

# The Potential of E-Voting in Strengthening Deliberative Democracy: A Case Study of Village Head Election in Bantaeng

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## Abstract

The implementation of e-voting in local elections, particularly in the Village Head Election (Pilkades) in Bantaeng Regency, has attracted attention as a strategy to increase transparency, efficiency, and participation in the electoral process. However, challenges related to technological infrastructure, digital divide, and human resources (HR) readiness remain significant issues. This research aims to examine the potential of e-voting in supporting deliberative democracy, focusing on analysing the implementation of e-voting in Pilkades Bantaeng. Using a qualitative case study approach, data was collected through in-depth interviews with informants involved in the implementation of e-voting and analysed thematically and narratively. The research findings show that e-voting improves efficiency and transparency, but challenges related to infrastructure inequality and digital literacy still hinder its widespread implementation. The significance of these findings lies in the importance of strengthening regulations, increasing human resource capacity, and equalising access to technology to realise a more inclusive deliberative democracy. The benefits of these findings can provide practical contributions to the development of technology-based electoral policies in Indonesia.

**Keywords:** Deliberative Democracy, E-Voting, Village Head Election

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## INTRODUCTION

Elections are one of the main instruments in democratic systems in many countries, including Indonesia (Ardiansyah, 2017; Hudhaibi, 2023; Syafei & Darajati, 2020). Although Indonesia has conducted various types of elections to elect people's representatives and regional heads, classic problems in the electoral system remain, such as low voter participation, lack of transparency in the electoral process, and its vulnerability to manipulation (Arifin, 2024; Barus et al., 2024). Along with the development of information and communication technology (ICT), there is great potential to improve the quality of elections through the implementation of e-voting systems (Gritzalis, 2002; Moynihan, 2004; Risnanto et al., 2020; Wibowo, 2023). In Bantaeng Regency, the implementation of e-voting in the Village Head Election (Pilkades) has been an important experiment to gauge the potential of this technology in improving local electoral processes, which can have a direct effect on deliberative democracy. However, despite the promise of e-voting, challenges related to digital infrastructure, technological literacy gaps, and inadequate legal regulations often become barriers to its implementation.

This phenomenon illustrates the importance of exploring the potential of e-voting in supporting deliberative democracy, which prioritises citizen participation in public discussions and decision-making. By adopting e-voting technology, it is expected to increase efficiency, transparency, and public participation in the electoral process. Bantaeng District provides an interesting example where e-voting has been implemented at the village level, albeit on a smaller scale than national elections. This experience provides important insights into the challenges that arise in the implementation of such technology, as well as how e-voting can contribute to strengthening local democracy. Therefore, this research aims to deeply analyse the potential of e-voting in supporting deliberative democracy through a case study of Pilkades in Bantaeng Regency, highlighting the opportunities and challenges.

A number of previous studies have examined the role of technology in elections, particularly in relation to e-voting. Research by Choi(2006) reveals that the implementation of e-voting in elections in South Korea, despite having a significant impact on voter participation, still faces obstacles related to the digital divide and limited understanding of e-voting procedures. This study emphasises the importance of the National Election

Commission's role in providing accurate and adequate information for voters to ensure the success of the e-voting system. In contrast, a study (Hapsara et al., 2017) shows that in developing countries, although e-voting is gaining acceptance, research often focuses on the technological aspects without considering the social and political factors that influence successful implementation. This research highlights the importance of viewing e-voting as a socio-technical system that must be adapted to the social and cultural context of the country where the technology is implemented.

Studies related to e-voting in Indonesia are also growing. Wibowo(2023) reveals the great potential that e-voting has in improving electoral efficiency, but challenges related to infrastructure and incomplete legal frameworks are still major obstacles. This research notes that Indonesia needs a more comprehensive digital transformation to support the effective implementation of e-voting. This is in line with studies conducted by (Ruhullah & Ushama, 2024) that propose the application of biometric technology to ensure transparency and security in elections, although the context is different. Overall, these studies show that the implementation of e-voting requires a holistic approach, combining social, technical and legal aspects to support a more inclusive and transparent democracy. Other studies by (Avgerou, 2013; Khan et al., 2023) identify mechanisms that explain trust in e-voting and design and develop electoral systems that are free from electoral errors and manipulations, from the registration stage to the entire voting cycle.

Although there have been various studies on e-voting, research gaps still remain, especially in the local context of Indonesia, where this technology is just beginning to be implemented at the village level. This research fills the gap by conducting an in-depth analysis of the implementation of e-voting in the Pilkades of Bantaeng district, a case study that has not been widely explored in the existing literature. It also highlights the social, political, and technical dynamics that influence the success of e-voting at the local level, and provides policy recommendations to strengthen the implementation of this technology on a larger scale in Indonesia.

The main objective of this research is to examine the potential of e-voting in strengthening deliberative democracy in Indonesia, focusing on the implementation in Bantaeng Regency. The research aims to analyse how e-voting can increase community participation in Pilkades, improve transparency, and minimise the potential for fraud in local elections. The argument put forward is that despite the considerable challenges faced, especially in terms of infrastructure and technological literacy, the implementation of e-voting supported by appropriate policies and technological readiness can strengthen the deliberative democratic system in Indonesia. This research is expected to provide a practical contribution to electoral system reform in Indonesia, as well as a reference for further research in developing countries with similar challenges.

## RESEARCH METHODS

This research uses qualitative research with a case study approach to explore in depth (Curry, 2017; Simons, 2014) the potential of e-voting implementation in supporting deliberative democracy in Indonesia. The case study approach was chosen because it allows researchers to conduct a more detailed exploration of e-voting implementation in the context of Pilkades Kabupaten Bantaeng, which provides richer insights into the social, political, and technical dynamics that influence the success or challenges in its implementation. This approach also allows for a context-specific view of the phenomenon, providing a more holistic understanding of how e-voting can influence local electoral processes and deliberative democracy.

The unit of analysis in this study is the implementation of e-voting in the Pilkades of Bantaeng Regency, focusing on various actors involved in the electoral process, including voters, election organisers, community leaders, bureaucrats, and other related parties. In addition, the unit of analysis also includes the policies underlying the implementation of e-voting, the technological infrastructure used, and the social interactions that occur during the election process. Thus, this research not only looks at the technical aspects of e-voting, but also pays attention to the social, political, and legal dimensions that support or hinder the implementation of the system.

The data collection technique in this research uses two main methods, namely participatory observation and in-depth interviews. Participatory observation was conducted to gain a direct understanding of the process of

implementing Pilkades using e-voting in the field, as well as to record the dynamics that occur between the various parties involved. This observation also allows researchers to see first-hand the challenges faced in the implementation of e-voting and the interaction between voters, organisers, and the technology used. In-depth interviews were conducted with political figures, researchers, election organisers, community leaders, bureaucrats, and civil society, to explore their perspectives on the implementation of e-voting, the challenges faced, and its impact on political participation and transparency in Pilkades.

Data were analysed using thematic and narrative analysis techniques. Thematic analysis is used to identify key patterns in the data related to the implementation of e-voting, including factors that influence its success and challenges faced (Braun et al., 2019; Guest et al., 2011; Terry et al., 2017). Each emerging theme will be analysed in depth to explore the meaning and implications of the findings. In addition, narrative analysis is used to understand the stories and experiences told by the various actors involved (Cortazzi, 1994; Pavlenko, 2008), as well as how these stories relate to the research objective of strengthening deliberative democracy through e-voting technology. This process of analysis allows the researcher to provide a more in-depth interpretation of the phenomenon under study and to construct a narrative that can clearly illustrate how e-voting can influence local democracy in Indonesia.

## RESULTS AND DISCUSSION

### Results

#### Potential of E-Voting Adoption for Village Head Election in Bantaeng

Based on the interviews with various informants who are directly involved in the implementation of e-voting in Bantaeng Regency, there are some important findings that illustrate the potential and challenges of this technology in strengthening deliberative democracy. E-voting is considered to increase transparency, efficiency, and reduce tension in the electoral process, especially in Pilkades at the local level. However, infrastructure-related challenges, such as difficulties in accessing electricity and machine breakdowns, as well as the limitations of poorly trained human resources, remain major obstacles. On the other hand, while e-voting has the potential to support fairer and more transparent elections, the digital divide between developed and underdeveloped regions and the need for clearer regulations to govern the system are issues that need to be addressed. These findings show that while technology can improve the electoral process, its successful implementation is highly dependent on the readiness of existing infrastructure, regulations and human resource capacity.

**Table 1. Tabulation of Interview Data with Key Informants**

Informant	Statements	Thematic Coding
Prof Dr Nurdin Abdullah (Regent of Bantaeng Regency 2008-2018)	"People in Bantaeng enjoy e-voting more because there is no tension and everything is transparent. There are no invalid votes, cancelled votes, and so on. The initial idea was from BPPT, then collaboration with Unhas and Bantaeng local government. We must simplify our election system, starting with all village head elections in Bantaeng. Indeed, there are electricity barriers, especially in remote areas, where the electricity often fails. In addition, the server also dies, so this problem. For human resources, it is not difficult, we conduct training in each village."	Transparency and Efficiency of E-Voting: Increased transparency and reduced tension in elections. Infrastructure Challenges: Electricity and server issues. Human resource readiness: Training in each village.

Arief Budiman (Chairman of KPU RI 2017-2022)	"There are actually many electronic methods. Starting from e-voting (electronic voting), e-counting, and e-recapitulation. What was used in my era was e-recapitulation, e-voting has not been used yet, and e-counting has not been used yet. But some European countries use e-voting. Direct touchscreen. I've seen it myself, the machine was broken at that polling station. So they had to go back 2 hours to fix the machine, because they only provided 1 machine. So what will happen with e-voting, what will happen with e-counting, what will happen with e-recapitulation if we want to juxtapose the pilkades with the national election? That's why I said earlier that e-voting must be anticipated. What if the machine breaks down, what if there is no electricity in the area, and so on..."	Technological Challenges: Machine breakdowns and technical difficulties at polling stations. Dependence on Infrastructure: Limited electricity and machines. System Readiness: The need for a perfect system to avoid failure.
Dra. Andrari Grahitandaru, M.Sc (BRIN Principal Expert Engineer)	"One of the issues in the 2024 election is sirekap, where there are allegations of vote manipulation and server problems. If the problem is sirekap, the weakness is in the human resources of sirekap operators who do not follow procedures. Technologically, sirekap is cool and not wrong. Imagine that the human resources have just learnt sirekap, suddenly they have become a committee. Technology is very helpful, including in elections. But keep in mind that e-voting technology uses and maximises humans, not robots..."	Limited human resources: Operator problems and procedures that are not followed. The Role of Technology: The use of technology to support fair and transparent elections. HR Challenges and Election Mentality: The importance of human readiness in using technology.
Rahmat Bagja (Chairman of Bawaslu 2017-2022)	"The existence of IT in elections is very necessary to help the duties and work of election organisers, especially transparency and speed in the process. Delays in KPU recapitulation in tiered elections often occur, where there are differences in the election sirekap related to the tabulation display. The issue is the effectiveness of organising elections or local elections, where evoting does not require too much cost. The implementation of evoting must be considered, firstly, to what extent has there been a solution to the digital divide between western and eastern Indonesia..."	Successes and Challenges of E-Voting: Transparency, speed, and cost reduction. Digital Divide: Infrastructure challenges between western and eastern Indonesia. The Need for E-Voting Regulation: The need for clearer regulations.
Dr Bahtiar (Director General of Politics	"So indeed, to improve the quality of elections, there are many factors or aspects	Election Quality Factors: Technology, human resources,

and Administration, Ministry of Home Affairs)	Public	or dimensions that affect the quality of elections. So it is true, the initial assumption of the Vendus promo is that technology is one of the factors that is thought to affect the quality of elections. In addition to the human resource factor, the regulatory factor, especially the community itself. The political parties, then the culture, then the organisers themselves, then the level of public education..."	regulation, culture, and political parties. The Effect of Technology on Election Quality: Technology is an important factor in improving the quality of elections.
Muhammad Nur (Bantaeng Community Leader)	Rivai	"Regarding the implementation of e-voting village head elections in Bantaeng district, one of the main initiators was Prof. Nurdin Abdullah, Bantaeng Bupate for two periods, and Alhamdulillah now we in Bantaeng District are again led by his son, Hj. Nurdin. So in Prof Nurdin Abdullah's time, there were indeed many innovations that he did. One of them is the implementation of e-voting village head elections in Bantaeng district..."	Local Election Innovation: The e-voting initiative in Pilkades in Bantaeng. The Role of Local Leaders: Prof Nurdin Abdullah's role in initiating this innovation.

#### Tabulation of Interview Data by the Author, 2024

The data in Table 1. reveals various findings related to the implementation of e-voting in supporting deliberative democracy in Bantaeng Regency, particularly in the context of the Village Head Election (Pilkades). Based on interviews with a number of informants, several important aspects that can influence the success and challenges in the implementation of e-voting systems were identified. Firstly, e-voting is considered to bring transparency and efficiency to the electoral process. Informant 1 (Regent of Bantaeng Regency 2008-2018) stated that people in Bantaeng enjoy voting using e-voting because there are no invalid votes or void votes, and the process is more transparent. This shows that e-voting can reduce the tensions that usually arise in traditional elections. In addition, informant 4 (Chairperson of Bawaslu 2017-2022) added that the use of technology in elections can speed up the process and reduce costs, which certainly provides significant advantages in the conduct of elections at the local level. However, challenges related to infrastructure have also surfaced, such as electricity and server issues that can disrupt the smoothness of the e-voting process, especially in remote areas. This was expressed by informant 1 who mentioned frequent power outages and server downtime as the main obstacles in implementing e-voting in Bantaeng.

Second, the readiness of human resources (HR) is a key factor that can affect the success of e-voting implementation. Some informants, such as informant 3 (Principal Expert Engineer of BRIN) and informant 5 (Director General of Politics and Public Administration of the Ministry of Home Affairs), revealed that although technology has great potential to improve transparency and efficiency of elections, the biggest challenge lies in the unpreparedness of the human resources who must utilise the technology properly. Informant 3 emphasised that when operators do not follow procedures properly or do not learn the technology thoroughly, then even if the technology itself is very sophisticated, its implementation can fail. This confirms the importance of adequate training for both operators and election administrators in order to make the use of technology procedurally correct and effective.

Furthermore, while many agree that e-voting can improve the quality of elections, several other challenges related to regulation and the digital divide were also identified. Informant 4 (Chairperson of Bawaslu 2017-2022) mentioned that regulations related to e-voting are still minimal and there is no law that specifically

regulates this system, although e-recapitulation (sirekap) has been implemented in several regions. This shows that e-voting needs a clearer legal framework to be implemented nationally. In addition, the existing digital divide between the western and eastern parts of Indonesia is also a serious concern, as expressed by informant 4 and informant 5, who cautioned that technological infrastructure in some regions is still very limited, making it difficult to implement e-voting evenly across Indonesia.

The implementation of e-voting also introduces the concept of local innovation, with Bantaeng District being a pioneer in implementing e-voting in Pilkades. Informant 6 (Bantaeng Community Leader) explained that e-voting is part of the innovations introduced by Prof. Nurdin Abdullah, former Bantaeng Regent, and supported by various stakeholders such as BPPT and Unhas. Despite the challenges faced, such as infrastructure and regulatory issues, the implementation of e-voting in Bantaeng provides an illustration of how local innovation can accelerate the acceptance of technology in elections, especially at the village level. The findings of this research show that the implementation of e-voting in Bantaeng Regency has great potential to strengthen deliberative democracy, especially in improving transparency and efficiency of elections. However, its implementation is not free from significant challenges, both in terms of infrastructure, human resource readiness, and inadequate regulations. Therefore, to realise the successful implementation of e-voting in Indonesia, it is necessary to increase the capacity of human resources, develop more equitable technological infrastructure, and update regulations that support the use of e-voting in elections.

### Increasing Public Participation in E-Voting Implementation

Based on interviews with a number of key informants who are directly involved in the electoral process and e-voting technology, the findings provide deep insights into the challenges and opportunities faced in the implementation of e-voting, as well as how it can strengthen deliberative democracy at the local level. The findings also reflect the dynamics that exist at the policy and social levels that influence the success or failure of electoral technology in Indonesia.

**Table 1. Tabulation of Interview Data with Key Informants**

Informant	Statements	Thematic Coding
Ahmad Dolli Kurnia (Chairman of Commission II DPR RI)	"The utilisation of technology in elections is a good thing, where elections including Pilkades should be made easy so that people are able to exercise their right to elect their representatives properly without any coercion and fear. This convenience makes elections must be made simple by applying the utilisation of communication and information technology. Regulations regarding elections in Indonesia are actually late in regulating technological developments in elections such as Law number 17 of 2017, especially in the stages of elections."	The Importance of Election Technology Regulation: The expansion of technology in elections, and the delay in regulations governing technology in elections in Indonesia.
Muhammad Rivai Nur (Bantaeng Community Leader)	"The implementation of pilkades using E-voting in Bantaeng is a good innovation in local elections. During my five years as head of the legal department, when the implementation of village government, especially e-voting, we came up with regulations through the making of regional regulations on villages in support of E-voting which was implemented in 46 villages and 8 sub-districts, spread across land, sea and	Innovation and Local Regulation: E-voting as an innovation in local elections and the role of local regulations in supporting it.

	mountain areas. At that time, an important element that supported this decision was the Constitutional Court decision No. 147 petitioned by the Regent of Gianyar Bali."	
Iffa Rosita (Member of KPU RI 2022-2027)	"We encourage, yes. What was done in Bantaeng, we also encourage regions that can independently maximise the use of technology. So if for example it cannot be applied to Indonesia, sometimes there are regions that are creative, innovative. Now that can be, if for example there are regions or a province for example, they can develop it, we really appreciate and we encourage it. Yes, we encourage it. So maybe it can start from one province, two provinces, or maybe later it will develop into, then over time it can become nationwide, it can be a reference."	Encouragement of Regional Innovation: Supporting regions to innovate and develop election technology independently.
Dra. Andrari Grahitandaru, M.Sc (BRIN Principal Expert Engineer)	"Looking at E-voting in Indonesia, we must talk in terms of opportunities to expand political reach, rationalise the electoral process, e-voting transparency and accountability and finally how challenges such as digital literacy inequality, infrastructure inequality, and potential cyber manipulation must be resolved by all parties concerned in the election."	Opportunities and Challenges of E-Voting: Opportunities to expand political reach, but there are challenges of digital literacy, infrastructure inequality, and potential cyber manipulation that must be addressed.
Dr Bahtiar (Director General of Politics and Public Administration, Ministry of Home Affairs)	"So indeed, to improve the quality of elections, there are many factors or aspects or dimensions that affect the quality of elections. So it is true, the initial assumption of the vendus promo is that technology is one of the factors that is thought to affect the quality of elections. In addition to the human resource factor, the regulatory factor, the factor, moreover, is the community itself. Political parties, then culture, then the organiser itself, then the level of public education. There are indeed many factors that affect the quality of elections. Indeed, one of them is technology. Now, is the development of election technology able to improve the quality of elections. So, election technology is actually very broad. Starting from the most basic is election data. Yes, until today, the election data is first who is entitled to participate in the election. Well, the reference is based on occupation data."	Factors Affecting Election Quality: Technology as a factor affecting the quality of elections, in addition to human resources, regulations, and other social factors.

Tabulation of Interview Data by the Author, 2024

Based on the results of Table 2 interviews with various informants, this research identifies several key findings related to the implementation of e-voting in the Village Head Election (Pilkades) in Bantaeng Regency and its impact on the quality of elections in Indonesia. First, the utilisation of technology in elections-including Pilkades-can increase the ease and transparency of the election process, as expressed by Informant 1 (Ahmad Dolli Kurnia). According to him, technology should make elections simpler and allow people to vote without pressure. This is in line with the view that elections involving technology can create a more efficient and inclusive process. However, the main challenge lies in the delay in regulations governing the use of technology in elections. As highlighted by informant 1, regulations related to e-voting in Indonesia are still lagging behind, especially in relation to the Election Law, which does not adequately regulate technology-based election stages.

Furthermore, the implementation of local innovation in Pilkades using e-voting in Bantaeng, described by Informant 2 (Muhammad Rivai Nur), shows that the decision to use e-voting is not only driven by technological needs, but also by local regulations that support this implementation. In Bantaeng, the implementation of e-voting in 46 villages and 8 sub-districts shows that technological innovation can be widely applied despite different geographical and social challenges. Local regulations that support these initiatives have proven important in facilitating technology adoption at the local level. Informant 3 (Iffa Rosita) emphasised the importance of encouraging other regions to develop and utilise technology independently. She pointed out that although not all regions can immediately implement e-voting, local innovation should be encouraged, and success at the local level could be a model for other regions or even for national implementation. This indicates that even if e-voting starts in a specific region, with the right encouragement, it could evolve into a wider policy in Indonesia.

However, the major challenges faced by e-voting technology are uneven digital literacy, as well as inadequate infrastructure, as expressed by Informant 4 (Dra. Andrari Grahitandaru). Inequality in digital infrastructure, especially between the western and eastern regions of Indonesia, is an issue that needs to be addressed. In addition, there is also the risk of cyber manipulation that can undermine the integrity of elections. Therefore, it is crucial to ensure collaboration between relevant parties to address these issues. Finally, according to Informant 5 (Dr Bahtiar), the quality of elections is greatly influenced by many factors, including technology, human resources, regulation, political culture and public education. While technology can play an important role in improving the quality of elections, other factors such as the readiness of human resources, adequate regulations, and the level of public education also affect the success of technology in elections. These findings suggest that the implementation of e-voting has great potential to improve the quality of elections in Indonesia, but requires more attention to the aspects of regulation, infrastructure, and digital literacy to ensure the success of this system throughout the country.

## DISCUSSION

The results of this study show that the implementation of e-voting in the Village Head Election (Pilkades) in Bantaeng Regency has a significant impact in improving the transparency and efficiency of the local election process. Informants involved in this study highlighted that e-voting successfully reduced technical issues such as invalid votes and a faster vote counting process. In addition, the use of this technology also brings convenience to the public in channelling their voting rights, as expressed by several informants. However, although e-voting shows positive potential, the main challenges faced are related to technological infrastructure and digital literacy that are still unevenly distributed throughout the region, especially in remote areas. In addition, the incomplete regulations related to e-voting are also an obstacle, which requires serious attention from the legislature and election organisers to develop more comprehensive regulations.

Another finding that emerged was the importance of human resources (HR) readiness in supporting e-voting implementation. Although the technology already exists, challenges related to inadequate understanding and training of e-voting operators are one of the obstacles in its implementation. This shows that even sophisticated technology will not work well without human readiness, both in terms of training and



understanding of proper procedures. Thus, more intensive training and strengthening the capacity of human resources are aspects that should not be ignored in any implementation of technological systems in elections. In addition, the importance of clear regulations and a secure system are also important notes so that the implementation of e-voting can run smoothly and can be accounted for.

The findings of this study with the Technology Acceptance Theory (TAM), it can be seen that perceived usefulness and perceived ease of use affect the extent to which e-voting is accepted by the public and election organisers. Based on informants' views, e-voting is seen as a useful technology to increase transparency and efficiency in elections. This perception is very important, as the higher one's perception of the usefulness of e-voting, the greater their intention to adopt it. However, the main challenge faced is the perceived ease of use that is still perceived to be lacking by some people, especially in areas that have limited digital infrastructure and technological literacy. Therefore, to increase the acceptance of e-voting, there needs to be an effort to improve the ease of access and public understanding of this technology, as well as ensuring adequate infrastructure to support its implementation.

On the other hand, these findings can also be linked to the Deliberative Democracy Theory, which emphasises the importance of public deliberation and debate in political decision-making. The implementation of e-voting in Pilkades in Bantaeng has the potential to strengthen deliberative democracy by increasing public participation in the electoral process. With e-voting, the election process becomes more inclusive, transparent, and accountable, which in turn can strengthen public trust in the election results. However, the challenge remains to ensure that e-voting does not only serve as a technical tool, but also supports the rational participation of the public in the decision-making process. In this regard, e-voting should be integrated with systems that allow for open discussion and constructive debate, so that the public can be more actively involved in the deliberative processes underlying elections. Therefore, successful implementation of e-voting depends not only on the technology itself, but also on efforts to strengthen inclusive and participatory democratic processes.

The findings of this study have significant similarities with the findings of various relevant studies related to the implementation of e-voting in the context of deliberative democracy. For example, Choi's research (Choi, 2006) on e-voting in South Korea emphasises the importance of electoral participation and strengthening deliberative democracy through information and communication technology (ICT). In this study, Choi revealed that e-voting is able to expand public participation and increase transparency in the electoral process, although its implementation in South Korea is still limited and fragmented. This finding is in line with the research results in Bantaeng, where the transparency and convenience brought by e-voting is recognised by the community as an important advancement in local democracy. However, in both South Korea and Bantaeng, challenges related to the digital divide and uneven infrastructure in remote areas are major obstacles in maximising the potential of e-voting. This reminds us that while e-voting can strengthen deliberative democracy, the limited accessibility of the technology will affect the extent to which it can be accepted by all levels of society.

Research (Hapsara et al., 2017) also highlights similar challenges in developing countries, as found in Bantaeng. Hapsara suggests that e-voting should be viewed not only as a technological tool, but also as a socio-technical agent that needs to consider the social and organisational aspects behind its implementation. This is reflected in the research findings that reveal that although e-voting brings benefits, its implementation in Bantaeng also requires careful preparation of human resources and clear regulations to ensure its success. As Hapsara explains, it is important for developing countries to view e-voting as part of broader social reforms, not just technology adoption. In Bantaeng, despite the efforts of the local government to support the implementation of e-voting through local regulations, the inequality of digital infrastructure remains a major challenge that must be overcome for the benefits of e-voting to be felt by the entire community.

The link between the findings of this study and the Theory of Technology Acceptance (TAM) is also clear. Perceived usefulness and perceived ease of use of e-voting greatly influence the adoption of technology by users. As found in this study, people in Bantaeng perceive e-voting as a useful technology that simplifies the

election process, which suggests that this technology has the potential to be widely accepted if the perception is positive. However, challenges related to ease of use and accessibility still need to be addressed, especially in areas where access to technology is difficult and digital literacy is low. According to TAM, improvements in perceived ease of use can be achieved through adequate training and support, as well as more equitable development of technology infrastructure across regions.

The implications of the findings of this study suggest that while the implementation of e-voting has great potential to improve transparency, efficiency and participation in elections, its implementation requires more attention to several key factors. Firstly, it is important to ensure the availability of adequate technological infrastructure, especially in remote areas, so that this technology can be accessed equally by all levels of society. Second, there needs to be intensive training to improve digital literacy and human resource readiness in using the e-voting system, so as to reduce the potential for operational errors. In addition, the strengthening of clear and in-depth regulations related to e-voting is also needed to provide a legal framework that supports the implementation of this technology safely and effectively. Lastly, to realise deliberative democracy, e-voting must be integrated with a system that ensures inclusive participation of the entire community, not only in technical terms, but also in social and policy aspects.

## CONCLUSION

This research examined the implementation of e-voting in the Pilkades of Bantaeng Regency as an effort to strengthen deliberative democracy through technology. The findings show that although e-voting improves transparency, efficiency, and participation, its implementation still faces challenges related to technological infrastructure, digital literacy, and inadequate regulations. The significance of these findings lies in the importance of efforts to address the digital divide, improve human resource training, and formulate clearer regulations regarding the implementation of e-voting in elections. Although this research provides valuable insights for the development of e-voting systems in Indonesia, the weakness of this study is the limited scope of the research which only focuses on one region, so the findings obtained cannot be widely generalised. Recommendations for future research include the development of further studies in other regions, as well as more in-depth research on the effect of e-voting on the democratic process at the national level, taking into account broader social, cultural, and regulatory variables.

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