PUBLISHED BY
JR EDUCATION

Available online at http://ijite.jredu.id

International Journal of Information Technology and Education (IJITE) 5 (3), (June 2026) 52 - 68

International Journal of Information Technology and Education (IJITE)

http://ijite.jredu.id

# Governance Analysis of An Electronic-Based Integrated Secretariat Information Management System in Election Supervision

**Aldrin A. Christian[1]*, Jetty E. H. Mokat[1], Steven V. Tarore[1]**

[1]Master Program in Public Administration, Universitas Negeri Manado, Indonesia

*Corresponding author: aldrinchristian@gmail.com

ARTICLE INFO
Article history:
Received: April 27, 2026; Received in revised form: May 19, 2026; Accepted: May 28, 2026;
Available online: June 01, 2026;

## ABSTRACT

This article analyzes the governance of an electronic-based integrated secretariat information management system, known as SIMASTER, in supporting election supervision functions at a provincial election supervisory institution. The study is grounded in the transformation of public administration toward digital governance, where information systems are expected to strengthen efficiency, transparency, accountability, and data-based decision making. A qualitative descriptive approach was used through interviews, observation, and documentation. The analysis focuses on three issues: governance of SIMASTER in supporting the supervisory function, the role of SIMASTER in carrying out election supervisory duties under Law Number 7 of 2017, and the function of SIMASTER in managing election supervision data. The findings show that SIMASTER contributes to faster reporting of alleged violations, better coordination between provincial and local supervisory structures, more systematic documentation, and more transparent monitoring of case progress. However, the system has not yet reached optimal institutional maturity because of uneven technological infrastructure, limited digital literacy among field supervisors, insufficient public outreach, and the need for stronger regulatory and strategic institutionalization. The study argues that the effectiveness of digital election supervision is not determined only by the availability of an application, but also by governance mechanisms, human resource readiness, data validity, interoperability, and public trust. The article recommends strengthening formal governance arrangements, integrating SIMASTER with other electoral systems, improving digital infrastructure in remote areas, providing continuous training, and expanding public communication so that digital election supervision becomes more inclusive, accountable, and sustainable.

***Keywords***: Bawaslu, digital governance, election, information management system, public administration, Simaster, supervision.

## INTRODUCTION

The development of public administration in the digital era has changed the way public organizations manage information, deliver services, and account for institutional performance. In democratic governance, information is not merely an administrative asset; it is a strategic resource that determines how quickly public institutions can respond to public reports, coordinate field operations, and make decisions based on evidence. Election supervisory institutions face particularly complex information challenges because they must monitor electoral stages, document alleged violations, respond to public participation, and maintain public trust in the integrity of democratic processes. Therefore, the adoption of an electronic-based information management system becomes an important component of modern public administration.

In the context of election supervision, the need for a reliable information system is closely related to the mandate of electoral governance. Election supervisors must ensure that every stage of elections is conducted according to legal norms, administrative procedures, and democratic principles. This task requires timely information from different administrative levels, ranging from sub-district supervisory personnel to provincial decision makers. Without an integrated system, supervision data may be fragmented, reports may be delayed, and decision making may rely more on personal communication than on structured institutional data. Digital transformation is therefore expected to reduce administrative fragmentation and create a more accountable mechanism of supervision.

The Integrated Secretariat Information Management System, or SIMASTER, was introduced as an innovation to connect administrative and supervisory information within the provincial election supervisory secretariat. The system is intended to integrate several service functions, including correspondence services, election supervision education, public information and data services, legal consultation, and supervision-related reporting. The system is also connected to a broader agenda called GERAK SIMASTER, which aims to strengthen active public participation in election and regional election supervision. This orientation shows that the system is not designed only for internal administration, but also as a bridge between the institution and external stakeholders.

The urgency of this study arises from the gap between the promise of digital governance and the practical conditions of system implementation. The system is expected to increase operational efficiency, transparency, and accountability; however, the implementation still faces technical and non-technical obstacles. The main technical challenges include uneven information technology infrastructure, limited internet connectivity in some areas, and the varying ability of supervisors to use digital tools. Non-technical challenges include resistance to change, limited institutional support, insufficient socialization, and the need to strengthen the position of SIMASTER in the strategic planning and internal regulatory framework of the institution.

The transformation from manual supervision practices to digital information management should be understood as a governance reform rather than a mere technological upgrade. A digital platform can be effective only when it is supported by clear procedures, competent human resources, adequate infrastructure, data protection, interoperability, and continuous evaluation. In public administration theory, digital governance requires the integration of structure, process, people, and technology (Dunleavy et al., 2006). In public service theory, the quality of service is measured not only by the availability of facilities but also by reliability, responsiveness, assurance, empathy, and tangibles (Parasuraman, Zeithaml, & Berry, 1988). These theoretical lenses are relevant for analyzing SIMASTER because election supervision is both a technical activity and a public service function.

This article aims to examine the governance of SIMASTER in supporting election supervision. Specifically, it analyzes how SIMASTER supports the main function of the election supervisory institution, how it assists the implementation of supervisory duties under Law Number 7 of 2017, and how it facilitates the management of election supervision data. The article also identifies determinant factors that influence implementation, including infrastructure, human resources, institutional regulation, data validity, system integration, and public participation. By transforming a qualitative institutional study into a journal article, the discussion contributes to the literature on digital public administration, election governance, and information system management in the public sector.

The novelty of this article lies in the integration of three analytical perspectives. First, it treats SIMASTER as a governance instrument that connects administrative support and electoral supervision. Second, it places digital information management within the legal and democratic mandate of election supervision, particularly the obligation to prevent, monitor, process, and document violations. Third, it highlights the importance of public participation and trust in the success of digital supervisory systems. Thus, the article argues that digital election supervision should not be reduced to technology adoption; it must be developed as a comprehensive governance ecosystem.

## LITERATURE REVIEW

### Public Administration and Digital Governance

Public administration is commonly understood as the theory and practice of organizing public institutions to achieve public purposes. It includes policy formulation, implementation, service delivery, coordination, and accountability. Wilson (1887) emphasized the importance of administration as the detailed and systematic execution of public law, while Goodnow (1900) distinguished between politics as the expression of the state will and administration as its execution. These classical ideas remain relevant because election supervision also involves the operational execution of legal mandates through administrative structures.

The development of public administration has moved beyond classical bureaucracy toward more responsive, performance-oriented, and citizen-centered governance. Denhardt and Denhardt (2003) argued through the New Public Service perspective that public officials should serve citizens rather than merely steer them. This perspective is important for digital election supervision because public reporting systems should not only collect data from citizens but also respect citizen trust, provide feedback, and ensure that reports are handled transparently. Digital governance must therefore be aligned with democratic values, not only technical efficiency.

Digital governance refers to the use of information and communication technology to improve public administration, public service delivery, transparency, and decision making. Dunleavy et al. (2006) described digital-era governance as a transformation that reintegrates fragmented processes, emphasizes needs-based service, and uses digital tools to redesign administrative work. In the case of SIMASTER, digital governance is reflected in efforts to integrate reporting, documentation, supervision data, and institutional coordination in one system. However, digital governance requires more than software; it requires institutional readiness and governance rules.

Good governance principles are also central to the analysis. The World Bank (1992) highlights accountability, transparency, participation, effectiveness, and rule of law as major dimensions of good governance. In election supervision, these principles become operational when

supervision data can be traced, reports can be followed up, and citizens can see that their participation matters. Therefore, SIMASTER must be evaluated not only from the viewpoint of internal efficiency but also from its contribution to democratic accountability.

## Public Organization and Public Management

Public organizations differ from private organizations because their goals are shaped by public mandates, legal accountability, and social legitimacy. Samuelson (1945) explained public goods as goods or services that are collectively consumed and cannot be efficiently provided through ordinary market mechanisms. Election supervision has the characteristics of a public good because the integrity of elections benefits all citizens, including those who do not directly report violations. For this reason, public organizations responsible for election supervision must maintain inclusive access and impartial governance.

Levine, Peters, and Thompson (1990) argued that public organizations often deal with complex and ambiguous tasks, multiple stakeholders, strict legal standards, and high expectations for fairness. These characteristics are visible in election supervisory institutions, where every decision is subject to legal scrutiny and public attention. Information management systems are useful because they help reduce ambiguity by organizing data, tracking cases, and documenting supervisory activities. Yet, the complexity of public organizations also means that technology implementation may face administrative, cultural, and resource constraints.

Public management connects policy objectives with organizational resources. Overman, Ott, Hyde, and Shafritz (1991) explain that public management integrates planning, organizing, controlling, and the management of human, financial, physical, informational, and political resources. In SIMASTER governance, public management is reflected in the institution's effort to mobilize personnel, infrastructure, policies, and stakeholder support so that the system can be used consistently. The success of the system therefore depends on management capacity, not only on technological design.

## Information System Governance

Information system governance is the set of structures, processes, and relational mechanisms used to ensure that information technology supports organizational goals. The IT Governance Institute (2003) states that IT governance ensures that information technology sustains and extends organizational strategies and objectives. This definition is highly relevant to SIMASTER because the system must support the legal and administrative functions of election supervision rather than operate as a separate technical project.

Several principles are important in information system governance. First, alignment means that the system must be aligned with institutional strategy and legal mandates. Second, value delivery means that the system should create measurable benefits such as faster reporting, better documentation, and improved decision making. Third, risk management requires attention to data security, privacy, misinformation, and system failure. Fourth, resource management emphasizes infrastructure, budget, human resources, and technical support. Fifth, performance measurement requires indicators for system usage, response time, report completion, user satisfaction, and data quality (ITGI, 2003).

COBIT and ITIL frameworks are often used as references for information technology governance and service management. COBIT emphasizes control objectives, risk management, and performance measurement, while ITIL focuses on service design, transition, operation, and improvement. Although this article does not apply those frameworks technically, their principles help explain why SIMASTER requires standard operating procedures, user support, training,

monitoring, and continuous system improvement. Without governance standards, a digital platform may depend too much on individual initiative and may not be sustainable.

### Public Service Quality and Digital Participation

Public service quality is an important lens because SIMASTER provides internal services for supervisors and external access for the public. Parasuraman, Zeithaml, and Berry (1988) identify reliability, responsiveness, assurance, empathy, and tangibles as dimensions of service quality. Reliability refers to the ability to provide accurate and consistent service. Responsiveness refers to timely assistance. Assurance reflects competence and trust. Empathy involves attention to user needs. Tangibles include physical and technological facilities. In digital reporting systems, these dimensions appear in system stability, response time, user guidance, data security, accessibility, and feedback to users.

Tjiptono (2004) emphasizes that service quality should be assessed from the viewpoint of service users, not only service providers. This means that SIMASTER should be evaluated based on whether users, including election supervisors and citizens, find it useful, accessible, safe, and responsive. The public may not use a digital reporting channel if they do not understand it, do not trust the follow-up process, or face difficulty accessing the internet. Therefore, public outreach and user-centered design are central to digital participation.

Digital participation in election supervision is connected to democratic accountability. When citizens can submit information about alleged violations through a digital platform, supervision becomes more participatory. However, participation requires inclusive access, privacy protection, clear feedback, and a sense that reports are not ignored. Arnstein (1969) reminds that participation can become symbolic if citizens are asked to provide input but do not receive meaningful response. In the case of SIMASTER, meaningful participation requires a feedback mechanism that informs reporters about the progress of their reports while protecting sensitive information. See table 1.

**Table 1**. Theoretical framework used in the article

| Theoretical lens | Main source | Analytical meaning | Application to SIMASTER |
|---|---|---|---|
| Public administration | Wilson (1887); Denhardt & Denhardt (2003) | Administration executes legal mandates while serving citizens democratically. | SIMASTER supports legal and democratic duties of election supervision. |
| Digital-era governance | Dunleavy et al. (2006) | Digital technology reintegrates fragmented processes and redesigns services. | SIMASTER integrates reporting, documentation, and coordination. |
| IT governance | ITGI (2003) | Information technology must align with organizational strategy and manage risk. | SIMASTER needs institutional rules, security, training, and performance indicators. |
| Public service quality | Parasuraman et al. (1988); Tjiptono (2004) | Service is assessed through reliability, responsiveness, assurance, empathy, and facilities. | Users need stable access, clear feedback, and trustworthy digital reporting. |
| Participation | Arnstein (1969) | Participation is meaningful only when citizens influence decisions and receive response. | Public reporting through SIMASTER must be followed by visible and accountable action. |

## METHOD

This article uses a qualitative descriptive approach. The approach is appropriate because the study seeks to understand how SIMASTER is governed, how it supports institutional duties, and what obstacles influence its implementation. Qualitative descriptive research enables the researcher to describe organizational practices, user experiences, and institutional dynamics in a natural setting (Creswell, 2014). The study does not attempt to test statistical relationships; instead, it interprets data from interviews, observation, and documents to identify patterns and meanings.

The research location is the secretariat of a provincial election supervisory institution in North Sulawesi. The focus of analysis is SIMASTER as an electronic-based integrated secretariat information management system. The study examines three sub-focuses: governance of SIMASTER and its support for the supervisory function, the role of SIMASTER in supporting supervisory duties based on Law Number 7 of 2017, and the function of SIMASTER in managing election supervision data. These sub-focuses were selected because they represent institutional, legal, and data-management dimensions of digital election supervision.

Data were obtained from key informants who were directly or indirectly involved with SIMASTER. Informants included institutional leaders, staff members, civil society observers, and members of the public concerned with elections. The use of several informant categories strengthens the analysis because it captures both internal and external perspectives. Internal informants explain system management, operational challenges, and institutional expectations, while external informants provide views on transparency, public access, and participation.

Data collection techniques consisted of interviews, observation, and documentation. Interviews explored the perceived benefits of SIMASTER, obstacles in use, infrastructure conditions, human resource capacity, data management, public reporting, and recommendations for improvement. Observation was used to understand the institutional context, system interface, and documentation activities. Document analysis included institutional profiles, legal frameworks, organizational structures, SIMASTER descriptions, and research summary tables. Triangulation was used by comparing interview data, observations, and documents so that the findings did not rely on a single source (Sugiyono, 2016).

Data analysis followed the interactive model of Miles, Huberman, and Saldana (2014), consisting of data condensation, data display, and conclusion drawing. Data condensation was conducted by selecting relevant information according to the three research questions. Data display was developed through narrative explanation, thematic grouping, tables, and figures. Conclusion drawing was carried out by identifying recurring patterns about system benefits, governance gaps, determinant factors, and strategic implications. The analysis emphasizes credibility by preserving the meaning of informant statements while presenting them in an academically structured form. See table 2.

**Table 2**. Research focus, data sources, and analytical indicators

| Research focus | Data source | Analytical indicators | Expected contribution |
|---|---|---|---|
| SIMASTER governance and supervisory function | Leaders, staff, system documents | Planning, implementation, monitoring, evaluation, infrastructure, regulation | Explains whether system governance supports institutional supervision. |
| Role under Law Number 7 of 2017 | Institutional leaders, legal documents, supervision practices | Reporting, prevention, monitoring, follow-up, public participation | Connects digital system functions with legal mandates. |

| | | | |
|---|---|---|---|
| Election supervision data management | Staff, observers, public informants, documentation | Data integration, real-time access, validity, archive, risk mapping | Shows how data supports decisions and accountability. |
| Determinant factors | All informants and observations | Digital literacy, connectivity, socialization, system integration, security | Provides strategic recommendations for improvement. |

## RESULTS AND DISCUSSION

### Institutional Context and the Position of SIMASTER

The provincial election supervisory institution has a strategic mandate to ensure that electoral processes are honest, fair, democratic, and consistent with legal provisions. Its work covers prevention, supervision, handling of violations, dispute resolution, coordination, and reporting. The secretariat provides administrative and technical support for those functions. In a province with fifteen regencies and cities and varied geographical conditions, supervision requires a data system that can connect field reports with provincial decision makers. This institutional context explains why an integrated information management system is needed.

SIMASTER was developed as a reform-oriented innovation to support internal administration and external interaction. The system was designed to integrate functions and services that had previously been handled through separate applications or manual procedures. The system also seeks to bridge institutional work between the leadership body and the secretariat. This is important because the leadership formulates supervisory policy and strategic decisions, while the secretariat manages administrative and technical implementation. SIMASTER therefore becomes a connecting instrument between policy direction and operational execution.

The system interface shown in Figure 1 illustrates SIMASTER as a web-based portal that can be accessed for institutional services. The visual display indicates the effort to provide a recognizable entry point for users and stakeholders. In the context of digital governance, the existence of a digital portal is a first step, but it must be accompanied by clear governance rules, user guidance, data security, and socialization. A portal that is not well institutionalized may be available technically but underused administratively and socially. See figure 2.

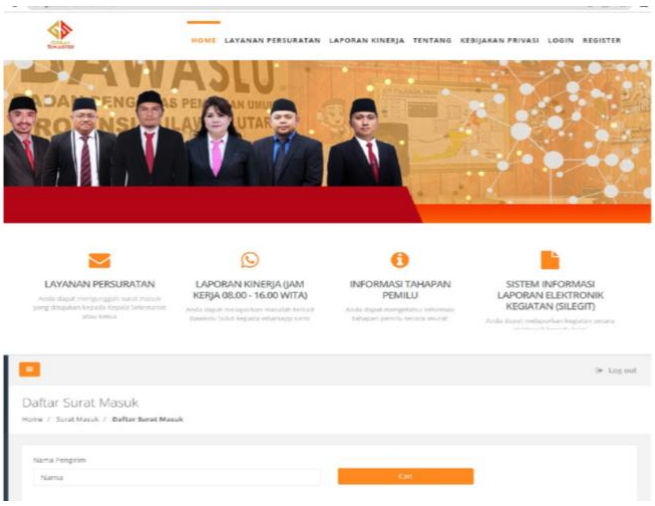


**Figure 1**. SIMASTER electronic-based integrated secretariat information management system display

The organizational structure also shapes the way SIMASTER is governed. The secretariat includes administrative, supervisory, public relations, violation handling, dispute resolution, and legal support functions. These units generate different types of information and have different operational needs. An integrated system is therefore valuable because it can reduce information silos, but integration also requires agreement about data standards, access rights, work procedures, and institutional responsibility. The organizational structure in Figure 2 shows that SIMASTER must serve multiple units rather than a single technical division.

A key finding is that SIMASTER has strategic relevance but still needs stronger institutional anchoring. Informants stated that SIMASTER supports reporting, monitoring, and documentation, but its institutional status still requires formal strengthening. The system is expected to be incorporated more clearly into strategic planning and aligned with national regulations on electronic-based government systems and one-data governance. This finding is consistent with IT governance theory, which states that information systems must be aligned with institutional strategy and supported by formal governance structures (ITGI, 2003). See figure 3.


**Figure 2**. Organizational structure of the provincial election supervisory institution

## Governance of SIMASTER in Supporting Election Supervision

The first research focus concerns how SIMASTER governance supports the main supervisory function. Informants emphasized that SIMASTER is crucial because it integrates internal tasks and helps connect external support for supervision. The system enables data and information related to alleged violations to be managed online, supports monitoring of election stages, and facilitates real-time communication with supervisory personnel in local areas. These functions are important because supervision requires rapid response and reliable documentation.

One institutional leader stated that SIMASTER allows the organization to manage violation reports, monitor stages, and communicate directly with regional supervisors in real time. This statement indicates that the system contributes to operational responsiveness. When reports are received digitally, the institution can process initial information faster than when all reporting depends on physical submission or informal communication. The system also helps map risk areas, which supports strategic allocation of supervisory resources. In public management terms, SIMASTER helps transform information into managerial action (Overman et al., 1991).

However, the same informants also identified significant governance challenges. First, the system needs stronger regulatory support and institutionalization. If SIMASTER is not clearly included in internal rules, standard procedures, and strategic planning, its implementation may depend on the commitment of current leaders or technical staff. Second, infrastructure remains uneven, especially in areas with limited connectivity. Third, human resources need continuous

capacity building because not all supervisors are equally familiar with digital systems. These obstacles show that governance maturity is still developing.

Staff informants confirmed that SIMASTER is used to manage correspondence services, information services, reporting of alleged violations, monitoring of stages, and data archiving. They described the system as helping them work faster and more coordinately, especially in receiving and following up reports from the public. Nevertheless, implementation at the local level may be constrained by connectivity and digital literacy. Some field supervisors in remote areas store data offline and upload it when the internet becomes available. This hybrid practice shows adaptive management, but it also reveals that digital governance is still dependent on external infrastructure conditions.

From the perspective of public service quality, the system improves responsiveness and reliability because reports and follow-up actions can be documented in a centralized manner. It also strengthens assurance because documentation can reduce the risk of lost reports. Yet, responsiveness will be weakened when internet instability delays upload or communication. Reliability will also be questioned when users do not understand how to use the system. Therefore, the quality of SIMASTER as a public digital service depends on the interaction between system design, infrastructure, and user competence (Parasuraman et al., 1988). See figure 3 and table 3.

**Figure 3**. Interview documentation with an institutional informant on SIMASTER governance

**Table 3**. Summary of findings on SIMASTER governance and supervisory support

| Dimension | Positive contribution | Main obstacle | Strategic implication |
|---|---|---|---|
| Operational coordination | Connects reports, monitoring, and field communication in real time. | Some local areas face weak internet connectivity. | Offline-online mechanisms should be formalized and monitored. |
| Violation reporting | Enables online submission and centralized report management. | Public knowledge of the system remains limited. | Outreach and user guidance must be expanded. |
| Risk mapping | Supports identification of areas prone to violations. | Analytical features need further development. | Add data analytics and visualization dashboards. |
| Institutional governance | Supports efficiency, transparency, and accountability. | Formal institutionalization and standard procedures are not yet fully strong. | Integrate SIMASTER into strategic planning and internal regulations. |

| | | | |
|---|---|---|---|
| Human resources | Staff see benefits for faster work and documentation. | Digital literacy varies among supervisors. | Continuous training and technical support are required. |

## Role of SIMASTER in Supporting Supervisory Duties under Law Number 7 of 2017

The second research focus concerns the role of SIMASTER in supporting election supervisory duties under Law Number 7 of 2017. The legal mandate of election supervision includes monitoring election stages, preventing violations, handling reports and findings, coordinating with related institutions, and ensuring transparent reporting. The findings show that SIMASTER helps translate this mandate into digital administrative practice. It supports online reporting, documentation, monitoring, and coordination, thereby making legal duties more traceable and systematic.

Informants emphasized that SIMASTER is particularly useful for managing alleged violation reports. When the public submits information, the system can help record the report, document supporting information, and monitor follow-up. This strengthens accountability because each step can be tracked. In conventional reporting, documents may be scattered or dependent on individual officers. In a digital system, documentation can be centralized and accessed by authorized personnel. This is consistent with good governance principles because transparency and accountability require traceable processes (World Bank, 1992).

The system also supports preventive supervision. By collecting data across locations and stages, SIMASTER can help identify patterns and areas that need attention. Informants suggested that future development should include stronger analytical features, including risk prediction based on historical data and potentially artificial intelligence. Such suggestions indicate that users expect the system to move beyond passive data storage toward active decision support. This reflects the broader development of information systems from transaction processing to decision support (Laudon & Laudon, 2018).

External observers viewed SIMASTER as a positive step toward digital election supervision. They recognized that systematic reporting and centralized documentation could improve public trust. However, they also emphasized that the public will participate only if the system is widely known and easy to use. Socialization remains a key challenge. A public reporting system has limited democratic value if most citizens do not know how to access it, do not understand its benefits, or do not receive feedback after reporting. Thus, the role of SIMASTER under the legal mandate must include communication with the public, not only internal data processing.

The legal role of SIMASTER is also connected to data validity. Election supervision data must be accurate because reports can lead to legal consequences. Informants noted the need for better verification mechanisms to ensure that data entered into the system are valid and free from manipulation. This issue is critical because digital data can increase speed but may also introduce risks if validation is weak. Therefore, SIMASTER must balance openness for public participation with strict verification, privacy protection, and procedural fairness. See figure 4 and table 4.


**Figure 4.** Interview documentation with a public election observer

**Table 4.** SIMASTER role in relation to supervisory duties

| Supervisory duty | SIMASTER contribution | Risk found in implementation | Governance response needed |
|---|---|---|---|
| Monitoring election stages | Provides digital records and communication channels for field supervision. | Upload delays from areas with weak connectivity. | Strengthen network access and offline data protocols. |
| Preventing violations | Supports risk mapping and early identification of potential violations. | Analytical functions are still limited. | Develop dashboards and predictive analytics. |
| Handling reports | Centralizes alleged violation reports and follow-up documentation. | Response time can vary depending on user capacity and coordination. | Create service-level standards and monitoring indicators. |
| Public participation | Allows citizens to submit information and monitor progress. | Public socialization remains insufficient. | Run continuous public campaigns and user guidance. |
| Accountability and transparency | Documents report progress and institutional responses. | Transparency must be balanced with data protection. | Define access rights, privacy rules, and verification procedures. |

## Function of SIMASTER in Managing Election Supervision Data

The third research focus concerns SIMASTER as a data management system. The findings show that SIMASTER facilitates the collection, processing, storage, and distribution of supervision data. It helps manage alleged violation reports, field supervision results, documentation, and risk-related information. This function is important because election supervision generates large volumes of data from multiple levels. If the data are not integrated, the institution may face duplication, slow retrieval, and difficulty in producing evidence-based analysis.

Staff informants stated that SIMASTER integrates reports from different levels, from sub-district to province. Such integration enables decision makers to obtain more complete information and respond more quickly. It also reduces the risk that reports will be lost or ignored. From the

viewpoint of information management, this is a movement from fragmented data storage toward centralized institutional memory. Institutional memory is crucial for repeated electoral cycles because lessons from one election can inform risk analysis in the next election.

The system also supports transparency because authorized supervisory personnel can access relevant data and the public can monitor parts of report progress. This transparency builds trust that submitted reports are documented and followed up. However, informants also warned that transparency must be accompanied by better communication from the institution to the public. If the public can submit reports but does not receive sufficient updates, trust may decline. Therefore, data management must include a communication strategy that explains what can be disclosed, what must remain confidential, and how the public can understand the follow-up process.

Several data management challenges remain. First, connectivity limitations can delay data upload, especially in remote areas. Second, digital literacy among field supervisors is uneven. Third, public understanding of the system remains limited. Fourth, data validation needs to be strengthened to ensure that all information entered into the system is accurate. Fifth, interoperability with other electoral systems, including systems managed by the election commission, should be improved. These challenges show that data management is an ecosystem issue rather than a simple database problem.

The findings support the argument that SIMASTER has the potential to become a decision-support system. It can assist the institution in identifying trends, monitoring case progress, mapping vulnerable areas, and preparing reports. However, to reach this stage, the system should include stronger analytics, clear data governance, defined metadata standards, and performance indicators. Without these improvements, SIMASTER may remain useful for data storage but less powerful for strategic decision making. See figure 5 and table 5.

**Figure 5.** Documentation of interview related to data and information management

**Table 5**. Data management functions and remaining challenges

| Function | Current contribution | Evidence from findings | Challenge | Improvement direction |
|---|---|---|---|---|
| Data collection | Collects reports and supervision information from different levels. | Informants noted integration from sub-district to provincial levels. | Delayed uploading in remote areas. | Improve connectivity and offline synchronization. |
| Data storage | Documents reports systematically and centrally. | Reports are less likely to be lost or ignored. | Data quality varies. | Use standard forms and validation rules. |

| | | | | |
|---|---|---|---|---|
| Data processing | Supports risk mapping and faster analysis. | Users expect analytical and AI-based features. | Current analytics are not yet advanced. | Develop dashboards and historical trend analysis. |
| Data access | Authorized users can access relevant data and report progress. | Transparency is perceived as improving trust. | Need to protect sensitive data. | Establish access rights and privacy safeguards. |
| Data interoperability | Potential to connect with other electoral systems. | Informants expect integration with systems owned by other election institutions. | Integration is still limited. | Develop interoperability standards and cross-agency coordination. |

**Determinant Factors Influencing SIMASTER Implementation**

Across the three research focuses, several determinant factors influence SIMASTER implementation. The first determinant is infrastructure. Digital supervision depends heavily on internet access, servers, devices, and technical support. In areas with unstable connectivity, the system cannot function optimally. Infrastructure gaps create inequality between areas with good digital access and areas that remain dependent on manual or delayed upload procedures. This problem is particularly important in provinces with diverse geography.

The second determinant is human resource capacity. SIMASTER can improve efficiency only if users understand how to operate it. Informants repeatedly mentioned the need for continuous training. Digital literacy is not a one-time requirement; it must be developed continuously because systems evolve, electoral regulations change, and new features may be added. Human resource development also needs to include data ethics, privacy awareness, and analytical skills so that users do not merely input data but understand the meaning and risks of data governance.

The third determinant is institutional regulation. SIMASTER needs stronger formal support in internal policy, strategic planning, standard operating procedures, and performance measurement. Institutionalization is important for sustainability. If a system is treated only as an innovation project, it may weaken when leadership changes or budget priorities shift. If it is formally embedded in organizational governance, it becomes part of routine institutional practice.

The fourth determinant is public outreach. Digital participation cannot grow if citizens do not know the system. Public observers and community informants indicated that socialization remains insufficient. Outreach should not only announce the existence of SIMASTER, but also explain how to report, what types of information are needed, how confidentiality is protected, and how follow-up will be communicated. Public communication must be repeated, accessible, and adapted to different user groups.

The fifth determinant is system development and interoperability. Informants expect SIMASTER to become more responsive, user-friendly, flexible, and integrated with other election-related systems. System development should include interface simplification, mobile-friendly access, analytical dashboards, automated notifications, verification features, and integration protocols. Interoperability is crucial because election supervision interacts with election administration, law enforcement, civil society monitoring, and public information systems. See table 6.

**Table 6**. Determinant factors and policy implications

| Determinant factor | Condition found | Impact on system effectiveness | Policy implication |
|---|---|---|---|
| Infrastructure | Connectivity is uneven across areas. | Reports and supervision data can be delayed. | Invest in network support, devices, and technical helpdesk. |
| Human resources | Digital literacy differs among supervisors. | System use is inconsistent and dependent on skilled individuals. | Provide continuous training and mentoring. |
| Institutional regulation | Formal institutionalization still needs strengthening. | System sustainability may be vulnerable. | Include SIMASTER in strategic plans, SOPs, and performance indicators. |
| Public outreach | Many citizens do not know how to use the system. | Public participation remains limited. | Implement regular socialization and user education. |
| Data governance | Need stronger verification and privacy rules. | Invalid or sensitive data can create legal and trust risks. | Develop validation, access control, and confidentiality standards. |
| System development | Analytical and interoperability features need improvement. | Decision support remains limited. | Develop dashboards, notifications, and cross-system integration. |

### From Digital Application to Governance Ecosystem

The findings indicate that SIMASTER has already produced meaningful benefits for digital election supervision. It enables reports to be documented, supports real-time coordination, helps manage supervision data, and contributes to transparency. These benefits support the view that digital-era governance can reintegrate fragmented administrative processes (Dunleavy et al., 2006). In this case, SIMASTER reduces fragmentation between reporting, monitoring, documentation, and decision support. However, the findings also show that digital transformation is incomplete when the system is not fully supported by infrastructure, institutional rules, user capacity, and public communication.

From the perspective of public administration, SIMASTER functions as an instrument for executing legal mandates. Election supervisory institutions are required to prevent and handle violations, monitor electoral stages, and provide accountable reports. The system helps organize these duties in a more structured way. This reflects classical administrative principles of systematic execution (Wilson, 1887), but it also reflects modern public service values because the system creates a channel for citizen participation and transparency (Denhardt & Denhardt, 2003). Thus, SIMASTER combines administrative efficiency and democratic service values.

From the perspective of public service quality, SIMASTER improves reliability by centralizing reports and reducing the risk of lost documentation. It improves responsiveness by enabling online reporting and faster follow-up. It improves assurance when data are securely stored and progress can be monitored. It improves tangibles through the availability of a digital platform. However, empathy and accessibility still require improvement because users need guidance, connectivity, and communication. A system may be technically available but socially inaccessible if citizens are not familiar with it or if field users lack digital confidence.

From the perspective of IT governance, the main issue is governance maturity. SIMASTER has functional value, but it needs clearer alignment with institutional strategy, stronger risk management, and measurable performance indicators. ITGI (2003) emphasizes that information technology must be governed through structures and processes that ensure strategic alignment and value delivery. The findings show that the system should be formally embedded in institutional policy, linked to planning documents, and supported by standard operating procedures. This is necessary to avoid dependence on informal practices or temporary innovation enthusiasm.

The study also shows that data governance is becoming central to election supervision. When election supervision data are digitized, the institution gains opportunities for faster analysis and greater transparency. At the same time, it faces risks related to data validity, confidentiality, misinformation, and unequal access. Therefore, SIMASTER should be developed with data governance principles, including data standards, verification procedures, role-based access, audit trails, privacy protection, and clear retention rules. These elements are essential because election data can influence legal and political decisions.

Public participation is another important discussion point. SIMASTER can strengthen participatory supervision only if citizens know how to use it and trust that their reports will be processed. Arnstein (1969) reminds that participation must be meaningful, not merely symbolic. In digital election supervision, meaningful participation requires public outreach, simple reporting procedures, confidentiality protection, and feedback. The findings show that citizens and observers welcome the system but still expect more socialization and communication. Therefore, the system should be accompanied by a public communication strategy.

The discussion also highlights the need for interoperability. Election supervision cannot operate in isolation. It interacts with election administration, law enforcement, public information, and civil society monitoring. Informants expected integration with other electoral systems, including systems owned by the election commission. Interoperability would allow more complete monitoring, reduce duplication, and support cross-institutional coordination. However, interoperability also requires agreements on data standards, legal authority, privacy, and cybersecurity.

Overall, the study argues that SIMASTER should be understood as a governance ecosystem. The technological platform is only one component. Other components include institutional leadership, regulatory support, infrastructure, human resources, data governance, public communication, and continuous improvement. When these components interact effectively, SIMASTER can strengthen democratic supervision. When one component is weak, the overall effectiveness of the system is reduced. This ecosystem perspective is the main conceptual contribution of the article. See table 7.

**Table 7.** Theory-based discussion of findings

| Finding | Theoretical interpretation | Supporting theory | Recommended direction |
|---|---|---|---|
| SIMASTER centralizes reporting and documentation. | Digital systems reintegrate fragmented administrative work. | Dunleavy et al. (2006) | Expand integration and standardize workflows. |
| Infrastructure limitations reduce access. | Service quality depends on tangible facilities and reliability. | Parasuraman et al. (1988) | Improve connectivity and device availability. |
| Digital literacy varies among supervisors. | Public management requires effective | Overman et al. (1991); Dessler (2010) | Conduct continuous capacity building. |

| | | | |
|---|---|---|---|
| | human resource development. | | |
| Public socialization is limited. | Citizen-centered service requires engagement and feedback. | Denhardt & Denhardt (2003); Arnstein (1969) | Strengthen public communication and user feedback. |
| Formal institutional support needs strengthening. | IT governance requires strategic alignment and accountability. | ITGI (2003) | Embed SIMASTER in strategic plans, SOPs, and performance monitoring. |
| Data validity and privacy are critical. | Good governance requires accountability and rule of law. | World Bank (1992) | Develop data validation, access control, and confidentiality rules. |

## CONCLUSION

This article concludes that SIMASTER plays an important role in supporting electronic-based information management for election supervision. The system helps manage alleged violation reports, monitor election stages, document supervision results, and integrate data from different administrative levels. These functions contribute to efficiency, transparency, accountability, and data-based decision making. In this sense, SIMASTER represents an important step toward digital governance in election supervision. The first conclusion is that SIMASTER governance has supported the main supervisory function, but its implementation has not yet reached full maturity. The system provides operational benefits through online reporting, real-time communication, and risk mapping. However, formal institutionalization, infrastructure, and user capacity need to be strengthened. Digital governance requires clear rules, standard operating procedures, technical support, and performance indicators so that the system can operate consistently across electoral cycles. The second conclusion is that SIMASTER supports the implementation of supervisory duties under Law Number 7 of 2017. It helps translate legal mandates into digital procedures by facilitating reports, documentation, monitoring, and follow-up. However, the legal role of the system should be strengthened through better verification mechanisms, data protection, and public communication. Public participation will be meaningful only when citizens understand the system and receive accountable feedback about their reports. The third conclusion is that SIMASTER functions as a data management tool for election supervision. It enables centralized storage, structured documentation, and more efficient access to supervision data. Nevertheless, data management still faces challenges related to connectivity, digital literacy, data validity, analytical capacity, and interoperability. The system should be developed from a data repository into a decision-support platform through dashboards, analytics, and integration with other electoral systems.

Several recommendations can be proposed. First, the institution should formalize SIMASTER in strategic planning, internal regulations, standard operating procedures, and performance measurement. Second, infrastructure should be strengthened, especially in remote areas, through cooperation with relevant government agencies and service providers. Third, human resource capacity should be improved through continuous training, mentoring, and technical assistance. Fourth, public outreach should be expanded through simple communication materials, community-based socialization, and clear reporting guidance. Fifth, the system should be developed with stronger data governance, including validation, privacy protection, access control, audit trails, and interoperability standards.

The broader implication is that digital election supervision should be treated as a governance ecosystem. Technology provides the platform, but governance determines whether the platform becomes effective, trusted, and sustainable. SIMASTER can become a model of digital innovation in public administration if it is supported by institutional commitment, inclusive access, competent human resources, accountable data management, and meaningful public participation.

## REFERENCES

Arnstein, S. R. (1969). A ladder of citizen participation. Journal of the American Institute of Planners, 35(4), 216-224.

Cadbury Committee. (1992). Report of the Committee on the Financial Aspects of Corporate Governance. London: Gee.

Creswell, J. W. (2014). Research design: Qualitative, quantitative, and mixed methods approaches. Thousand Oaks, CA: Sage.

Denhardt, J. V., & Denhardt, R. B. (2003). The new public service: Serving, not steering. Armonk, NY: M.E. Sharpe.

Dessler, G. (2010). Human resource management. Upper Saddle River, NJ: Pearson.

Dunleavy, P., Margetts, H., Bastow, S., & Tinkler, J. (2006). Digital era governance: IT corporations, the state, and e-government. Oxford: Oxford University Press.

Goodnow, F. J. (1900). Politics and administration: A study in government. New York: Macmillan.

IT Governance Institute. (2003). Board briefing on IT governance. Rolling Meadows, IL: ITGI.

Laudon, K. C., & Laudon, J. P. (2018). Management information systems: Managing the digital firm. New York: Pearson.

Levine, C. H., Peters, B. G., & Thompson, F. J. (1990). Public administration: Challenges, choices, consequences. Glenview, IL: Scott, Foresman/Little, Brown.

Miles, M. B., Huberman, A. M., & Saldana, J. (2014). Qualitative data analysis: A methods sourcebook. Thousand Oaks, CA: Sage.

Overman, E. S., Ott, J. S., Hyde, A. C., & Shafritz, J. M. (1991). Public management: The essential readings. Chicago: Nelson-Hall.

Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality. Journal of Retailing, 64(1), 12-40.

Samuelson, P. A. (1945). The pure theory of public expenditure. Review of Economics and Statistics, 36(4), 387-389.

Sugiyono. (2016). Metode penelitian kuantitatif, kualitatif, dan R&D. Bandung: Alfabeta.

Tjiptono, F. (2004). Manajemen jasa. Yogyakarta: Andi.

Wilson, W. (1887). The study of administration. Political Science Quarterly, 2(2), 197-222.

World Bank. (1992). Governance and development. Washington, DC: World Bank.