



# Implementing “SIREKAP” Application Based on Election for Improving the Integrity of Election Administrators and Increasing Public Trust

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**Abstract.** The application of ICT development does not occur in administering governance administratively and in political administration in general election techniques. This study aims to elaborate on using information technology in implementing the 2020 Election for governors, regents, mayors in Indonesia, which was held in 270 regions. This research method used a qualitative descriptive method. This study's findings are that the use of SIREKAP has benefits in maintaining the principles of transparency and integrity of election administrators. Using ICT in general elections plays a role in improving the integrity of election administrators and increasing public trust in the election results. The Indonesian General Election Commission (KPU) made innovations through the SIREKAP (Recapitulation Information System) application, a form of transparency in the implementation of vote counting and recapitulation of vote count results which are carried out in stages starting from the TPS level to the Regency/City/Provincial KPU.

**Keywords:** Election · E-Government · SIREKAP

## 1 Introduction

In practice, ICT has started to play an essential role in all areas of human life, including the political process, the mechanism of participation in elections, provision of legitimacy, technological solutions, and efficient application in the e-voting process [1]. One of the essential tools used in political and administrative settings is applying applications, where ICT tools are used to facilitate the voting process for representative elections and decision making [2]. The world's democratic countries will benefit from developing a safe election application system to increase voter participation and trust and prevent election fraud [3]. Election implementation supported by electronic applications provides accuracy and efficiency in the election process [4].

Elections around the world are going digital, governments are starting to adopt regulations to regulate the use of technology in the election process, playing a role in protecting the integrity of elections [5]. As the fourth most populous country globally, Indonesia has national presidential and vice-presidential elections held every five years in Indonesia; the method used in Indonesia's elections is voting conducted by the General Election Commission (KPU) [6]. General elections in Indonesia are held simultaneously in 2020, and the KPU (Indonesian General Election Commission) is making digital innovations in increasing the quality of elections. This innovation was carried out by applying the SIREKAP application (recapitulation information system) (Kompas, 2019). The application of Sirekap has been regulated in several KPU Regulations (PKPU), including the latest revisions such as PKPU Number 18 of 2020 and PKPU Number 19 of 2020 (Tirto, 2020).

Applying applications in a free, transparent and fair electoral system is essential to correct fraud in the old electoral system [7]. The increasing use of technology, especially in online data storage with cloud systems, has made data security one of the essential needs for users [8]. Implementing the ideal e-voting system will allow users to go online, use a web browser or phone application, enter their credentials and votes to create the effectiveness and accountability of the election administration [9]. The implementation of the use of application systems in general elections carried out in Jordan uses an established e-government adoption model and a theoretical framework consisting of the diffusion of innovation (DOI) theory and the technology acceptance model (TAM) [3]. However, such an application's integrity and the image will not be preserved unless security and authenticity measures are strictly implemented in realizing the implementation of free and fair elections [10].

This research focuses on applying ICT development in the SIREKAP application model in election in Indonesia in 2020. Also, two questions will be answered in this study. Democracy as a whole. Q2: How the application of SIREKAP can increase public trust in the election result.

## 2 Literature Review

As elections worldwide go digital, governments are starting to adopt regulations to regulate the use of voting technology and protect the integrity of elections (Essex & Goodman, 2020). The world's democracies will benefit from using ICT in general elections, which can create security not only to increase voter participation and trust but also to prevent fraud in elections [3]. The use of applications in the general election system as a complex information-communication technology innovation can create social trust at the institutional level and political cohesion at the national level [11].

## 3 Method

This study focuses on looking at the function of ICT development in applying applications in general elections in Indonesia. Researchers in conducting research using a descriptive qualitative approach. This research data is implementing the SIREKAP application in the 2020 election in Indonesia, which was held in 270 regencies, cities

and provinces. Also, the analysis stage is presented descriptively in the observation findings of the SIREKAP function, then its role is seen in improving the integrity of the implementation of the election.

## 4 The References Section

The election process in Indonesia has progressed in its implementation using Information and Communication Technology development. The development of application-based and website-based SIREKAP service models plays an essential role in improving the quality of democracy. For the first time, the electronic vote recapitulation or SIREKAP information system is used in the 2020 election. Guidelines for using the SIREKAP application are prepared by the General Election Commission (KPU) and addressed to the General Election Commission, Provincial General Election Commission, Regency / City General Election Commission, and the organizing body. Ad hoc, to monitor the use of SIREKAP at the stage of vote counting and recapitulation of vote acquisition results (Table 1).

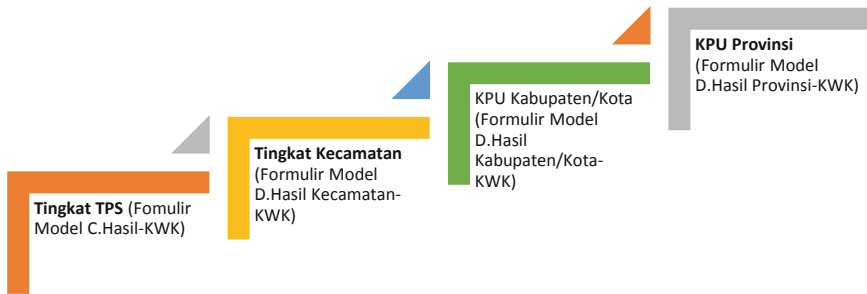
**Table. 1.** Comparison of SIREKAP Mobile and SIREKAP Website

SIREKAP Mobile	Doing photos, send, and checking the suitability of reading the application form C.Hasil KWK Model
	Generates digital copy C.Hasil KWK Model form to be submitted to the PPS and Regency City
	Produce the data count votes in the polling stations as publication data quick count by Regency/City KPU
SIREKAP Web	A tool for the recapitulation process of vote counting in stages at the District, Regency/City and Provincial levels;
	Monitor the recapitulation of Vote Count Results data in stages at the District, Regency/City and Provincial level
	Produce Forms Model D.Hasil Kecamatan-KWK, Model D.Hasil Kabupaten/Kota-KWK, and Model D.Hasil Provinsi-KWK
	Results Record disputes and results in dispute

The SIREKAP application in its implementation can be accessed via a smartphone and based on a website. The input process's technical implementation is carried out via a smartphone-based on the recapitulation of votes at each voting location. Also, the SIREKAP website's role is to verify the results of the recapitulation of vote processing at each level. Recapitulation of data on the results of election results has a recapitulation stage for data verification (Table 2).

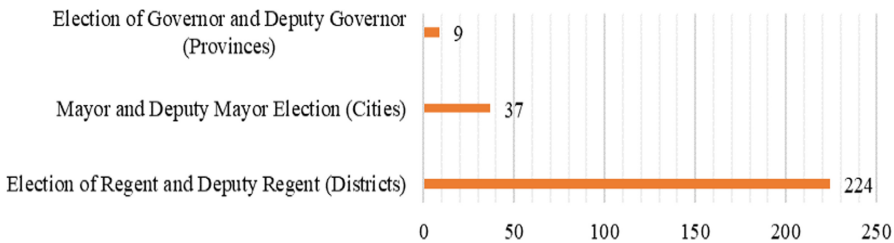
The stages in implementing the recapitulation of data import in the SIREKAP system have four stages. In each stage, the data input is verified through the official website accessed by the KPU Commissioner. I am first reading the votes acquired at the polling station level as stated in C. Results-KWK. Second, the means to tabulate or add up the

**Table 2.** Classification process comparison SIREKAP



votes acquired at each level of the recapitulation. Third, the means for sending the results of the vote acquisition at every level starting from KPPS to PPK, PPK to Regency/City, to Regency / City to Provinces. Fourth, to publish the vote acquisition.

Moreover, fifth, of course, is a means of control and to cut the chain of manipulation of the vote recapitulation that occurs in stages. Also, verification of each stage is proven by a meeting of each stage's full results and agreed upon through the results of an official report. The recapitulation results in the SIREKAP system at the Election in Indonesia in 2020 were held in 270 regions that were divided into each type of election (Fig. 1).

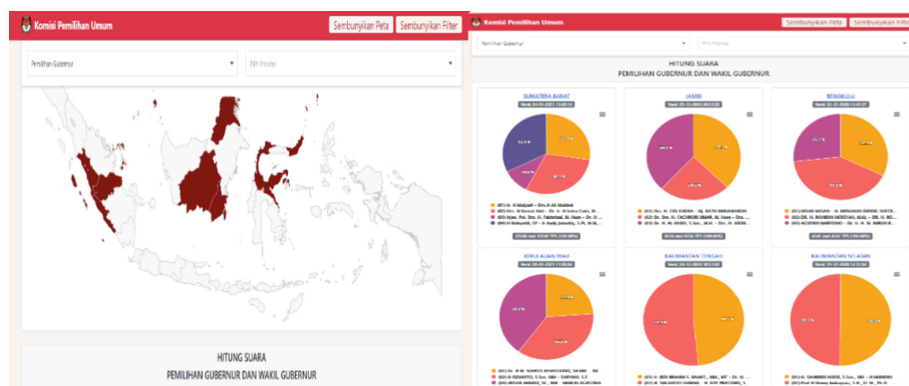


**Fig. 1.** Distribution of types of election of 2020 recapitulation

The implementation of elections in Indonesia is a big challenge; where the population is large and the locations are divided in a not centralized distribution, election results are often a big problem. Through SIREKAP, the recapitulation of results can be integrated and prevent fraud from election organizers. The results of SIREKAP in a position of legitimacy have official strength, where the results of the recapitulation of each stage of SIREKAP must be attached with proof of approval of the minutes of plenary meetings at each level (KPU, District, City and Provincial). The recapitulation results will automatically be included in the recapitulation big data that is integrated nationally so that the public can directly access the transparency of the 2020 Election in Indonesia.

The national recapitulation (<https://pilkada2020.kpu.go.id/#/pkwkp>) as a complete display of the infographic recapitulation results of the acquisition of candidate pairs in all regions. Technically, SIREKAP facilitates the public in monitoring and supervising

the progress of general elections. Also, with SIREKAP, the results of general elections can be known more quickly, where previously the public had to wait until evening, but through SIREKAP, the public can see the election results in an updated manner (Fig. 2).



**Fig. 2.** National SIREKAP page

The infographic on the national recapitulation results through SIREKAP can be used as an inventory of the results of the general election digitally. Election results through SIREKAP can be easily accessed about election results at the cumulative final result level or up to the initial polling station level. The use of SIREKAP in general elections, the utilization of ICT Information Communication Technology in organizing Elections in Indonesia has excellent benefits (Table 3).

**Table 3.** Comparison of SIREKAP and Manual recapitulation uses

Comparison of Manual and Digital	
Recapitulation Manual	Recapitulation Digital Recapitulation
Writing the C1 form by copying the results and voting results from C Plano is more complicated than counting ballots	The Sitemap application is intended to make it easier for KPPS because all the voting results documents are written into a single form coded Model Form C. Result-KWK
KPPS officers must fill in the C1 form by hand and put a wet signature	This method is expected to prevent irregularities and manipulations in the recapitulation process
The rewriting process has the potential to make mistakes so that the numbers recorded can vary	
Manual recapitulation and the large number of C1 forms that had to be filled in often confused KPPS officers	
The differences in the numbers on the C1 Forms could have occurred due to human error to unintentional	

The SIREKAP application is different from the Counting Information System used in previous elections, which focused on publishing election results only. SIREKAP has a more significant function in the aspect of publication but functions to count votes and tiered vote recapitulation. Comparison of the old system built by the KPU using (SITUNG) the implementation stage of the C1-KWK form as the election results at the TPS was scanned (scanned) then published on the KPU's official page. The application of technology in SIREKAP uses optical character recognition (OCR) and optical mark recognition (OMR) technology where form C.Hasil-KWK at TPS are designed to be read by the system by photographing form C.Hasil-KWK via mobile phone with the Sirekap application installed so that each KPPS member must photograph the results of the manual counting of votes acquired by each pair of candidates as outlined in form C.Hasil-KWK via their respective cell phones.

Four problems must be handled in the development of the SIREKAP application. First, technology, Sirekap infrastructure such as gadgets, the readiness of human resources (HR) or ad hoc election organizers, in this case, polling group officials (KPPS), and most importantly, the legal framework. According to Heroik, the use of technology in elections must be well prepared, inclusive, and with sufficient time.

## 5 Conclusion

The use of the SIREKAP application in the 2020 elections in Indonesia has had a significant impact. The application of ICT in general elections can be used as election administration to improve election quality principles (accountability, transparency and fairness). Also, the development of ICT in general elections can be a solution related to fraud prevention.

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