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Analysis of The Use of Sirekap in The Implementation of General Elections in Indonesia

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ABSTRACT

The lengthy process of collecting the results of the general election voting made the General Election Commission (KPU) have to use an online application to speed up the collection of the results of the general election votes. In addition, the large number of C paper results used to copy the results of the vote count made the KPU consider using an application. The Recapitulation Information System (SIREKAP) was created by the KPU to mediate this problem. The government's unpreparedness in providing e-governance, especially sirekap, an application that has been running since 2020 but still has many shortcomings, which should make election performance more effective and efficient, actually seems chaotic. Incomplete application feature errors, unstable internet networks in each region and many other problems have made the SIREKAP application widely protested by KPPS as users of the SIREKAP application. The problems raised in this thesis are, What is the Legal Basis for Using the System in Organizing Elections and What are the Constraints in Using Sirekap in Organizing Elections in Indonesia. This study uses a descriptive qualitative approach with data collection techniques

through literature studies and document studies. Literature study is used to study previous studies related to the use of the SIREKAP application, while document study is used to collect documents related to this study. The findings in this study will be discussed by the author with the theory of digitalization, the theory of General Elections and the theory of Democracy which discusses the level of effectiveness and appropriateness of the use of the SIREKAP application in the 2024 presidential election process. The emergence of public dissatisfaction with the election results calculated through the SIREKAP application and the lack of readiness of the application and supporters of the use of the application make the SIREKAP application a concern for the author to be discussed in this study. In the regulation of the implementation of general elections, each stage has been regulated by the regulations of the election commission and the regulations regarding digitalization do not conflict with the ITE Law so that the implementation of digitalization of the implementation of general elections in Indonesia already has a legal umbrella..

Keywords: *General Election, SIREKAP, General Election Commission*

INTRODUCTION

Elections are the primary instrument for realizing democracy, as they serve as a mechanism for implementing popular sovereignty guaranteed under Article 22E paragraph (1) of the 1945 Constitution. Within the Indonesian political system, elections not only determine the direction of government but also function as a benchmark of integrity, legitimacy, and democratic quality. However, the dynamics of election administration are often marked by various challenges that may undermine the very essence of democracy.

The 2019 Concurrent Elections illustrated the complexity of conventional electoral mechanisms. The heavy workload borne by KPPS officers resulted in the deaths of 894 officers and more than 11,000 others falling ill due to exhaustion. Beyond issues of worker safety, conventional elections also faced logistical problems, delays in distribution, high budgetary demands, and an increase in invalid ballots due to limited voter information. These issues highlight the need for a more efficient, safe, and adaptive electoral system.

In the context of technological development, digitalization has become a necessity in modern election administration. Many countries have adopted technology for voter registration, biometric verification, vote tabulation, and even e-voting. The use of technology is believed to enhance efficiency, transparency, accuracy, and

accountability in electoral processes. In Indonesia, the idea of electoral modernization has become increasingly relevant in addressing the challenges of conventional elections while optimizing the functions of election management bodies.

In line with these developments, the General Election Commission (KPU) introduced the Recapitulation Information System (SIREKAP) as a digital instrument designed to expedite the vote tabulation process and reduce the potential for manual error. The presence of SIREKAP is expected to improve time efficiency, lessen the workload of KPSS officers, minimize potential conflicts, and strengthen public trust in election results. However, its initial implementation has faced several obstacles, including unstable internet connectivity, application errors, and inadequate infrastructure and human resource readiness.

From a regulatory standpoint, the use of digital systems in elections is supported by a clear legal basis, including the Election Law, KPU regulations, and the fact that it does not conflict with the Electronic Information and Transactions Law (ITE Law). This means that election digitalization has sufficient legal legitimacy to be further developed. Nevertheless, technical challenges, data security concerns, and potential declines in public trust due to technological failures must be taken seriously, as evidenced by similar experiences in other countries.

Previous studies have highlighted various aspects of electoral digitalization, ranging from the use of SIREKAP in the 2020 Regional Elections, the potential of digital technology for the 2024 elections, to the global challenges associated with digitalizing electoral systems. These studies indicate that the issue of electoral digitalization is gaining increasing academic and practical attention.

Based on the foregoing background, the author is interested in conducting research focusing on the efficiency and effectiveness of SIREKAP in the administration of elections in Indonesia, particularly in evaluating its legality and implementation challenges.

Problem Formulation

1. What is the legal basis for the use of digital systems in the implementation of elections?
2. What are the constraints in the use of SIREKAP in the administration of elections in Indonesia?

METHOD

This research is a legal study that examines and analyzes laws and regulations related to the use of information technology in monitoring the voting and vote-counting process to realize fair elections. The research addressing the issues above employs a normative juridical research method, namely library research based on literature sources and written legal norms by examining the application of rules or norms within positive law (jhony Ibrahim,2005).

Legal science, as a discipline that is prescriptive (value-oriented) and applied, has sui generis characteristics and cannot be integrated into the social sciences (Peter Mahmud Marzuki,2008). Legal research is a process of identifying legal rules, legal principles, and legal doctrines that may be used to answer legal issues. This legal research is conducted as an academic study (Peter Mahmud Marzuki, 2002). Based on the description above, it can be understood that essentially, legal research is library-based research that relies on literature sources and written legal norms by examining the application of rules or norms in positive law. It has sui generis characteristics and cannot be integrated with the social sciences, and aims to discover legal rules, legal principles, and legal doctrines that can be used to answer legal issues. This legal research is carried out as an academic inquiry into legal norms, both written (laws and regulations) and unwritten (customary law), whether currently in force or those that may apply in the future.

Academic legal research is closely related to efforts to contribute ideas to the development of legal science through the discovery of new legal theories, new arguments, or new concepts regarding matters considered well-established in legal scholarship. The findings of such research will ultimately provide prescriptions regarding what ought to be done in relation to the legal issues presented.

RESULT & DISCUSSION

A. Legal Basis for the Use of SIREKAP in Election Administration

1. Sirekap

The legal framework for the digitalization of documents in Indonesia is regulated through various laws and regulations that ensure the validity and security of electronic documents. Several key regulations include:

1. Law Number 11 of 2008 on Electronic Information and Transactions (ITE Law):
Regulates electronic information and electronic documents as legally valid evidence.

2. Government Regulation Number 71 of 2019 on the Implementation of Electronic Systems and Transactions: Provides a framework for the operation of reliable and secure electronic systems.
3. Regulation of the National Archives of the Republic of Indonesia (ANRI) Number 6 of 2021 on Electronic Archives Management: Establishes standards for managing electronic archives to ensure the integrity and authenticity of digital documents.
4. Presidential Regulation Number 95 of 2018 on Electronic-Based Government Systems (SPBE): Encourages the integration of government services through document and process digitalization.

Digitalization systems must be regulated under statutory-level legislation. This is crucial because the implementation of the transition from analog to digital technology requires clear operational rules. The following laws govern the application of digitalization:

- 1) Law Number 14 of 2008 on Public Information Disclosure: Articles 7 to 12 mandate that public bodies provide digitalized public information accessible to the public.
- 2) Law Number 11 of 2008 on Electronic Information and Transactions (ITE Law): Articles 15 to 17 regulate electronic transactions and the administration of electronic systems.

Law Number 19 of 2016, which amends the 2008 ITE Law, further stipulates in Article 40 that the government shall facilitate the use of information technology and electronic transactions in accordance with prevailing regulations. SIREKAP (Election Recapitulation Information System) is a digital system developed by the General Election Commission (KPU) as a tool to assist in vote counting. According to KPU Decree Number 66 of 2024, SIREKAP is defined as an information technology-based application designed to publish vote-counting results and facilitate the recapitulation process. KPU created two types of SIREKAP that can be easily accessed. The implementation of these regulations ensures that digital documents have the same legal force as physical documents, provided that they meet predefined requirements.

2. Mechanism and Legal Basis of SIREKAP as a Supporting Tool for the 2024 Election

KPU remains committed to utilizing the advantages of SIREKAP in the 2024 General Election. Two versions of SIREKAP have been developed:

1. SIREKAP Mobile:

Used by KPSS officers to count and record vote results at each polling station (TPS). It functions as the primary source of vote data recorded in the C.Hasil-KWK form.

2. SIREKAP Web Version:

Used by District Election Committees (PPK) and KPU officers at the city/regency and provincial levels. It compiles and aggregates all primary data sources.

These two systems are used collaboratively to support the 2024 vote-counting process. The procedure is as follows:

1. KPPS officers install the SIREKAP application on their smartphones.
2. They log in using pre-registered accounts.
3. KPPS officers count the votes and record the results on Form C.Hasil-KWK.
4. They then photograph the completed form.
5. SIREKAP displays OCR/OMR reading results, which KPPS verifies for accuracy.
6. KPPS submits the document photo and OCR/OMR results to witnesses and supervisors via a link or QR code.
7. Witnesses and supervisors access the data by scanning the QR code or opening the link provided.

During the 2024 General Election, SIREKAP drew public attention and criticism, particularly from supporters of presidential and vice-presidential candidates who accused the system of contributing to electoral disputes. Despite this, KPU has confirmed that SIREKAP will still be used for the 2024 Regional Elections (Pilkada) scheduled for 27 November 2024. KPU argues that updating SIREKAP is part of its continuous improvement tradition, implemented based on evaluations from previous elections. Responding to criticism, KPU has planned several improvements, including system upgrades and more comprehensive training for election officers. KPU also scheduled meetings with Commission II of the Indonesian House of Representatives (DPR RI) to ensure readiness for the system's implementation. Benefits and Challenges of SIREKAP, Technology and information systems serve as instruments of transparency and accountability in implementing effective elections. Political participation tends to increase alongside greater political awareness, the significance of policy direction, strong competition among candidates, and the widespread use of digital media. SIREKAP, as a system used to collect, process, and display official election data, indirectly influences political participation. A transparent and accurate system boosts public trust in the integrity of the electoral process. Conversely, distrust in the system—such as suspicion of data manipulation—can reduce political participation. The system offers several benefits (Pradesa, I.A, 2024):

1. Transparency:

SIREKAP enables public access to real-time recapitulation data, thereby allowing citizens to monitor and verify results.

2. Accuracy:
By reducing human error and relying on data directly recorded from Form C1, SIREKAP produces more consistent and reliable results.
3. Efficiency:
SIREKAP accelerates data processing while reducing the burden on officers.

However, SIREKAP still faces key challenges, including technical reliability, concerns over fraud, auditability, verification procedures, and public trust—issues also experienced globally (Inzana, N., Maulana, A., & Sari, P.M, 2024).

3. Laws and Regulations Related to E-Voting Implementation

The widespread use of information and communication technology in Indonesia in recent years has not yet been accompanied by comprehensive legal protection for the public. Consequently, the utilization of information and communication technology in Indonesia has not been fully directed toward positive purposes. Alongside the rapid expansion of globalization, technological advancements—particularly in information technology—have accelerated significantly. These developments have transformed human life, making activities easier as technology continues to offer convenience through its sophistication, efficiency, and effectiveness. Indonesia has entered a new phase in the realm of information and communication through the internet. As a developing country, Indonesia has begun to adopt new standards for managing various communication systems via digital platforms, including information exchange, data transmission, and online transactions. In response to the legal challenges frequently faced by parties in the delivery of information, communication, and/or electronic transactions—especially those related to evidence involving acts conducted through electronic systems—the Government and the House of Representatives enacted the Electronic Information and Transactions Law (ITE Law) in 2008. This law marked a significant step forward for the government in providing online information services that comply with several essential criteria of information governance. The ITE Law was heavily influenced by the legal systems of European and American countries, as rapid technological developments in these regions had a major impact on legal evolution globally. The increasing use of the internet in Indonesia led to the establishment of the ITE Law as an embodiment of society's aspirations to regulate digital interactions in accordance with Indonesian values and social norms. Indonesia has, in some ways, set aside exclusive reliance on the Criminal Code (KUHP) by implementing the concept of a “Living Law,” in line with the theory of Sociological Jurisprudence and the legal principle of *lex specialis derogat legi generali*. Accordingly, all criminal acts committed in cyberspace may be sanctioned under the provisions of the ITE Law. This theory emerges from societal realities and is resolved through the wisdom of the community itself. Dispute resolution mechanisms must therefore be established to address legal issues arising from the ITE Law, especially considering that criminal sanctions serve as the last resort when society cannot obtain redress and when an electronic act causes public harm. In Indonesia, the enactment of Law Number 11 of 2008—consisting of 13 chapters and 54 articles—laid the legal foundation for electronic information and transactions. With the increase in electronic transactions, a legal umbrella was necessary, and this was fulfilled through the promulgation of the ITE Law. The ITE Law is widely perceived as Indonesia's cyberlaw,

intended to regulate all aspects of digital interactions (the digital realm), including the imposition of strict sanctions on perpetrators of cybercrime. In various scholarly works, cybercrime can be categorized from two perspectives (R.S. Wahono, 2024):

- a) Crimes that Use Information Technology as a Tool: Piracy, pornography, credit card forgery/theft, email fraud, spam emails, online gambling, theft of internet accounts, terrorism, hate speech, misleading websites, and other similar offenses.
- b) Crimes that Target Information Technology Systems: Theft of personal data, creation/distribution of computer viruses, hacking or breaching websites, cyber warfare, denial of service (DoS) attacks, domain name-related crimes, and other similar offenses.

Legal violations in electronic transactions and digital acts in cyberspace have become a concerning phenomenon, as various activities—such as carding, hacking, cracking, phishing, virus dissemination, cybersquatting, pornography, and online gambling—use information technology as tools and have increasingly become part of cybercriminal activities. The Electronic Information and Transactions Law (ITE Law) provides significant benefits, including ensuring legal certainty for the public engaging in electronic transactions (Bambang, 2024).

4. Technology in Election Administration

Digital technology provides greater efficiency across various sectors, including election administration. The use of technology significantly facilitates the work of election management bodies. The reasons many countries adopt technology in elections are generally based on several considerations, namely:

1. Minimizing technical errors in the voting process, as election technology is expected to reduce the number of spoiled ballots caused by human error;
2. Providing convenience for voters in exercising their voting rights;
3. Enabling a more effective election process, thereby reducing the potential for electoral fraud;
4. Ensuring faster and more accurate vote counting; and
5. Reducing long-term election costs.

There are four key dimensions that form an integral part of the use of digital technology in elections. First, the technological dimension, which enables the transition from conventional election systems to more modern ones, including the use of electronic machines for voter registration, polling station management, voter document administration, and other related processes. This dimension also concerns the extent to which voters are able to use the technology and how accessible it is to them, particularly for voters with disabilities. Second, the legal dimension, which examines how electoral codes are designed to allow voters to

cast their ballots electronically, as well as the legal framework that governs the entire election process—from upstream to downstream—through digitalization. Third, the social dimension, which relates to the level of voter understanding regarding how election technology works. This dimension asks whether voters are able to operate the technology without difficulty. This is important because failures in technological literacy are closely linked to citizen trust. Trust is vital in elections, as it is the foundation of legitimacy. Finally, the political dimension, which considers whether election technology influences citizen participation, whether election results can be trusted, and whether the system and its processes meet legitimacy criteria such as auditability, evaluation, certification, transparency, and accountability. The most crucial question is whether society perceives technology as a tool that benefits democracy and to what extent election technology contributes to improving the quality of voting. The use of digital technology in elections does not eliminate the fundamental principles of election administration, particularly the principles of *free and fair elections*. Therefore, any form of election technology adopted must uphold these electoral principles. Several requirements must be fulfilled in the use of election technology, especially regarding administrative and operational objectivity, namely:

1. Accountability and integrity—the technology must be easy to access, physically secure, ensure data security, provide data backup, and be certified and standardized;
2. Focus on the election process, ensuring that election management bodies are not overly burdened with technical matters related to the technology;
3. Inclusivity, ensuring that the technology provides equal access throughout the electoral process, including for voters with special needs; and
4. Selecting appropriate technology based on a thorough needs assessment.

The classification of the main types and categories of election technology is as follows (Russell, M & Zamfir, I, 2018):

1. **Voter registration system**, which refers to election technology used to verify voter data, detect duplicate voters, manage voter identity documents, target voter information, plan election logistics, and produce voter lists based on demographic information.
2. **Voter identification system**, which is used to verify the eligibility of each voter at the polling station by comparing their identity with the voter information database.
3. **Party and candidate registration system**, which is used for the registration of political party candidates, including ensuring compliance with requirements, managing candidate data, and providing the appropriate format for ballot design.
4. **Observer registration and accreditation systems**, which are used to oversee the accreditation process for both national and international election observers by validating required documents.

5. **Districting and boundary delimitation systems**, which utilize geographic information systems (GIS) to determine the boundaries, size, and extent of electoral districts.
6. **Electronic voting and vote-counting systems**, which are used during the stages of vote casting and vote counting.
7. **Result tabulation and transmission systems**, which are used for the tabulation and transmission of vote totals.
8. **Results publishing systems**, which are utilized to visualize election results in various formats.
9. **Voter information systems**, which provide election-related information to voters.
10. **E-learning systems**, which are used to support the professional development and capacity building of election management body staff.

From this explanation, it is evident that public trust becomes a crucial aspect in the use of election technology. Suspicion of maladministration and electoral fraud leads citizens to doubt the accuracy of election results, ultimately reducing the legitimacy of the elected government (Norris, P., 2014). Ideally, election technology is expected to enhance the level of trust in elections and increase citizen participation in the electoral process. Technology can serve as a tool to mitigate electoral fraud and minimize public distrust (Kersting, N., & Baldersheim, H., 2004). Globally, many countries have begun adopting e-voting technology in elections. However, the implementation of e-voting in the Netherlands encountered various issues and even faced public rejection, resulting in declining trust in the system. Once public confidence is lost, it becomes difficult to restore it. Without adequate public support, the legitimacy of elected legislators or leaders will inevitably diminish. Therefore, it is important to recognize that the successful implementation of e-voting in one country does not automatically mean it is suitable for another (Loeber, L., 2008). The success of e-voting implementation depends not only on public trust in the government, but also on trust in the companies that supply the voting machines. If the government or the companies involved are perceived to be affiliated with a particular party or candidate, the use of voting machines is likely to trigger suspicion of electoral fraud. In the Netherlands, there has been a growing trend of declining public trust—not only regarding e-voting, but also other technological solutions. A recent example is the government's attempt to introduce a chip card system as a payment method for public transportation, replacing the current paper-based system. Many people feared that this could threaten travelers' privacy, especially after experts demonstrated that the card could be hacked and its contents accessed (Loeber, L., 2008). The implementation of digital transformation in elections is an information system model designed to optimize the administration of the 2024 Simultaneous Elections. This transformation serves as a response to the issues that emerged during the 2019 elections. It must be understood rationally that digital transformation does not imply a complete and immediate shift of the entire

electoral system; rather, it should be viewed as an initial step—a gateway—to a comprehensive digitalization of Indonesia's electoral system

B. Constraints in the Use of Sirekap in the Implementation of Elections in Indonesia

Sirekap also encountered various challenges during the implementation of the 2024 General Election, particularly those related to technical issues. Several regions reported internet connectivity disruptions that hindered the data transmission process. In addition, the system experienced crashes and bugs that prevented recapitulation data from being input accurately and in a timely manner. These problems indicate that Indonesia's technological infrastructure—especially in remote areas—still requires significant improvement to support the reliable implementation of an electronic recapitulation system.

The lack of training for election officers on how to use Sirekap also became a major issue. Many officers did not fully understand the operating procedures of the system, resulting in data-input errors and other technical mistakes. This suggests that training and dissemination programs need to be strengthened to ensure that all election officers are capable of using Sirekap correctly.

Although Sirekap is intended to improve transparency, public trust in the system remains a challenge. Several alleged fraud cases involving electronic data manipulation surfaced, triggering public distrust toward election results generated through Sirekap. Public confidence must be strengthened through transparency in system operations and by providing broader access to information for the public. Oversight of Sirekap's use also requires improvement. Weak supervision creates gaps that can potentially be exploited for electoral fraud. Clearer and stricter regulations concerning the use of technology in elections are needed to ensure the integrity of the electoral process.

Preparation for the Use of Sirekap in the 2024 Regional Elections (Pilkada), Preparing the use of Sirekap for the 2024 Pilkada requires comprehensive and well-structured measures. First, improving technological infrastructure must be a top priority. All regions, especially remote areas, must have access to stable and high-speed internet. Second, the provision of reliable and up-to-date hardware and software is essential to ensure that Sirekap operates optimally.

Third, comprehensive system development and testing need to be conducted. Improvements and enhancements based on previous evaluations must be implemented, followed by large-scale system trials to ensure that Sirekap can function under various network conditions and environments.

Training and education also play a crucial role. Intensive training programs for election officers should include the use of hardware and software, vote recapitulation procedures, and troubleshooting technical problems. Public education about how Sirekap works and its benefits is necessary to build public trust in this new system.

Security and oversight must be strengthened by implementing robust cybersecurity measures such as data encryption, multi-factor authentication, and real-time network monitoring. Independent public oversight is also important to ensure system integrity.

Furthermore, detailed technical guidelines must be provided to election officers to ensure uniform and effective implementation of Sirekap. Regular election simulations and continuous evaluations after each simulation and election are required to test system readiness and identify potential issues for improvement.

With thorough preparation in terms of infrastructure, system development, training, security, regulation, and evaluation, the use of Sirekap in the 2024 Pilkada is expected to run successfully and improve the quality of elections in Indonesia.

The use of Sirekap in the 2024 Pilkada represents a strategic step toward enhancing transparency and efficiency in the electoral process. Despite various challenges, such as technical problems and public distrust, continuous improvements are being made to ensure its success. The KPU must demonstrate its commitment to improving the system's quality and providing adequate training for election officers.

Through its oversight function, Commission II of the House of Representatives (DPR RI) can ensure that Sirekap is used effectively and efficiently by requesting regular reports on the progress of its implementation, the evaluation of system trials, and ongoing improvement measures. Commission II must also encourage the KPU to regulate the technical details of Sirekap's use, establish training standards for officers, and develop supervision mechanisms and comprehensive audits to ensure the integrity and transparency of Sirekap.

Additionally, through its budgetary function, Commission II must ensure that sufficient funding is allocated for the development and maintenance of Sirekap, including the provision of necessary technological infrastructure across all regions, particularly in remote areas.

CONCLUSION

The Republic of Indonesia Law Number 19 of 2016 concerning Amendments to Law Number 11 of 2008 on Electronic Information and Transactions (Supplement to the State Gazette of the Republic of Indonesia Number 5952) regulates the use of information technology in accordance with statutory provisions. Article 40 of this law stipulates that the Government shall facilitate the utilization of Information Technology and Electronic Transactions in accordance with applicable laws and regulations.

Sirekap Pemilu is an abbreviation for the Election Recapitulation Information System. This system was developed by the General Election Commission (KPU) as a tool to assist in the vote-counting process. Referring to KPU Decree Number

66 of 2024, Sirekap is defined as an information technology-based application used as a means for publishing vote-counting results and facilitating the recapitulation process.

However, Sirekap faced various challenges during the 2024 General Election, particularly those related to technical issues. Several regions reported internet connectivity disruptions that hindered the transmission of data. Additionally, system crashes and software bugs occurred, resulting in recapitulation data being inaccurately recorded or unable to be input in a timely manner. These issues indicate that Indonesia's technological infrastructure—especially in remote areas—still requires significant improvement to support the reliable implementation of an electronic recapitulation system.

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