU) does not directly affect Actual System Use (ASU) but has a significant influence through the mediating variable Behavioral Intention to Use (BIU). With a path coefficient of 0.116, a T-statistic of 2.276 surpassing the threshold of 1.96, and a p-value of 0.023 below 0.05, hypothesis H9 is accepted. These results suggest that the greater the perceived benefits of the E-Voting system, the stronger an individual's intention to use it, ultimately leading to actual system adoption during the Simultaneous Village Head Elections in Sleman Regency."

Perceived Usefulness (PU) reflects the extent to which users believe that utilizing a system will enhance their performance. In TAM, PU is a key determinant influencing technology acceptance, where users are more likely to adopt a system if they believe it provides significant benefits. Previous studies, such as those conducted by Rahmawati & Narsa (2019) and Sulistyani (2020), demonstrated that PU has an indirect effect on ASU through BIU.

These findings are in line with the Technology Acceptance Model (TAM) developed by Davis (1989), which states that Perceived Usefulness (PU) is a major factor in shaping an individual's intention to use technology. According to the model, individuals are more likely to accept and use a technology if they believe it will enhance their performance or effectiveness. In the context of E-Voting, when voters perceive that the system offers more benefits than conventional methods such as saving time and reducing the risk of fraud they are more inclined to intend to use it, which ultimately leads to actual system usage.

H10: E-Trust has a significant effect on Actual System Use through Behavioral Intention to Use in the implementation of E-Voting in the Simultaneous Village Head Elections in Sleman Regency.

"E-Trust was found to have a highly significant indirect effect on Actual System Use (ASU) through Behavioral Intention to Use (BIU), with a path coefficient of 0.389, a T-statistic of 7.055 (> 1.96), and a p-value of 0.000 (< 0.05). This indicates that public trust in the E-Voting system significantly enhances actual system use by increasing users' behavioral intention. Thus, hypothesis H10 is accepted."

"The results indicate that E-Trust has a highly significant indirect effect on Actual System Use (ASU) through Behavioral Intention to Use (BIU). With a path coefficient of 0.389, a T-statistic of 7.055 far exceeding the threshold of 1.96, and a p-value of 0.000 below 0.05, hypothesis H10 is accepted. These findings suggest that the higher the level of public trust in

the E-Voting system, the greater their intention to use it, ultimately leading to actual system adoption during the Simultaneous Village Head Elections in Sleman Regency."

E-Trust plays a crucial role in the adoption of digital systems, particularly in the context of technology-based services that require users' confidence in the system's security, privacy, and reliability. This trust reflects the extent to which users believe that the system will function as intended without causing harm. Previous studies, such as those conducted by Hooda et al. (2022), Belanche et al. (2012), and Wu et al. (2011), found that E-Trust influences ASU indirectly through BIU. High trust in the system makes users more confident in using it, which increases their behavioral intention to adopt the technology. BIU acts as a bridge linking trust with the final decision to actually use the system in daily activities. Trust plays a vital role in enhancing technology acceptance, especially in contexts involving electronic transactions or internet-based systems.

CONCLUSION

"The findings indicate that both Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) exert a statistically significant impact on Behavioral Intention to Use (BIU), as reflected by path coefficients of 0.173 and 0.179, respectively. These results suggest that individuals' intentions to engage with the E-Voting system are positively shaped by their perceptions of system simplicity and its anticipated advantages. Nonetheless, neither PEOU nor PU demonstrates a direct influence on Actual System Use (ASU), implying that favorable perceptions alone do not necessarily translate into actual utilization of the system."

In contrast, E-Trust emerges as the dominant factor, with a highly significant impact on both BIU (0.598) and ASU (0.313), emphasizing that trust in the system is a crucial determinant in shaping both the intention and actual usage of E-Voting. This finding is further supported by the strong influence of BIU on ASU (0.649), indicating that behavioral intention is the primary driver of actual system usage. Moreover, there are significant indirect effects from PEOU (0.112), PU (0.116), and E-Trust (0.389) on ASU through BIU, reinforcing the role of behavioral intention as a mediator linking initial perceptions to actual behavior. Overall, these findings suggest that strategies to enhance E-Voting adoption should prioritize building public trust in the system, followed by optimizing its ease of use and perceived benefits. Together, these factors will strengthen the intention to use and, ultimately, increase actual system usage.

REFERENCES

Aditya, R., & Wardhana, A. (2016). Pengaruh Perceived Usefulness dan Perceived Ease of Use terhadap behavioral intention dengan pendekatan Technology Acceptance Model (TAM) pada pengguna Instant Messaging LINE di Indonesia. Jurnal Siasat Bisnis, 20(1), 24-32.

Adriansyah, N., Syaifulah, S., & Jazman, M. (2016). Analisa Penerimaan dan Penggunaan Teknologi Informasi E-Vote Menggunakan Technology Acceptance Model (TAM). Jurnal Ilmiah Rekayasa dan Manajemen Sistem Informasi, 2(2), 78-84.

Alomari, M. K. (2014, December). Towards E-democracy in the Middle East: E-Voting Adoption. In The 9th International Conference for Internet Technology and Secured Transactions (ICITST-2014) (pp. 73-77). IEEE.

Badan Pusat Statistik. (2023). Jumlah desa menurut provinsi, 2023. Retrieved November 24, 2024, from https://www.bps.go.id/en/Statistics-table/2/ODUjMg==/jumlah-desa.html

Belanche, D., Casaló, L. V., & Flavián, C. (2012). Integrating trust and personal Values into the Actual System Use: The case of e-government services adoption. Cuadernos de

Economia y Direccion de La Empresa, 15(4), 192–204. https://doi.org/10.1016/j.cede.2012.04.004

Benamati, J. S., Fuller, M. A., Serva, M. A., & Baroudi, J. (2010). Clarifying the integration of trust and TAM in E-commerce environments: Implications for systems design and management. IEEE Transactions on Engineering Management, 57(3), 380–393. https://doi.org/10.1109/TEM.2009.2023111

Creswell, J. W. (2014). Research Design: Qualitative, Quantitative, and Mixed Methods Approaches (4th ed.). SAGE Publications.

Eid, M. I. (2011). Determinants of e-commerce customer satisfaction, trust, and loyalty in Saudi Arabia. Journal of Electronic Commerce Research, 12(1), 78–93

Hooda, A., Gupta, P., Jeyaraj, A., Giannakis, M., & Dwivedi, Y. K. (2022). The effects of trust on behavioral intention and use behavior within e-government contexts. International Journal of Information Management, 67, 102553.

Juhri, K., & Dewi, C. K. (2017). Kepercayaan Dan Penerimaan Layanan Mobile Money T-Cash Di Bandung Dengan Pendekatan Technology Acceptance Model (TAM). Jurnal Pro Bisnis, 10(1), 2442 - 4536.

Kusuma, F. K. (2024). Pengaturan Dan Tantangan Penggunaan E-Voting Pada Penyelenggaraan Pemilihan Kepala Daerah Di Indonesia. Media Bina Ilmiah, 18(6), 1311-1320.

Komisi Pemilihan Umum. (n.d.). Open Data KPU Republik Indonesia. Retrieved November 24, 2024, from https://opendata.kpu.go.id

Mannonov, K. M. U., & Myeong, S. (2024). Citizens' Perception of Blockchain-Based E-Voting Systems: Focusing on TAM. Sustainability, 16(11), 4387.

Mulyanto, A., Sumarsono, S., Niyartama, TF, & Syaka, AK (2020). Penerapan Technology Acceptance Model (TAM) dalam Pengujian Model Penerimaan Aplikasi MasjidLink. Semesta Teknika , 23 (1), 27-38.

Musriannur, M. H., Yasirandi, R., & Oktaria, D. (2021). Pengukuran dan Analisis Penerimaan LMS sebagai Media Belajar Online menggunakan Technology Acceptance Model di Universitas Telkom. e-Proceeding of Engineering, 8(5), 11505-11520.

Okediran, O. O., Oyediran, M. O., Sijuade, A. A., & Wahab, W. B. (2020). Modeling User Acceptance of Electronic Voting: An Extended Technology Acceptance Model (TAM) Approach.

Pertiwi, N., & Sharif, O. O. (2019). Minat Perilaku Penggunaan Youtube Sebagai Sumber Pembelajaran Dengan Pendekatan Tam. Jurnal Riset Bisnis Dan Manajemen, 12(1), 9-15.

Rahmawati, R. N., & Narsa, I. M. â€ œActual usage Penggunaan E-Learning Dengan Technology Acceptance Model (TAM), â€ J. Inov. Teknol. Pendidik, 6(2), 127â

Ramadhan, D., Budiatmo, A., & Prihatini, AE (2024). Pengaruh Perceived Effectiveness dan Perceived Ease of Use Terhadap Penggunaan Sistem Aktual (Studi pada Pengguna Aplikasi BNI Mobile di Kota Salatiga). Jurnal Ilmu Administrasi Bisnis , 13 (3), 620-628.

RRI. Streema. (n.d.). RRI Pro 1 Yogyakarta. Retrieved December 16, 2024, from https://streema.com/radios/RRIPro1Yogyakarta

Siswoyo, A., & Irianto, B. S. (2023). Analisis Technology Acceptance Model (TAM) Terhadap Pengguna Aplikasi Mobile Banking. Owner: Riset dan Jurnal Akuntansi, 7(2), 1196-1205.

Sulistyani, E. (2020). Pengaruh perceived ussefulness dan Perceived Ease of Use terhadap behavioral intention dan dampaknya terhadap actual usage (Bachelor's thesis, Fakultas Ekonomi dan Bisnis uin jakarta).

Tyas, E. I., & Darma, E. S. (2017). Pengaruh Perceived Usefulness, Perceived Ease of Use, Perceived Enjoyment, dan Actual usage Terhadap Penerimaan Teknologi Informasi: Studi Empiris Pada Karyawan Bagian Akuntansi dan Keuangan Baitul Maal Wa Tamwil Wilayah Daerah Istimewa Yogyakarta. Reviu Akuntansi Dan Bisnis Indonesia, 1(1), 25-35.

Widiyanesti, S., & Reynald, M. R. (2016). Analisis Minat Penggunaan Layanan E-Filing Oleh Wajib Pajak Melalui Pendekatan Technologi Acceptance Model (TAM) Di KPP Pratama Purwakarta. Jurnal Manajemen Indonesia, 16(1), 1-8.

Wu, K., Zhao, Y., Zhu, Q., Tan, X., & Zheng, H. (2011). A meta-analysis of the impact of trust on Actual System Use: Investigation of moderating influence of subject and context type. International Journal of Information Management, 31(6), 572–581. https://doi.org/10.1016/j.ijinfomgt.2011.03.004