

## The Impact of Technological Advancement in the Use of the SIREKAP Program in the 2024 Elections is studied according to the Principles of Public Accountability for Democratic Election Calculations

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### **ABSTRACT**

*The application of technology in the general election (Pemilu) process has great potential to increase efficiency and transparency, but also raises a number of challenges related to data security and integrity. This article examines the impact of using the Election Recapitulation Information System Program (SIREKAP) in the 2024 Election in Indonesia, with a focus on aspects of public accountability and democratic election calculations. This research uses a normative juridical approach by analyzing related laws and regulations, such as the Election Law and General Election Commission Regulations (PKPU), as well as secondary sources such as books and scientific journals. The research results show that SIREKAP is a solution to the challenges in the manual vote recapitulation process, with the aim of speeding up the process, increasing accuracy and increasing transparency. However, this program is also faced with a number of problems, including data errors, access and connection problems, and cyber security issues. To overcome this problem, concrete steps are needed, such as intensive training for voting organizers, expanding internet network infrastructure, and strengthening system security. In conclusion, the use of SIREKAP in the 2024 Election has the potential to increase the efficiency and transparency of the election process, but also presents a number of challenges. Close collaboration between governments, legal entities and civil society is necessary to ensure successful implementation and maintain security. By implementing the right solution, it is hoped that SIREKAP can become an effective tool in maintaining the integrity and transparency of the election process in the future.*

**Keywords:** election, SIREKAP, technology



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## INTRODUCTION

Technological developments have become an inevitable element in human life. The ever-growing dependence on technology can cause excessive impacts.<sup>1</sup> In the era of rapid advances in information technology, the use of technological systems in the general election (Pemilu) process is becoming increasingly relevant and strategic. Elections are the main foundation for a country that implements a democratic system, where the people have the right to choose their leaders freely and fairly. In 2024, elections in Indonesia will take a step forward by implementing the SIREKAP Program (Election Recapitulation Information System) to facilitate vote counting and data management.

Previous literature reviews show that the use of technology in elections is nothing new. Several previous studies have tried to explore the impact of technological advances on the implementation of elections. For example, research by Ali Rokhman in 2011 in an article entitled "Prospects and Challenges for Implementing E-VOTING in Indonesia" highlighted the use of electronic systems in elections as an effort to increase the efficiency and accuracy of vote counting. This research shows that the implementation of technology, although it provides convenience, also poses challenges related to data security and integrity. In this context, Ari Wibowo 2023 in a journal entitled "Implementation of the Application of E-VOTING in the Context of Digital Transformation in General Election Management in Indonesia" stated that data security and transparency of the election process are crucial aspects that need to be considered in facing the digital era.

However, to the best of our knowledge, there has been no research that specifically explores the background to the birth of the SIREKAP program system and the impact of the SIREKAP Program in the 2024 Election in Indonesia. Therefore, this article aims to examine in more depth the background to the birth of the SIREKAP program system in elections and the impact of technological advances, especially the SIREKAP Program, in the implementation of the 2024 Election. The focus of the research is focused on analyzing the impact of using SIREKAP in the context of the principles of Public Accountability and calculation. Democratic elections. Public Accountability is the main key in maintaining the integrity and transparency of elections, while democratic election calculations ensure that the votes of each voter are counted correctly and provide accurate results.

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<sup>1</sup> SITI Zubaidah, "Getting to Know 4C: Learning and Innovation Skills to Face the Era of Industrial Revolution 4.0," 2018, 1–18.

It is hoped that the use of the SIREKAP Program can make a positive contribution to the implementation of the General Election. <sup>2</sup>However, it is necessary to study in depth how this technology affects the principle of Public Accountability, namely the extent to which the public can monitor and understand the election process. Apart from that, the impact of technology on democratic election calculations is also a critical aspect that needs to be evaluated, including data integrity, security and system reliability.

Through this research, it is hoped that a deeper understanding can be found about the role of the SIREKAP Program in the 2024 Election and the extent of its impact on the principles of Public Accountability and democratic election calculations. Thus, it is hoped that this research can make a significant contribution to our understanding of the influence of technology in the context of elections, guiding steps to improve the effectiveness and integrity of the system in the democratic process.

## RESEARCH METHOD

This research is a study that uses normative juridical methods with a statutory approach and legal concepts. This method is used to analyze and evaluate the legal framework related to the use of technology in elections in Indonesia. Primary data used in this research was obtained from related laws and regulations, such as the Election Law, General Election Commission Regulations (PKPU), and Constitutional Court (MK) Decisions. This primary data is the main basis for identifying relevant legal grounds and evaluating the legal implications of the use of technology in elections.

Apart from primary data, this research also uses secondary data obtained from books, scientific journals and other trusted sources. Secondary data is used to support deeper analysis and discussion regarding legal issues that arise in the context of the use of technology in elections. Through this secondary data, research can gain a broader understanding of the development of election technology, the legal challenges faced, as well as best practices that can be adopted from the experiences of other countries. <sup>3</sup>By combining primary data and secondary data, this research can provide a comprehensive picture of the legal

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<sup>2</sup> Putri Ariatna Alia Rony Kriswibowo, Rusina Widha Febriana, Johan Suryo Prayogo, "The Influence of Features and Ease of Use on User Satisfaction of the Si Rekap KPU Application," *Journal of Computer Science and Information Technology* 3, no. 1 (2024): 16–24, [https://doi.org/10.1163/\\_q3\\_SIM\\_00374](https://doi.org/10.1163/_q3_SIM_00374).

<sup>3</sup> Rizki Natalina Silalahi, "Legal Implications Of The Use Of Biometric Recognition Technology In Security Systems In Indonesia," no. Vol. 1 No. 2 (2024): Law Student Assignments (2024).

regulations governing the use of technology in elections in Indonesia. It is hoped that an in-depth analysis of the legal basis and relevant legal concepts will provide a better understanding of the legal issues that arise, as well as solutions that can be proposed to increase the effectiveness and security of the use of technology in elections.

Thus, this research not only provides an understanding of the legal situation that exists in Indonesia, but can also provide insight into global trends in the regulation of election technology and their implications in the Indonesian legal context. In the context of research that uses a normative juridical approach, it is important to conduct an in-depth analysis to relevant legal texts and refers to existing legal concepts. This allows researchers to construct solid legal arguments and provide policy recommendations based on sound legal principles. Thus, it is hoped that this research can make a significant contribution to the development of thinking and policies regarding the use of technology in elections in Indonesia.

## RESULT AND DISCUSSION

### Background

Technological progress is something that refers to new developments. Technological advances have had a significant impact on the progress of various aspects of human life. <sup>4</sup>Technological developments have enabled people to access information more quickly and easily via the Internet. In addition, the industrial sector is also experiencing major changes with the emergence of automation and artificial intelligence, thereby increasing efficiency and productivity. This proves that technological innovation not only has an impact on the information sector but also various sectors such as manufacturing, health, education, transportation, and others. <sup>5</sup>Humans' desire to develop and achieve a more comfortable life is the main driver of continuous technological progress.

By combining curiosity and creativity, people create new solutions to the challenges they face. For example, medical technology has produced innovative tools such as advanced diagnostic tools and more effective treatments, improving medical services and increasing life expectancy. In other words, technological

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<sup>4</sup> Muhamad Ngafifi, "Technological Progress and Human Lifestyles in a Socio-Cultural Perspective," *Journal of Educational Development: Foundations and Applications* 2, no. 1 (2014): 33–47, <https://doi.org/10.21831/jppfa.v2i1.2616>.

<sup>5</sup> Then Adi. Adha, "Digitalization of Industry and its Impact on Employment and Work Relations in Indonesia," *Journal of Legal Compilation*, no. Vol. 5 No. 2 (2020): *Journal of Law Compilation* (2020): 267–298.

progress is not only a tool to make life easier, but also a catalyst for achieving a higher level of prosperity.<sup>6</sup>

However, although technological advances bring various benefits, they also present various challenges and ethical considerations. Issues of privacy, cybersecurity and environmental impact are becoming increasingly important. Therefore, regulation and awareness of the social impacts of technology are needed to minimize negative risks. Therefore, apart from continuing to encourage innovation, humans also have a responsibility to ensure that technological progress provides balanced and sustainable benefits for society as a whole.

Technological advances have had a significant impact on the electoral process in various parts of the world. First of all, digitalization has increased the accessibility of political information and expanded the space for citizen participation in the democratic process.<sup>7</sup>The social media stage has become a powerful vehicle for conveying political messages, mobilizing voters, and facilitating public discussion. Political campaigns via social media are able to reach a wider audience and create a more dynamic space for participation, changing the traditional paradigm of more centralized political campaigns.

Technology also plays an important role in increasing the transparency and integrity of elections.<sup>8</sup>Electronic systems for voting and calculating results minimize the risk of human error and fraud, providing greater confidence in election results. Apart from that, the use of blockchain technology is a potential solution for securing vote integrity and providing high security in holding elections. This paves the way to fairer, more accountable and more trustworthy elections.

However, technological advances in the election context also pose a number of challenges. Threats to cybersecurity, disinformation and electronic manipulation are risks that need to be addressed.<sup>9</sup>The importance of protecting voter information and privacy becomes increasingly crucial along with the

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<sup>6</sup> and Ade Ananto Terminanto Harini, Hegar, Ahmad Gawdy Pranansa, "Technological Innovation in Increasing the Efficiency of Education Management and Community Service in the Digital Era," *Journal of Community Service*, no. Vol. 4 No. 6 (2023): Volume 4 Number 6 of 2023 (2023): 12891–97.

<sup>7</sup> and Bhakti Nur Avianto. Boestam, Ambia B., Adi Prakosa, "Efforts of Political Parties in Utilizing Virtual Democracy in the Digital Era," *Journal of Communication Literature*, 2023, 1–17, [https://doi.org/10.1163/\\_q3\\_SIM\\_00374](https://doi.org/10.1163/_q3_SIM_00374).

<sup>8</sup> and Mathias Jebaru Adon Aliano, Yohanes Alfrid, "The Political Geneology of Power in the '2024' Election System in Indonesia from Michel Foucault's Ethical Perspective," *Indonesian Journal of Philosophy*, no. Vol. 6 No. 3 (2023) (2024): 474–86.

<sup>9</sup> and Nelfira Nelfira Elizamiharti, Elizamiharti, "Democracy in the Digital Era: Challenges and Opportunities in Political Participation (2024): 61-72.," *Journal of Multidisciplinary Research and Technological Innovation*, no. Vol. 2 No. 01 (2024): January 2024 (2024): 61–72.

intensity of the use of technology in the election process. Therefore, while utilizing the positive potential of technology, policy makers and election organizers need to be proactive in overcoming challenges and maintaining the integrity of democracy through elections.

General elections (Pemilu) are one of the pillars of democracy in Indonesia.<sup>10</sup> In the process, the election organizer, namely the General Election Commission (KPU), always strives to improve the quality and transparency of election implementation. One of these efforts is by presenting the SIREKAP program. The General Election Recapitulation System (SIREKAP) is an application that was born as a solution to various problems that arise in the manual vote recapitulation process. This manual process takes a long time and is prone to human error. The lack of transparency in the process also increases the risk of manipulation and fraud, while manual vote recapitulation documents are often vulnerable to loss or damage.

However, with advances in information and communication technology (ICT), opportunities have opened up to create electronic recapitulation systems that are faster, more accurate and transparent. By utilizing ICT in the vote recapitulation process, it is hoped that it can increase public confidence in the election results. Public demand for higher quality elections also triggered the birth of the SIREKAP application. The public is increasingly critical of demanding better election implementation, including in terms of vote recapitulation. The use of technology is expected to increase accountability and credibility in election administration. Government support was also an important factor in the birth of SIREKAP. The government provides support in the form of funding, regulations and ICT infrastructure, as a form of their commitment to the use of technology in organizing elections.

The aim of the SIREKAP program is to speed up the vote recapitulation process, increase accuracy and efficiency, and increase transparency and accountability in the process. The benefits of this program are very diverse, ranging from speeding up the announcement of election results, increasing public trust, to minimizing the potential for fraud and vote manipulation. However, the SIREKAP program is also faced with various challenges, such as the equitable availability of ICT infrastructure, digital literacy, cyber security, and the potential for disputes over election results due to the use of technology.

The SIREKAP program is an electronic recapitulation system of vote counting results at polling stations (TPS) which is designed to speed up,

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<sup>10</sup> Dian Aulia, *Strengthening Democracy: Political Parties and Election (System) as Pillars of Democracy (2016)*, *Indonesian Society* 42.1, 2016.

streamline and increase the transparency of the vote recapitulation process.<sup>11</sup> This program was first launched in the 2019 Election and has been used again in the 2024 Election with several improvements compared to SIREKAP 2019, such as several differences between SIREKAP 2019 and SIREKAP 2024 as follows:

1. Accessibility:
  - 2019: SIREKAP can only be accessed by KPPS, PPK and KPU.
  - 2024: SIREKAP can be accessed by the public via the SIREKAP KPU application which is available on the Play Store and App Store.
2. Features:
  - 2019: The SIREKAP 2019 feature is limited to the implementation of vote recapitulation.
  - 2024: SIREKAP 2024 is equipped with additional features such as:
    - Digital C-Result Form
    - Electronic signature
    - Geotagging photos
    - Real-time monitoring
3. Security:
  - 2019: SIREKAP 2019 uses data encryption and firewall.
  - 2024: SIREKAP 2024 uses a more sophisticated security system, such as:
    - Added biometric authentication
    - End-to-end encryption
    - Penetration testing
4. Integration:
  - 2019: SIREKAP 2019 is not integrated with other KPU systems.
  - 2024: SIREKAP 2024 is integrated with other KPU systems, such as:
    - Voter Data System (Sidalih)
    - Candidate Information System (Silon)
    - Vote Count Recapitulation System (Sirekap)

## Legal Studies

Currently, in Indonesia there is no specific law that explicitly regulates the use of technology in elections. However, several regulations provide the legal basis for the use of technology in organizing elections. Law Number 7 of 2017 concerning General Elections gives the General Election Commission (KPU) the

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<sup>11</sup> Alasman. Mpesau, "Digital Electronic Transformation in Counting and Recapitulating Election/Pilkada Votes: Analysis of System Existence in Results Dispute Trials at the Constitutional Court," *Journal of Social Humanities Management Sciences (JIMSH)*, no. Vol. 6 No. 1 (2024) (2024): 21–29, [https://doi.org/10.1163/\\_q3\\_SIM\\_00374](https://doi.org/10.1163/_q3_SIM_00374).

authority to use information technology in various aspects of elections, such as the recapitulation of vote counts.<sup>12</sup> Apart from that, Law Number 11 of 2008 concerning Information and Electronic Transactions (ITE) is also a relevant legal basis. This law regulates the validity of electronic evidence in legal processes, including election results produced through an electronic recapitulation process. As part of the existing legal basis, Constitutional Court Decision Number 14/PUU-XII/2014 confirms that the use of information technology in elections is permitted as long as it does not conflict with the 1945 Constitution.

The use of the Electronic Recapitulation System (SIREKAP) in elections in Indonesia has become a major concern, especially because there is no Election Law that specifically regulates its use. Instead, the use of SIREKAP is regulated through General Election Commission (KPU) regulations. PKPU Number 23 of 2013 regulates the Vote Counting Information System (Situng), which includes SIREKAP as part of the process. PKPU Number 5 of 2021 then clarified the use of SIREKAP as an aid in the recapitulation of vote counts, along with the implementation of the Electronic Based Government System (SPBE) within the KPU.

Furthermore, PKPU Number 3 of 2024 specifically stipulates procedures for recapitulating election vote counting results, including the use of SIREKAP in this process.<sup>13</sup> This regulation includes procedures for recapitulating vote counting results at various levels, and emphasizes the importance of using SIREKAP in the recapitulation process. However, please note that these regulations are subject to change, and further research is needed to find the most up-to-date regulations.

## Problems

Even though there are regulations governing the use of SIREKAP, there are still several important points that must be considered. One of them is that SIREKAP is not valid evidence in disputes over election results. Data generated by SIREKAP must also be verified with the C-Paper Results form.<sup>14</sup> In addition,

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<sup>12</sup> and Nur Muniifah Lubis, Mhd Ansor, Muhammad Yasin Ali Gea, "Application of Election Principles to Electronic Voting (E-Voting) in the 2024 Election," *Law Enforcement Scientific Journal*, no. Vol. 9 No. 1 (2022): 44–56.

<sup>13</sup> Mpesau, "Digital Electronic Transformation in Counting and Recapitulating Election/Pilkada Votes: Analysis of System Existence in Results Dispute Trials at the Constitutional Court."

<sup>14</sup> MAULI KURNIA CAHYANI, "CRISIS MANAGEMENT GOVERNANCE OF THE 2020 BANDAR LAMPUNG WAKOT ELECTION IN THE CONDITIONS OF THE

the KPU has an obligation to announce the results of the vote count recapitulation through SIREKAP and provide public access to them. However, the use of SIREKAP in the 2024 elections is still a subject of debate. Several parties are concerned about the potential for fraud and data manipulation in SIREKAP. Therefore, the KPU needs to ensure the security and integrity of SIREKAP so that it can be accepted by all parties. This shows the need for further attention to regulation and implementation of technology in the electoral process to ensure transparency, security and public trust in the democratic system.

With these regulations and decisions, the use of technology in elections in Indonesia is increasingly developing. The use of information technology not only speeds up administrative processes, but also increases transparency and accountability in the administration of elections. Apart from that, technology can also be used to increase public participation in the democratic process, for example through online voter outreach and education.

However, even though there have been efforts to regulate the use of technology in elections, challenges and problems related to security and system integrity remain a concern. Protection of voter data and electronic system security are aspects that must continue to be considered and strengthened in the development of election technology in Indonesia. Thus, further steps are needed to ensure that the use of technology in elections can run effectively, efficiently and safely in accordance with the democratic principles that are upheld.

From the presentation that has been explained, SIREKAP 2024 has experienced several improvements compared to SIREKAP 2019, especially in terms of accessibility, features, security and integration. These improvements are expected to increase the transparency, efficiency and accountability of the vote recapitulation process in the 2024 Election.<sup>15</sup> However, behind all the improvements in the 2024 SIREKAP there are still problems resulting from the existence of the SIREKAP Program in the implementation of the 2024 Election, which was introduced as a tool to facilitate vote recapitulation in the 2024 Election, facing various challenges that disrupt the smooth process of democratization. One of the main problems that arises is data errors. Differences were found between the data recorded in the C Result form, which is physical,

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2019 CORONA VIRUS DISEASE (COVID) NON NATURAL DISASTER (Study at the Bandar Lampung City General Election Commission)." (2022).

<sup>15</sup> and Dandi Dwie Lisadi Fauzani, Muhammad Addi, Anis Banowati, "Probability of Implementing and Concept of Hybrid E-Voting in Organizing the 2024 General Election," *Proceedings of the Actual Law Seminar, Faculty of Law, Islamic University*, no. Vol. 1. No. 4. (2023): 79–93.

and the digital data in Sirekap. This discrepancy raises doubts about the accuracy of the election results. In fact, there are cases where the data input is done incorrectly, resulting in votes that should be counted being ignored or even counted double. These inaccuracies undermine the legitimacy of the election as a whole.

Apart from that, access and connection problems are also a serious concern. Many KPPS (Polling Organizing Group) officers in various regions face difficulties in accessing Sirekap due to limited or unstable internet networks. As a result, the vote recapitulation process experienced significant delays. This delay not only affects the speed of delivery of election results, but also reduces public confidence in the integrity of the election process itself.

Furthermore, cyber security is an important issue that needs to be considered when using SIREKAP. The connection of this system to the internet opens up potential threats such as hacking and data manipulation. Concerns about this security gap could undermine public trust in the transparency and honesty of elections. If cyber security issues are not taken seriously, they can have a serious impact on the legitimacy of election results and can erode public trust in the democratic system as a whole. Therefore, steps are needed to strengthen the security system and ensure data integrity in SIREKAP in order to build public confidence in the election process. Efforts are needed to resolve this issue.

## **Effort**

Problems related to SIREKAP in the 2024 Election raise various concerns regarding data accuracy, accessibility and security. <sup>16</sup>The government has the responsibility to address this problem with a series of concrete steps. One of them is through intensive training for the Voting Organizing Group (KPPS) in using SIREKAP to minimize data input errors. The government also needs to improve control and verification of data before publication, as well as provide an easily accessible reporting platform to report data errors. In addition, legal entities must participate by establishing clear regulations regarding data accuracy standards in SIREKAP and taking firm action against violations that occur, such as data manipulation.

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<sup>16</sup> et al Hardiyanti, Marzellina, "The Urgency of the E-Voting System and SIREKAP in Organizing the 2024 Election," *Journal Equitable* , no. Vol 7 No 2 (2022): 249–271, <http://www.sciencedirect.com/science/article/pii/S0160738315000444>.

Access and connection problems are a serious problem that needs to be addressed immediately. The government must expand internet network infrastructure in remote areas and provide hardware and software that supports SIREKAP access in areas with weak internet connections. Collaboration with telecommunications operators is also needed to provide special data packages for KPPS. Meanwhile, legal entities can encourage the General Election Commission (KPU) to develop a SIREKAP system that can be used offline.

Cyber security is crucial considering the vulnerability of electronic systems to cyber attacks.<sup>17</sup> The government needs to work together with cyber security experts to conduct regular audits and testing of the SIREKAP system. Apart from that, increasing data encryption and authentication in SIREKAP as well as education and training for KPPS regarding cyber security are important steps. On the other hand, legal entities must establish regulations that regulate cyber security standards in SIREKAP and take firm action against cyber security violations. In addition to the solutions already mentioned, additional steps are also required. The government must increase transparency and accountability in the process of developing and using SIREKAP and involve civil society in the monitoring and evaluation process. Meanwhile, legal entities can form special teams to handle violations related to SIREKAP.

Close collaboration between the government, legal entities and civil society is the key to ensuring the smooth and safe use of SIREKAP in the 2024 elections. Thorough simulation and testing of SIREKAP is also needed before it is used in actual elections. Education to the public about the use of SIREKAP and how to report violations that occur should not be ignored. By implementing the solutions above, it is hoped that the SIREKAP 2024 problems can be overcome, so that the election process can take place in a democratic, transparent and accountable manner. It should be noted that cooperation between the government, legal entities and the community as well as implementing appropriate solutions is the main key to success in overcoming these problems.

## CONCLUSION

The use of SIREKAP in the 2024 Election has significant potential to increase efficiency and transparency in the election process, along with its ability to provide real-time data. However, the use of this technology also presents

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<sup>17</sup> Yosua Praditya Suratman, "Use of Counterintelligence Operational Strategy in Facing National Cyber Threats," *Journal of Defense and National Defense*, no. Vol 7, No 2 (2017): 1–18.

several challenges, especially regarding data security and integrity. To overcome this challenge, collective efforts from governments, legal entities and civil society are needed. Close collaboration between various parties is the main key in ensuring the smooth implementation of SIREKAP and maintaining its security. Apart from that, the importance of implementing the right solution is also an important factor in dealing with problems related to SIREKAP, thereby maintaining public trust in the integrity and transparency of the election process.

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