E-Voting Inclusivity: The Accessibility of Elderly Voters in the 2021 Village Head Election in Sleman Regency

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<td>The Village Head Election (Pilkades) is a forum for the community to use their voting rights to elect leaders at the village level. It utilizes technology as a tool to accelerate and influence the technicalities of village head elections from conventional to digital through electronic voting (e-voting). This research aims to analyze the accessibility of elderly voters in the Village Head Election in Sleman Regency, Special Region Province of Yogyakarta (DIY). This research was examined using Thomas and Penchansky's theory which consists of indicators of availability, accessibility and accommodation. This research was a qualitative type of research with data collection techniques using primary data, obtained from interviews, and secondary data, obtained from journal articles and other literature studies in the form of research-related documents. The results of this research show that the Sleman Regency’s Community Empowerment Service and the Village Government were the parties that provide facilities and infrastructure to the community in the village head election in Sleman Regency. In accommodating this, initially, the political dynamics in Sleman Regency were more apathetic and traditional for the elderly people due to the change of the era. However, after researching, the problems that arose during the election were more related to the technical aspects of e-voting rather than the community or elderly people. Several obstacles occurred during e-voting, making the voters annoyed. Then, the elderly voters were given the same services as the other voters, except for the elderly with limitations. In this case, indicators such as availability, accessibility, and accommodation are considered appropriate and sufficient for the needs of elderly people. Regarding these needs, the TTU (the main technical team) and TTL (the field technical team) try their best to fulfill whatever it is without discrimination.</td>
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Kata Kunci

Aksesibilitas; E-Voting; Pilkades; Lansia;

ABSTRAK

terbilang layak dan cukup untuk kebutuhan pada lansia. Dengan hal yang dibutuhkan oleh lansia, TTU dan TTL berupaya dan berusaha apapun yang dibutuhkan itu terpenuhi tanpa mendesakriminasi.

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Introduction

This research aims to analyze the accessibility of elderly people in the 2021 Village Head Election in Sleman Regency. The Village Head Election (Pemilihan Kepala Desa/ Pilkades) is a forum for the community to use their voting rights to elect leaders at the village level. The implementation of village head elections continues to use and pay attention to the principles of being direct, general, honest, fair, accessible, and confidential (Kristina, 2021). Village head elections are carried out traditionally. It is a conventional type of election that still uses ballot boxes and ballot papers with pictures of the leader candidates and vote counting is still done manually. Nevertheless, the rapid development of the era which utilizes technology to speed up all matters has also influenced the technicalities of village head elections from conventional to digital through electronic voting (e-voting) (Simamora, 2022). E-voting is an electronic system used to process digital information in voting, distributing votes, counting votes, as well as sending and visualizing voting results (Dedi Hisban Hasan, 2019).

One of the regions that has implemented e-voting in the election of village heads (Lurah) is Sleman Regency which is regulated in Regional Regulation (Peraturan Daerah/ Perda) Number 1 of 2021 concerning Procedures for Election, Appointment and Dismissal of Village Heads. The simultaneous holding of village head elections makes Sleman Regency the first region in Indonesia to implement the e-voting system simultaneously (Taniady, 2020). Implementing e-voting in village head elections aims to realize the accurate, accountable, effective, and efficient direct election results. Moreover, this system is an effort to realize the vision of creating an e-government system towards a smart county in Sleman Regency.

The e-voting system has various advantages and disadvantages. Some benefits of e-voting include; 1) faster calculation of vote results, the results of voting will be calculated using a system which is undoubtedly faster than the manual calculations; 2) more accurate results, as it uses advanced and sophisticated technology; 3) riot prevention at the TPS (Tempat Pemungutan Suara/ polling station). Whereas, there are several disadvantages of the e-voting system, such as 1) limited openness and understanding of the system for non-experts, 2) lack of transparency and the possibility of bugs or system errors occurred due to system failures, 3) the requirement of system certification, because to process the e-voting servers, experts in the field of e-voting are needed.

Apart from that, technically, it was found that some special voters, such as the elderly, encountered difficulties in using their voting rights. This is because most of the
elderly people experience confusion in the voting booth when they want to vote. Therefore, many Field Technical Teams (Tim Teknis Lapangan/ TTL) near the booth exist. The village community who have no understanding in the technology used, especially the elderly people, are assisted by the technical teams and the relatives of the voters in conducting the e-voting. The need for additional outreach/ socialization from the government is one factor affecting the operation of this e-voting system. Inclusive elections are the dream of the Indonesian people.

Hence, the organizer of village head election in Sleman Regency should pay more attention to the effective and efficient aspects in determining the village head election. Furthermore, it is necessary to pay attention to the people's voting rights, especially the elderly voters, in using their voting rights. The need of human rights (Hak Asasi Manusia/ HAM) for elderly people has not yet been fully respected, protected, and fulfilled by the state. Equality in voting rights is one of the parameters for democratic elections, marked by implementing inclusive polls. In the electoral field, inclusive has the same meaning as the loan word taken from English. In implementing this e-voting, elderly people still need assistance in choosing the candidates, thus they shall be monitored due to the lack of understanding during socialization and limitations in voting.

Various previous studies have put their research focus on the implementation of e-voting as an alternative in the general election process. These studies provide valuable insights into aspects related to e-voting, including accessibility, technology reliability, data security, voter turnout, and social impact. However, it is essential to note that e-voting has been a topic of discussion in Indonesia, and there have been some trials in small-scale elections. For example, a conducted research (Adi et al., 2014) regarding "Poll Site E-Voting" shows that the system is very effective since it is easy implemented by the community and the program is adequate.

Based on the results of a research (Oktavionus Bello, 2022) entitled "E-KTP-Based E-Voting Device Planning," e-voting innovation using e-KTP can simplify the implementation of the election process, especially in the registration verification process as it only uses KTP (Kartu Identitas Penduduk/ ID Card). Meanwhile, a research (Suparto, 2020) entitled "The Effectiveness of E-Voting in the 2018 Village Head Election in Pemalang Regency" states that the obstacle that often occurs in general elections using e-voting is the data verification that sometimes encounters errors. Findings from a research (Risnanto, 2018) entitled "Electronic Voting/E-Voting Application Using Short Message Service and at Command Technology" indicate that the e-voting system can process voting
results on a small, medium, and large scale. E-voting only requires a relatively lower operational cost, and the impacts of e-voting are considered more effective. The results of a research (Lubis et al., 2022) entitled "The Implementation of Election Principles Against Electronic Voting (E-Voting) in the 2024 Elections" show that the 2024 elections can be carried out using e-voting, thus it can be implemented quickly, precisely, accurately, effectively, and of course, not forgetting the principles of LUBER (direct – public – free - confidential) and JURDIL (honest - fair).

Based on this, it is necessary to carry out research regarding the inclusivity of e-voting and accessibility of the elderly in the 2021 village head election. This is also supported by the results of a literature review conducted using VOSviewer by processing 50 documents related to e-voting. The details can be seen in the following image:

![Figure 1. Vos Viewers Bibliometric Analysis](image)

Based on the tracing results of previous studies that had been analyzed using the VOSviewer Bibliometrics, it can be concluded that researches on e-voting has indeed been carried out, and other studies focus more on studying network security, e-democracy, and data privacy. Additionally, previous research focusing on e-voting was reviewed in 2019. Therefore, this research aims to update the study of e-voting by using the Service Accessibility theory.

Based on this description, this study uses the Service Accessibility Theory of Thomas and Penchansky. Service Accessibility Theory facilitates research on e-voting in Sleman Regency because it provides a comprehensive framework for analyzing availability, accessibility, and accommodation in e-voting. Hence, this research has a problem formulation: How does E-Voting apply to the accessibility for elderly voters in the Village Head Election in Sleman Regency?
Method

This research was a qualitative type of research by using a case study approach. According to (Ali Basyah & Razak, 2020), qualitative research is an attempt to rationalize and interpret the realities of life based on what researchers understand, as in determining research objectives, it requires a more detailed and in-depth understanding. Qualitative research is very suitable to be conducted in this condition. Because of its elaborative nature, qualitative research can quickly help researchers dig deeper into information related to a research topic. Later, the information obtained can be used to determine research objectives. This type of research and approach can make it easier for researchers as it is more detailed and in-depth, considering that this research also focuses on quality. In addition, case study approach is a case study referring to the method for knowing and understanding individuals by using inclusive and comprehensive practices (Susilo Rahardjo & Gudnanto, 2023).

Data collection techniques used were primary and secondary data. According to (Bungin M Rahman, 2017), primary data is the data obtained directly from the targeted research respondents. The primary data was taken from interviews with Adib Burochmad, Head of the Institutional Development and Village Apparatus Division, and Aulia Frida Widyasmara, Sub-Coordinator of the Village Apparatus Substance Group for the Community Empowerment Service and the Village Office of Sleman Regency. These informants assisted the researchers in obtaining accurate, detailed and relevant data regarding e-voting in the simultaneous regional elections in Sleman Regency. Meanwhile, according to (Martono, 2014), secondary data is the data obtained from a second source (a non-original first person) who has information or data related. The secondary data for this research was obtained through journal articles and other literature studies in the form of photos related to the research.

Figure 2. Interactive Research Model
Source: Sugiyono (2017)

From the figure above, it can be known that the obtained data was presented and analyzed interactively through three stages of analysis. The first stage was data reduction or selecting and mapping the data according to the needs of the research. The second stage was the presentation of the data, in which the selected data were analyzed using the indicators of the applied research theory. The third or final stage was the drawing of conclusion as the final
process to determine the accessibility provided to voters in the electronic-based simultaneous regional elections in Sleman Regency.

**Result and Discussion**

**Electronic Voting (E-Voting)**

An election can be inclusive if there are indications such as the following: first, the total coverage of voters with the right to vote has been registered in the voter register, and second, the level of voting rights is high. The high number of coverage indicates that all groups of voters, both general voters, voters with special needs, voters in remote locations, medical staff, and security officers, have been registered on the voter list. Ideally, the degree of voter coverage is 95-100% (Surbakti & Hasyim Asy’ari, 2011). Another indicator is the high use of voting rights. All groups of voters are given the broadest opportunity possible to vote, either through voting procedures as previously mentioned, or by providing comfortable facilities at polling stations (TPS) according to the principle of adequate polling arrangement (safe and comfortable voting arrangements). Nevertheless, the level of use of the voting rights is still influenced by the level of community political awareness (Sallal et al., 2023).

The theory applied in this research was the service accessibility theory proposed by (Thomas Penchansky, 1981), which stated that there are three indicators in the service accessibility theory: 1) Availability, consisting of three components which include Man (resources in implementing e-voting-based elections), Material (availability of supporting goods in implementing e-voting-based elections), Method (services provided to voters), and Machine (availability of supporting goods); 2. Accessibility, referring to the facilities utilized in the implementation of e-voting-based general elections; 3) Accommodation, interpreted as the service system of the voting place related to ease of use. Then, the data presented were analyzed using this theory, starting with data reduction, data presentation and drawing conclusions.

**Availability**

Availability is a component or system that will perform as expected at a certain point in time when used under certain operating conditions. The performance of the system is available. Then, the Availability depends on reliability and necessity. In this case, there are four components which include Man, Material, Method, and Machine. The Availability of Man refers to the resources in implementing e-voting-based Head Village Election. The Availability of Man itself was also confirmed by the opinion of the TTL (the field technical team), the
officers that monitoring the election access. The Availability of officers at all polling stations (TPS) was acceptable because the number was sufficient and assisted by several existing TTU (the main technical team). The Availability of Material refers to the Availability of supporting goods in the implementation of e-voting. The Availability of material in the village head election is related to the Availability of logistics at the time of the election, which includes computers for voting, election result receipts, and ballot boxes. The last, the Availability of Method refers to the services provided to voters in implementing e-voting.

Regarding the Availability of material in the village head election of Sleman Regency, the TTL explained that for logistical needs, the data had been prepared long ago to be requested from the center. The material lists that have been prepared in general is the same as for general elections. The difference here was that they did not use paper as in the conventional methods. Based on this statement, the logistics provided by the officers did not differentiate between the general public, the elderly, and people with disabilities. The Availability of Machine refers to the Availability of supporting goods for the implementation of e-voting. The Availability of Machine in the village head election includes parking lots, accessible voting places, and waiting rooms for the elderly. The Availability of Method in elections for the elderly is how the services are provided, because many elderly people still have no understanding in e-voting. In this case, the elderly will be accompanied by KPPS (Voting Organizing Group) and TTL officers to assist them to the booth and how to choose their candidate pair (Astuti & Suharto, 2021).

Availability indicators in the village head election include man, material, machine and method variables. From the results of an interview with one of the TTUs, Mr. AL Adhib from the Institutional Development and Village Apparatus Division of the Community Empowerment and Village Office of Sleman Regency, it was emphasized that in the e-voting based elections in Sleman Regency, everything had run smoothly. Of the four variables, the availability of material has a significant impact on the elections with the existence of supporting items for implementing elections with the new system.

From the explanation above, the village head elections were held simultaneously in Sleman Regency in 2021 by considering the availability indicators with material parameters, including accessible elections. This is proven by the absence of discrimination against the elderly in Sleman Regency. Then, according to Ms. Aulia, Sub-Coordinator of the Village Apparatus Substance Group of the Community Empowerment and Village Office of Sleman Regency, the Availability provided by the TTU and TTL in supporting this e-voting had all fulfilled or met the availability indicators, because of the facilities used in Sleman Regency. Generally, there is nothing specifically for the elderly or disabled.
Based on the description, there is a visualization of the data obtained from the interview related to the Availability indicators in e-voting-based elections in Sleman Regency. From these data, the results of the availability analysis show that the Availability of material has a significant impact from the beginning to the end of the election process, related to the supporting goods in the form of a set of tools for the election, such as computers, generators, printing presses, booths, ink. Material availability is the Availability prepared by the election officials based on e-voting before the election. From this, it can be said that the availability of materials is very supportive, and the elections can be said to be accessible if all the availability of supporting goods meets the availability of material (Firdaus, 2021). In addition, the TTU and TTL provided only general materials, not specifically for the elderly. However, the committee has appealed for the election time to be supervised by the TTL or KPPS at the TPS.

**Accessibility**

Accessibility is a measure of convenience on how location and land use interact with each other and whether the location is easy or difficult to reach through the transportation network system that provides the necessary facilities for people who have the right to vote (Pinky, 2018). Thus, accessibility can be understood as the convenience provided to the people who have voting rights and to the elderly as compensation. So far, people only know that the word accessibility relates only to people with physical disabilities (Sadikin, 2015). Accessibility in e-voting-based village head elections is divided into physical and non-physical accessibility. Physical accessibility is in the form of facilities and infrastructure for elections, such as access to where the voting takes place, and the facilities used, such as the availability needed by voters, and various equipment. Meanwhile, non-physical accessibility include information services to the public about e-voting, such as socialization about e-voting (Jimly Asshiddiqie, 2017).

In accessing e-voting-based village head elections, the availability of facilities is the main thing in implementing accessible elections. In this case, the officer provides indoor and outdoor facilities. Facilities in the room include administration desks, cubicles, waiting rooms for elderly voters, scanners, monitors, ink, and e-voting tools. Whereas, outdoor facilities are in the form of provision of parking areas. The existence of general TPS has become the main thing in the election, yet Mobile TPS is a new innovation in Sleman Regency. The existence of Mobile TPS can make it easier for the community to take part in the elections, especially for people with poor road access and lack of community outreach. For the first time in the history of democracy, village head election is being held by e-voting using mobile TPS that go from
house to house to facilitate voters who surely cannot go to the TPS in the local area, such as elderly people, sick people, people with special needs, or people with other disabilities (Dimas Aji, 2021).

Furthermore, the analysis results regarding non-physical access in e-voting-based elections in Sleman Regency are in the form of services from officers to voters, providing information about e-voting-based elections from the socialization stage to the voter stage for the socialization participants, including the Village Heads, Community Leaders, and Padukuhan residents. By carrying out the socialization, it is expected that the participants will participate in disseminating the procedures for E-voting. In 2021, the estimated number of voters in Sleman Regency was 356,086, using 1,000 sets of E-Voting Tools assisted by the Main Technical Team 57 and Field Technical Team 943. This socialization took place for approximately three months prior to the implementation of e-voting-based elections. The officers conducted socialization again before the election begins. The socialization continued while still paying attention to participants' health secrets by continuing to wear masks and maintaining distance as well as practicing using the E-Voting device. The participants were given secret gloves. They were enthusiastic and found it easy to use the E-Voting tool. Some of the socialization participants, several elderly participants, also found it very easy to practice using the E-Voting tool. Phase 2 of Socialization was held in May - June 2021 in 16 Villages (Yudha, 2021).

Apart from socialization, there was a simulation after the socialization was carried out. The officers provided space for the community to try and practice the e-voting-based elections. With a good coordination flow for disseminating information related to election changes from manual to e-voting, the community receives significant changes (Muhammadun, Subchan Zuhri & Ris Andy Kusuma, 2019).

**Accommodation**

Accommodation is related to polling station services, such as visitor opening hours, the waiting time for service, and the length of waiting time for the service to start (Nisa, 2012). On the other hand, accommodation is the change in the behavior of doing new things that helps them adjust to their environment (Abdi, 2022). Accommodation in village head elections can be focused on service and administration to the general public. The e-voting-based village head elections opens from 08.00 WIB to 13.00 WIB, which is then immediately followed by vote counting using the e-voting system. Apart from that, there is also an understanding of language and interpretation in providing services that needs to be known, which is in terms of voting
process at the polling stations, there are terms that need to be conveyed in a particular language to voters according to their limitations and needs (Sitanggang, 2022).

The accommodation indicators are in the form of place services, officer services, and administrative services. From the results of an interview with one of the TTUs, Mr. AL Adhib from the Institutional Development and Village Apparatus Division of the Community Empowerment Service and the Village Office of Sleman Regency, it was emphasized that the services provided by these officers were nothing special, but all the same. The meaning of nothing special is that there is no difference between the general public, teenagers, adults, and the elderly, and between the healthy, sick, and disabled people. Based on this explanation, the services provided were the same and there is no difference. It's just that help is needed to gather the elderly and KPPS officers will help them (Spadafora et al., 2023).

Furthermore, Ms. Aulia, Sub-Coordinator of the Sub-district Apparatus of the Village Office of the Community Empowerment and Village Office of Sleman Regency, emphasized that in terms of the services provided, several things were stood out to make it easier for the elderly, such as the existence of the mobile TPS with the urgency of the elderly not being able to leave the house due to illness. This is a good service without discriminating against the elderly. Based on this description, Sleman Regency continues to provide the same services to all of its people without exception.

Hence, the services provided by the election officials were in the form of place services, officer services, and facility services. The place services provided by the election officials were accessible voting places, thus the implementation of the elections runs smoothly. These officers' service conducted from before and during the election days, since disseminating information from the officers is also one of the essential services provided (Hulwan, 2016). Then during the elections, the officer's services started from the opening of the election until the vote count. For administrative services in the e-voting-based village head elections, the officers only prepared the voter data. From this, the service is running as it should (Country, 2020).

Conclusion

Based on the data collected from the field, as presented and analyzed previously, the Sleman Regency’s Community Empowerment and the Village Service are the parties that provide the community with facilities and infrastructure in the village head elections in Sleman Regency. There are many innovations in the elections, such as the existence of mobile polling stations (TPS) to make it easier for elderly people who have houses with difficult road access.
as well as limitations for them who are sick. In accommodating this, initially for elderly people, the political dynamics in Sleman Regency were more apathetic and traditional. After carrying out several stages, from communication socialization to the implementation of e-voting, it can change the mindset of the elderly. However, after researching, the problems that arose during the election were more related to the technical aspects of e-voting rather than the community or the elderly, as several obstacles that occurred during e-voting made the voters annoyed. Moreover, the elderly are given the same services as the other voters except them with limitations. In this case, indicators such as availability, accessibility, and accommodation are considered appropriate and sufficient for the needs of elderly people. Regarding this needs, the TTU and TTL try their best to fulfill whatever it is without discrimination. This research recommends to the future researchers to not only focus on accessibility, but also on e-government and the willingness and readiness to welcome e-voting-based village head elections.

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