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# THE EFFECTIVENESS OF THE VOTER DATA INFORMATION SYSTEM IN THE 2019 SIMULTANEOUS GENERAL ELECTION IN BELU REGENCY

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## ABSTRACT

This research aimed to identify and describe the effectiveness of the Voter Data Information System (*Sistem Informasi Data Pemilih - SIDALIH*) in the 2019 General Election in Belu Regency. This research used the qualitative method. This research was conducted at the Regional Election Commission Office (*Komisi Pemilihan Umum Daerah - KPUD*) of Belu Regency and related to using SIDALIH. This research focused on the effectiveness of SIDALIH at the input, process, and output stages. Informants were determined by the purposive technique. Data collection was carried out by interviews, documentation, and observation techniques. Data analysis was conducted using techniques proposed by Miles and Huberman. The triangulation technique was used for data validation. The results showed that the use of information systems in the election stage was quite ideal for answering the effectiveness of SIDALIH. Periodic updates to SIDALIH make this system classified in the enabler category. There is always a need to utilize information systems in general and regional elections. This is because general and regional elections involve millions of voters with a complicated data collection system and an extensive database, which require an effective and efficient information system.

## KEY WORDS

Effectiveness, system, information system, general election.

Electronic systems and information technology have been used in the election, especially in the 2019 simultaneous election. This system is used to collect all voter data in Indonesia. General Election Commission Regulation (*Peraturan Komisi Pemilihan Umum - PKPU*) Number 11 of 2018 Article 1 states that "Electronic systems are a series of electronic devices and procedures to prepare, collect, process, analyze, store, display, announce, transmit, and/or distribute electronic information". The electronic system and information technology are called SIDALIH. Election administrators use SIDALIH to compile, coordinate, announce and maintain voter data. The General Election Commission (*Komisi Pemilihan Umum - KPU*) must ensure that all voters have gone through the mechanism for updating and compiling the voter list to produce a high-quality voter list.

SIDALIH began to be used after the 2009 election because there was an issue with voter data that attracted public attention in that year. The problem of the voter list occurred and became a debate in the 2009 election because KPU did not have a centralized database and used only Excel files. As a result, election disputes and various other election problems occur because no system guarantees the safety of storage and accuracy of voter data. The issue in the 2009 election prompted using SIDALIH in the subsequent election.

The information system and technology used in the data updating process have three functions, namely: (1) data processing (consolidation, synchronization, cleaning); (2) data delivery to KPU and vice versa; and (3) distribution (publication) of voter lists. SIDALIH is expected to be able to assist KPU at various levels by carrying out these three functions. In the consolidation function, SIDALIH must support the work of KPU to strengthen the sources of voter data originating from the Permanent Voter List (*Daftar Pemilih Tetap - DPT*) from the Latest Election. In the data updating function, SIDALIH is expected to assist KPU in maintaining and ensuring data validity. For the publication function, SIDALIH is used to open public access to voter data information (Jurnal Pemilu Demokrasi, 2012).

SIDALIH has been very useful in the general election. However, the effectiveness of this information system technology is questionable because there are still shortcomings and problems in its application, including: (1) data sources that do not follow the format used; (2) features that are still difficult to use and incomplete; (3) the information of regional expansion that has not been renewed; (4) slow data entry; (5) server capacity that is not yet maximized to accommodate existing voter data; and (6) lack of human resources. Although the election administrator has made many efforts to improve the system, it should be acknowledged that there are still various problems related to voter data (lists) until this day. In this regard, seeking solutions through research or scientific studies is necessary. On this basis, this research was conducted to determine the effectiveness of SIDALIH and identify factors supporting its effectiveness. This research is based on the scientific belief that poor data management and an ineffective information system can result in invalid voter data.

Voter data is a central element in the election process because it encourages the utilization of SIDALIH. Data input and processing are an integral part of the output. *Input, process,* and *output* verify each other in SIDALIH, where the output in the form of election participation figures describes the input and process of high quality. On the other hand, if the input and process of election data are not of high quality, then it is impossible to produce high-quality election output, and it even has the potential to cause fraud which can lead to election disputes.

Based on the above background, we were interested in conducting the study. The research aimed to identify and describe the effectiveness of the Voter Data Information System (*Sistem Informasi Data Pemilih - SIDALIH*) in the 2019 General Election in Belu Regency.

## LITERATURE REVIEW

Emerson (in Handayaningrat, 1994) states that "effectiveness is a measurement in the sense of achieving predetermined goals." Hidayat (1986) explains that "effectiveness is a measure that states how far the target (quantity, quality, and time) has been achieved. The greater the percentage of targets achieved, the higher the effectiveness". Steers (1985) argues that effectiveness is the extent of the effort of a program as a system with specific resources and means to fulfill its goals and means without crippling the means and resources and without putting undue pressure on its implementation. On the other hand, according to Gibson (1996), effectiveness is the achievement of agreed goals and objectives to achieve common goals. The level of goals and objectives indicates the level of effectiveness. The achievement of these goals and objectives will be determined by the level of sacrifice that has been made. Siagian (2001) states that "effectiveness is the use of resources, facilities, and infrastructure in a certain amount that is consciously determined beforehand to produce a number of goods for the services it carries out". Effectiveness shows success in terms of whether or not the targets have been achieved. The closer the activity results to the target, the higher the effectiveness. Effectiveness can be measured by comparing the determined plans with the actual results. However, if the effort or the results of the work and actions taken are not appropriate, which makes the goals not achieved, then it is said to be ineffective.

Measuring effectiveness is not straightforward because effectiveness can be studied from various perspectives and depends on who is assessing and interpreting the matter. If viewed from a productivity point of view, then a production manager defines effectiveness as the quality and quantity of output of goods and services.

From the discussion above, efforts are needed to ensure the principles of effectiveness in its implementation. The concept of effectiveness is one of the determining factors of whether or not making significant changes to the form and management of the organization is necessary. In this case, effectiveness is defined as achieving organizational goals by efficiently using available resources viewed from the input, process, and output stages. This relates to the availability of personnel, facilities and infrastructure, and the methods and models used.

**Voter Data Information System**

Voter Data Information System (SIDALIH) is an "electronic system and online-based information technology used to support the work of election administrators in compiling, coordinating, announcing, and maintaining voter data" (PKPU Article 1 Point 46). Rozitra (2017) mentioned that voter data information system is a computer-based information system used by KPU to assist officers in updating and compiling voter lists. SIDALIH has four functions: socialization, duplicate data detection, continuity of the previous election data with the next election, and data recording. Cahyaningsih (2012) argues that SIDALIH in the election was developed so that it can be used by the Voting Committee (*Panitia Pemungutan Suara - PPS*), PPK (*District Election Committee* - PPK), Regency or Municipal and Provincial KPU officers to update and compile a computerized voter list without the need to cut voter data and group it manually into Voting Place (*Tempat Pemungutan Suara - TPS*). SIDALIH performs the CRUDE (create, read, update, and delete) function in updating voter data. In addition, SIDALIH publishes voter lists online on the website of Provincial and Regency/Municipal KPU. SIDALIH also has a monitoring feature that greatly assists KPU in monitoring the process of preparing the voter list, providing information on the results of data analysis nationally in the form of potential duplicate voter data and invalid voter data.

SIDALIH is developed based on the internet (web), which is single and centralized on the KPU server. Each Provincial KPU and Regency or Municipal KPU is only given access to process and update data in their respective working areas during the voter data updating stage. Operators run SIDALIH in each Provincial and Regency or Municipal KPU; it can also involve PPK members as operators at the sub-district level. Data can be updated not only by using the internet but also by using a spreadsheet, such as excel, with a format adapted to the needs of the SIDALIH application.

In implementing SIDALIH, KPU has encountered several obstacles, including limited internet network infrastructure and electricity networks in several regions of Indonesia. Another obstacle is the limited number and quality of human resources which act as SIDALIH operators. In addition, there is limited time available to compile the voter list, which impacts the high frequency so that data entries often fail.

The legal basis for using the voter data information system is regulated in Article 218 of Law Number 7 of 2017, which states: (1) KPU, Provincial KPU, and Regency or Municipal KPU in providing voter data, Temporary Voter List (*Daftar Pemilih Sementara - DPS*), and DPT lists have a voter data information system that can be integrated with the population administration information system; (2) KPU, Provincial KPU, and Regency or Municipal KPU are obligated to maintain and update voter data as referred to in paragraph (1); and (3) PKPU shall regulate further provisions regarding the voter data information system.

## METHODS OF RESEARCH

This research used the qualitative method. This research was conducted at the Regional Election Commission Office (*Komisi Pemilihan Umum Daerah - KPUD*) of Belu Regency and related to using SIDALIH. This research focused on the effectiveness of SIDALIH at the input, process, and output stages. The informants were determined by purposive technique: Chairman of Belu Regency KPU, Commissioner for Programs and Data, Commissioner for other divisions, SIDALIH Operators, PPK, PPS, and community. Data collection was carried out by interviews, documentation, and observation techniques. Data analysis was conducted using techniques proposed by Miles and Huberman (2007). The triangulation technique was used for data validation.

## RESULTS AND DISCUSSION

### Input, Process, and Output Stages in Voter Data Information System

Turban (2005) states that a system is a set of interconnected elements, tools, people, rules, and regulations that form an integral unit to achieve a common goal. He also defines a system as a collection of people, resources, concepts, and procedures expected to form a

function or serve a purpose. A system is divided into three major parts: input, process, and output. *Input* includes the entire process, including all the elements needed to convert or transform the input into the output contained in the process, namely data pairing, categorization, and analysis executed by the software. *Output* is the final product or consequence of a system, namely the collection of accurate voter data. As explained by experts, a system is an element that is interdependent with one another to achieve a goal, both technology in a system and users. In the effectiveness of the input and process stages, the role of HR is vital in operating SIDALIH.

Interviews with PPS at Kota Atambua showed that the lack of community participation in registering as ad hoc officers was due to the small salary not following the workload they handle. As a result, some PPS members resign from the position. Ad hoc officers are essential in the data updating stage; community participation is needed even at the expense of a small salary. KPUD of Belu Regency also needs to review the salary for ad hoc officers and SIDALIH operators so that they can improve their performance according to their workload. This is in line with research conducted by Nisa (2006) that every company wants high-performing employees because it will encourage the company's development. Employees with high performance will show good work results, while employees with low performance will show poor work results. High performance can be obtained by several factors, one of which is rewards. This reward is used by the company to attract quality human resources and is also why workers stay in the company.

Information system facilities and equipment are essential in supporting the three stages: input, process, and output. Based on interviews with SIDALIH operators, the needs and availability of work equipment at KPUD of Belu Regency, such as computers and Wifi, are adequately fulfilled. The results of observations also support what was stated in the results of the interviews. Each operator at KPUD of Belu Regency can input voter data on their respective computers and access the internet network according to the need for updating voter data. This shows that the information system facilities in KPUD of Belu Regency are adequate. This is in line with Purwandani et al. (2012), showing that information technology infrastructure is an essential element in the application of information systems because it acts as a tool in its implementation. Without a supporting infrastructure, an electronic government service cannot be created. Many implementations of information systems fail due to inadequate infrastructure.

One of the critical factors in supporting the effectiveness of SIDALIH is the availability of human resources. If the available human resources cannot carry out their duties and responsibilities properly, this will become an obstacle and lead to the ineffectiveness of SIDALIH. To add, the human resources which directly process data on SIDALIH are SIDALIH operators at KPUD of Belu Regency. Therefore, the readiness of human resources, especially in the IT field, must be a priority in implementing an information system (Nur, 2014).

The results of an interview with one of the commissioners showed that PPK was not allowed to access the SIDALIH account at KPUD Belu Regency because KPUD Belu Regency operators control all stages of inputting the voter data. The account for PPK is prepared to support the data entry stage, which is the task and responsibility of the PPK. This shows that KPUD Belu Regency doubts the PPK's human resources processing data on SIDALIH. PPK is not allowed to access SIDALIH directly, and it is handled by SIDALIH operators instead. The increased workload on SIDALIH operators is also an obstacle to effective SIDALIH processing. This is in line with interviews done with the operators. They also often helped with the work of colleagues from other divisions so that before the election, there were additional 3 operators to help process data on SIDALIH. This shows the lack of human resources in managing voter data.

In inputting and processing the system, adequate human resources and information technology are needed to support the work stages to produce the expected output. The image below shows a series of steps in the *input* stage that affect the *process* stage so that it can produce the expected *output*.
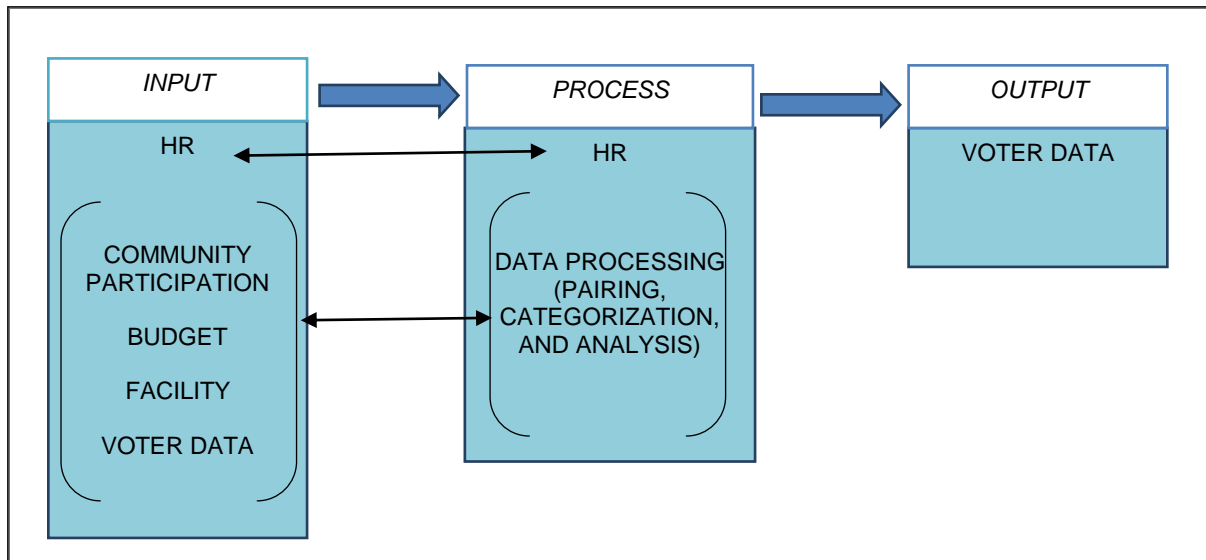
Figure 1 – Series of Input, Process, and Output Stages

Output in SIDALIH produces valid voter data, but its results are influenced by the input and process stages. These three stages are a single unit that will produce information expected to be under the series of procedures. The success of the data input stage in SIDALIH is supported by human resources, community participation, budget, facilities, and voter data. The process stage relies on sophisticated data processing software, including data pairing, categorization, and analysis. Input and process stages influence each other to produce output.

The input stage is inseparable from the role of human resources, which are important actors in every stage in updating voter data, who deal directly with the community or as users in running the information system, both as SIDALIH operators and registering as ad hoc officers with minimum fees compared to the workload handled. The community must be encouraged to be more active in checking names and self-registration (for those not registered with the DPT). Thus, the administrators can collect valid update data. Network capacity is also important in this stage because an unstable network can affect the input stage due to failures in data uploading. This condition causes data accumulation or data imbalance in the system. In the process stage, the relationship with the input stage is still visible, where the process stage requires human resources, who are expected to work carefully and seriously to process data from Microsoft Excel to SIDALIH so that the system can execute the data, both in pairing, categorizing, and analyzing data that are related to the input stage.

If human resources as ad hoc officers carry out their overall duties well, then the stages of pairing, categorizing, and analyzing data executed by the system will be easier. Thus the output on SIDALIH can be better than the results found in the present study of 94.80%, as seen from the significant changes in the plenary results and the determination of the DPS to Second Revision of Permanent Voter List (*Daftar Pemilih Tetap Hasil Perbaikan 2 - DPTHP2*).

Factors influencing the effectiveness at the output stage up to 94.80% is the periodic time division by KPU of the Republic of Indonesia to input the data into the system to answer the inadequate network problem resulting in failed data uploads. In addition, the slow server and data consolidation from the Ministry of Home Affairs and periodic SIDALIH updates have resulted in features considered very helpful and more sophisticated. On the other hand, the effectiveness of the output stage will decrease if the performance of human resources for ad hoc officers and SIDALIH operators gets worse than before, the public is increasingly indifferent to the stages of data updating, and poor network capacity. Factors inhibiting the effectiveness of SIDALIH consist of:

a. Management of tiered data updating has not been applied consistently. The tiered data management from the district level to KPUD of Belu Regency seems improperly handled because at the district level, the work that PPK should have done to access several features on the system is handled and carried out by SIDALIH operators. At KPUD Belu Regency, SIDALIH operators also work in helping other divisions so that the operator's workload increases and disrupts their focus. If the time for determining the DPT is urgent, SIDALIH operators will be assisted by colleagues outside the division regardless of their expertise.

b. There has been a lack of community participation; people are less involved in registering themselves as ad hoc officers. In addition, the community does not actively check the names in DPT. However, if their names are not registered in the DPT, they are reluctant to register.

c. The issue on the server in managing the SIDALIH application causes the data upload process to be slow. This also has an impact on the publication stage being less effective. This happened before the 2019 general election when the website to check the DPT failed. This condition often occurs at the stage of data updating before the election. SIDALIH is also considered not too responsive to detect duplicate data. The process of detecting duplicate data is slow.

Although several obstacles still affect the effectiveness of SIDALIH, this system is considered to have been very helpful at the stage of voter data updating. By utilizing adequate information technology, complicated work stages with various data categories can be directly executed by the system more easily and quickly. The factors that support the effectiveness of SIDALIH are as follows.

a. System updates: regular system updates with new and more sophisticated features on SIDALIH are very helpful during voter data updating. SIDALIH is considered to have reached the enabler stage because it has opened access to all interested parties and can be accessed online. This advantage allows public involvement to check, improve, and control data.

b. Voter data consolidation: SIDALIH can consolidate two different data: the DPT generated by KPU and the DP4 from the Ministry of Home Affairs.

c. Data updating stage: if this stage is done properly and carefully by ad hoc officers and SIDALIH operators, the data generated will produce the expected output. The inputted and processed data at SIDALIH is the data resulting from a tiered update carried out by ad hoc officers.

## CONCLUSION

Based on the results of the research and discussion above, it can be concluded that using SIDALIH as an information system in the election stage is quite ideal. Periodic updates to SIDALIH make this system classified in the enabler category. There is always a need to utilize information systems in general and regional elections. This is because general and regional elections involve millions of voters with a complicated data collection system and a large database that require an effective and efficient information system. The results of this research can be concluded as follows:

a. Supporting the effectiveness of SIDALIH at the input stage requires ad hoc officers and KPUD Belu Regency with adequate skills and integrity to carry out existing tasks to collect sufficient data to input into the system;

b. SIDALIH is considered effective at the process stage and very helpful in executing data considered invalid;

c. At the output stage, SIDALIH produces accurate and effective data with average data changes below 5%.

Based on the results and discussions above, we give the following suggestions:

a. KPUD Belu Regency must pay more attention to the workload given to each division so that the employees do not have overlapping tasks. KPUD Belu Regency is suggested to

conduct introductory activities to educate the public to improve digital literacy regularly, not only when the general or regional election is approaching.

b.  KPUD Belu Regency operators and ad hoc officers are suggested to improve the quality of work even with a limited salary.

c.  The public is always suggested to raise awareness to be actively involved and support the implementation of the general or regional election by registering as ad hoc officers or self-registering and re-checking DPT.

d.  KPU of the Republic of Indonesia is suggested to continue to update the system in SIDALIH to detect duplicate data due to regional expansion. Furthermore, KPU of the Republic of Indonesia is also suggested to increase server capacity so that the system can be easily accessed without obstacles.

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