

## Research Article

# Digital Governance in the Local Government of Sumedang Regency

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**ORCID**Andi Wa Ode Suastina: <https://orcid.org/0000-0002-6741-4692>**Abstract.**

The study's objective was to examine the implementation of digital governance in Sumedang Regency, focusing on government policies, digitalization implementation standards, and human resources and stakeholder involvement in digitalization implementation. This study applied a qualitative approach with data collection techniques through literature studies and interviews. The study results showed that Presidential Regulation No. 95 of 2018 concerning the Electronic-Based Government System (SPBE) serves as the main foundation for implementing digitalization in local governments, followed by other policies from the Sumedang Regency government. Digitalization in the Sumedang Regency Government is also supported by IT staff recruited to develop the information system. International standards such as ISO 27001 and ISO 9001 are applied to ensure the security and quality of the digital systems being developed. Stakeholder involvement, such as Telkomsel, Telkom University, and the community, strengthens the digitalization process through effective collaboration. In addition, the continuous development of human resource capacity is key to maintaining the success of digital transformation. The conclusion of this study emphasized that multi-stakeholder collaboration and continuous human resource development are key to the success of creating a more efficient and responsive government to the needs of the people in Sumedang Regency.

**Keywords:** digital governance, government policies, implementation standards, human resources stakeholder involvement

## 1. Introduction

The development of digital technology has brought significant changes in various aspects of life, including governance. In today's digital era, governments worldwide, including Indonesia, must adapt quickly to technological changes to improve public services, administrative efficiency, and transparency. Digitalization of government, or digital governance, has become a priority in efforts to create better governance through the use of information and communication technology (ICT).

In Indonesia, the Central Government has encouraged digitalization through Presidential Regulation No. 95 of 2018 concerning the Electronic-Based Government System

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(SPBE). This regulation is the basis for implementing electronic-based governance at the national to regional levels. The Sumedang Regency Government is one of the regions that has proactively adopted digitalization in its governance, to increase efficiency, transparency, and public participation in the public decision-making process.

As one of the regencies in West Java, Sumedang has shown a strong commitment to realizing digital transformation through various innovations and digital programs. Sumedang has launched digital-based applications such as WAKEPO (WhatsApp Information Needs and Online Services) and SIMPATI (Integrated Stunting Prevention Information System) which are designed to make it easier for the public to access information and public services. In addition, Sumedang has also involved various stakeholders, including Telkomsel and Telkom University, in developing a more comprehensive digital system.

However, in the digitalization process, Sumedang Regency also faces several challenges, such as disparities in access to technology between urban and rural areas, limited digital infrastructure, and lack of digital literacy among government officials and the community. These challenges underline the importance of supportive policies, the implementation of international standards such as ISO 27001 and ISO 9001, and the development of sustainable human resource (HR) capacity.

This study aims to explore the implementation of digital governance in Sumedang Regency with a focus on four main indicators: government policies, digitalization implementation standards, human resources, and stakeholder engagement. Through a qualitative approach, this study will provide in-depth insights into how digital transformation in Sumedang can improve good governance, as well as how multi-stakeholder collaboration is the key to success in the government digitalization process.

## 2. Theoretical Study

### 2.1. Digital Governance

Digital governance is the use of information and communication technology (ICT) in government processes to improve efficiency, transparency, accountability, and public participation in decision-making. According to Indrajit (2002), digital governance includes various dimensions such as technological infrastructure, policies, standards, and human resources involved in the implementation of digital systems. Governments in various countries have utilized digital technology to provide better public services,

reduce costs, and improve administrative performance. In Indonesia, the implementation of digital governance is increasingly emphasized through Presidential Regulation No. 95 of 2018 concerning Electronic-Based Government Systems (SPBE).

## **2.2. E-Government and Good Governance**

E-Government is one of the main forms of digital governance implementation, which integrates digital technology into various government functions. E-Government helps improve government transparency and accountability by enabling wider public information access and more efficient interaction between government, society, and the private sector (Gilbert et al., 2011). Previous studies have shown that the implementation of e-government can improve good governance, especially in terms of transparency, responsiveness, and efficiency (West, 2004; Reddick, 2012).

Good Governance, defined by UNDP (1997) as the effective, transparent, and accountable management of state resources, is a key objective of many digital governance initiatives. By leveraging digital technologies, governments can accelerate decision-making, improve coordination between institutions, and ensure public involvement in governance processes.

## **2.3. Collaborative Governance Theory**

Collaborative governance is a concept that emphasizes the involvement of various stakeholders, both from the government, private sector, and society, in achieving good governance goals. According to Ansell and Gash (2008), cross-sector collaboration is a key element in improving governance effectiveness, especially in the digital era. In Sumedang, for example, the involvement of Telkomsel, Telkom University, and local communities has strengthened the implementation of digital governance by sharing resources and knowledge to accelerate digital transformation.

## **2.4. International Standards in Digital Governance**

The implementation of digital governance does not only depend on policies and infrastructure but also on the implementation of international standards that guarantee the security and quality of digital systems. ISO 27001, which focuses on information security management systems, and ISO 9001, which ensures quality standards in system

management, are the two main standards applied in digital transformation in many countries, including Indonesia. Sumedang Regency adopted this standard to ensure public data security and operational efficiency, in line with the findings of Estevez and Janowski (2013) who emphasized the importance of coordination between institutions in the integration of technology systems.

## 2.5. Implications of Digital Literacy and HR

The success of digital governance is highly dependent on the readiness of human resources (HR) involved in the digital transformation process. According to Mayes and Fowler (2006), digital literacy is an important prerequisite for utilizing technology optimally. Therefore, the development of HR competencies in the field of information technology is a major focus in many regions, including Sumedang. Increasing digital literacy among government officials and local communities is a key strategy for creating a sustainable and inclusive digital ecosystem.

## 3. Methods

This study uses a qualitative approach to explore a deeper understanding of the implementation of digital governance in Sumedang Regency. Data collection techniques are carried out through literature studies and interviews with stakeholders involved in the digitalization process in the area.

## 4. Results and Discussion

Sumedang Regency Government by analyzing three main indicators: research policy, human resource (HR) standards, and stakeholder involvement. These three indicators were chosen because they are directly related to the success of implementing digital systems in governance.

First, research policy plays a central role in ensuring that the implementation of digital technologies is aligned with local needs and challenges. The Sumedang Regency Government has initiated various policies that support digital transformation, but this study identified that sustainability and policy adjustment with technological developments are key challenges.

Second, HR standards greatly determine the extent to which digital technology can be optimized. From the interviews conducted, it was found that increasing digital competence and literacy among government officials is still the main focus to achieve maximum transformation. Adequate HR standards are needed for the implementation of digital systems to run effectively.

Third, the resources used include technological infrastructure, budget, and technical support provided to support the digitalization process. This study found that even though there has been budget allocation and procurement of digital infrastructure, there are still limitations in terms of maintaining and increasing the technological capacity needed to support the development of digital systems sustainably.

Fourth, stakeholder involvement, both from the private sector, the community, and academics, is an important aspect of realizing inclusive and participatory digital governance. The results of the study show that although stakeholder involvement has occurred, a more comprehensive strategy is needed to ensure effective and sustainable collaboration in developing digital systems.

Discussion of these three indicators will provide a deeper picture of the extent to which the implementation of digital governance in Sumedang Regency has met the expectations and needs of the community, as well as the challenges faced in the transformation process.

## **4.1. Government Policy**

To understand how central and regional government policies affect the implementation of digital governance, this study examines various policies that have been implemented by the Sumedang Regency government in an effort to adopt digital technology. (David et al. , 2023) These policies primarily focus on improving public services and encouraging holistic digital transformation. (David et al. , 2023)

### **4.1.1. Central Government Policy**

The central government has encouraged the development of the Electronic-Based Government System (SPBE) through Presidential Regulation No. 95 of 2018, which aims to facilitate and improve the efficiency of technology-based public services. (Hong and Lee, 2023) At the central level, this initiative is part of a grand vision of national digital

transformation that aims to accelerate the use of information technology in government governance.

The central government also implements policies that encourage transparency and accountability, one of which is through the implementation of E-Government which aims to reduce corruption and increase efficiency in public services (Mensah et al., 2022). Through this policy, all government agencies are required to develop an integrated information system.

#### **4.1.2. Sumedang Regency Regional Government Policy**

At the regional level, especially in Sumedang Regency, digitalization policies are strongly driven by a strong local leadership vision (Kusdinar and Satibi, 2023). Based on interviews with key informants, the Regent of Sumedang showed a high commitment to the implementation of digital governance, where one of the breakthroughs made was the recruitment of 50 IT experts to manage internal application development in-house.

This policy allows local governments to independently develop various public service applications without relying on external vendors. This is important because it avoids problems related to system development flexibility (Charliyan, 2023), which is often an obstacle when using vendor services. As expressed by Mr. Ellan Rohelan Nagari in an interview, this strategy helps cut bureaucracy in developing faster and more efficient digital systems.

In addition, Sumedang Regency has also launched several digital-based public service applications such as WAKEPO (WhatsApp Information Needs and Online Services) and Simpati (Stunting Prevention Information System). These two applications are part of Sumedang's digitalization policy to facilitate public access to government services.

#### **4.1.3. Interoperability and System Integration Policy**

One of the important policies in implementing digital governance in Sumedang is the integration of information systems in various Regional Apparatus Organizations (OPD) (Tahir et al., 2022). According to informants, the main challenge in implementing a digital system is the existence of information silos in each agency, which results in the inability to share data efficiently. To overcome this, a policy was taken by uniting all systems in one platform called a single home, allowing OPDs to work more collaboratively. (Charliyan, 2023)

This approach is in line with the findings (Estevez and Janowski, 2013) which state that coordination between government agencies is the key to success in implementing digital technology in the public sector. If coordination does not go well, there will be obstacles to achieving the full potential of the digital system being implemented.

#### **4.1.4. Stakeholder Engagement Policy**

In addition to internal policies, the involvement of external stakeholders is also an important part of the implementation of digital governance in Sumedang. In this case, the Sumedang Regency Government involves various parties, ranging from Telkom University, Telkomsel, to Wabiknas in developing its digital system. This policy allows local governments to utilize external resources to improve the quality of existing systems (Keban, 2004)

The involvement of various parties reflects the collaborative governance approach, where the government works together with the private sector and the community to achieve larger goals. As expressed by (Keban, 2004) , effective governance involves various actors, including the community, government, and the private sector, who collectively contribute to solving social problems.

#### **4.1.5. Strengthening through Regional Regulations**

At the regulatory level, before the Sumedang Regional Secretary took office at the provincial level, the Digital Transformation Regional Regulation (Perda) was passed to ensure that all digital initiatives in Sumedang continue, regardless of the change in leadership. This is important in creating sustainable digital policy stability in the future.

### **4.2. Standards Used in the Implementation of Digital Governance**

The implementation of digital governance in government, especially at the regional level, is greatly influenced by the standards used to ensure the effectiveness, efficiency and security of the systems implemented (Roundtable, 2014) In Sumedang Regency , this standard covers various aspects ranging from data management, technology infrastructure, to the regulation of interactions between stakeholders. This standard policy not only follows the provisions set by the central government, but is also adapted

according to local needs so that the implementation of digitalization can run more optimally.

#### **4.2.1. National Standards Referring to SPBE Policy**

The standards implemented in Sumedang Regency mostly follow the direction of the Electronic-Based Government System (SPBE) regulated by Presidential Regulation No. 95 of 2018. SPBE sets several standards related to data governance, information security, and interoperability between systems. Based on this policy, every government agency is required to use the ISO 27001 information security standard which regulates the protection of sensitive data and mitigates the risk of information leakage. In addition, the use of a TOGAF (The Open Group Architecture Framework)-based system architecture is the main guideline to ensure integration between systems used by various government agencies. (Roundtable, 2014)

In Sumedang , the implementation of this standard can be seen in how the local government builds an interconnected information system architecture.

#### **4.2.2. Technology Infrastructure Standards**

Sumedang Regency implements strict technology infrastructure standards to support good digital governance. (This certification ensures that the server used can guarantee data availability, integrity, and confidentiality) The implementation of this standard is also seen in technical steps such as storing backup data in different locations to anticipate potential disasters or physical damage to the main server. (Zhang, Jiang and Li, 2023)

#### **4.2.3. Internal Application Development Standards**

One of the advantages demonstrated by Sumedang Regency in implementing digital governance is its success in building an internal application development system managed by local human resources (HR). This policy, supported by the recruitment of new IT staff, allows every application development to be carried out in-house, without the involvement of external vendors. With this standard, all applications developed in Sumedang follow a strict SDLC (System Development Life Cycle) cycle, starting from design, development, and testing, to implementation and maintenance.



This approach refers to the IEEE 12207 standard (Aprilinda, Puspa and Affandy, 2019), which is an international standard for software development and maintenance. The use of this standard provides greater flexibility for local governments in adapting existing systems without having to go through a long bureaucratic process, as is common when applications are developed by third parties (vendors). This also reduces the potential for dependence on vendors, which is often an obstacle to sustainable system development.

#### **4.2.4. Standards of Use of Applications for Public Services**

Sumedang Regency, interoperability standards between applications are the main focus in ensuring that all systems can be connected and communicate with each other. The government has implemented the RESTful API (Application Programming Interface) standard as the main protocol for integrating various existing applications. The use of this standard ensures that each application can exchange data in real time without obstacles (Headayetullah and GK, 2010). This also prevents data duplication that can hinder the accuracy and efficiency of information management in various government agencies.

In addition to API, the use of Open Data Standards is also implemented to increase transparency. With this standard, data collected from various applications in Sumedang Regency can be accessed by the public, by the transparency principles stipulated in the SPBE policy. This step also refers to the recommendations of the United Nations e-Government Survey (2020) which emphasizes the importance of data openness standards to encourage public participation and increase government accountability.

#### **4.2.5. Establishing Collaboration Standards with Stakeholders**

Sumedang Regency applies collaboration standards based on the Public-Private Partnership (PPP) model. In the interview, it was stated that various parties such as Telkom University, Telkomsel, and several other technology companies are actively involved in the development and maintenance of digital systems. This standard ensures that there is clarity in the roles and responsibilities of each party involved, thus minimizing the potential for conflict and disagreement during the implementation process. (Personal and Archive, 2008)

This collaboration also uses the MOU (Memorandum of Understanding) standard to determine the scope of cooperation and clear indicators of success. This is in line with

the concept of Collaborative Governance outlined by ( Ansell and Gash, 2008) where the success of collaboration is highly dependent on the existence of trust and shared understanding between the actors involved.

### **4.3. Human Resources**

Human resources (HR) plays a crucial role in ensuring the success of digitalization implementation in government. In Sumedang Regency, the role of HR is very strategic in carrying out the digital transformation process, starting from the development of technology infrastructure, to stakeholder involvement. Based on interviews and literature reviews, the following is a discussion of HR involved in this process.

#### **4.3.1. Recruitment and Development of Technology Human Resources**

Sumedang Regency took a significant step by recruiting technology experts to support the digitalization process. Based on interviews, one of the innovative policies implemented by the Sumedang Regency government was to recruit 50 experts in the field of information technology, although initially only 36 people were approved. This recruitment not only increased the workforce but also ensured that the development of digital applications and systems was carried out by internal personnel. (Ester et al. , 2023)

This is by the capacity building approach, where the development of HR capacity is an important element in digital transformation. Sumedang calibrates the skills of each IT staff to ensure that they are placed according to specific skills, such as hardware, software, and iOS and Android-based application development. This step allows for improved work quality and response speed to technology needs in various government agencies.

According to (West, 2004) skilled human resources with in-depth technological knowledge are one of the main foundations in implementing digital governance . Without adequate human resources, local governments will have difficulty achieving the desired digital transformation goals.

#### 4.3.2. House Development by Civil Servants

The decision to develop digital systems in-house is a prominent feature of the digitalization process in Sumedang. Civil servants involved in this process are trained and given full responsibility for developing and maintaining applications used by the local government. This is different from the common practice in many regions, where technology development is often outsourced to external vendors.

Through an in-house approach, Sumedang Regency can quickly adjust the developed application according to needs without going through a long bureaucratic process. IT personnel who have been trained in the government can make changes or system updates more quickly, which in many cases avoids delays because there is no dependence on external parties.

(Estevez and Janowski, 2013) Noted that the ability to independently manage technology systems within government organizations is an important indicator of successful digitalization. Dependence on external vendors often creates problems in terms of flexibility and cost. Therefore, the in-house development model carried out in Sumedang can be an example for other regions.

#### 4.3.3. HR Competency Training and Development

In addition to recruitment, the Sumedang Regency government also provides intensive training to IT personnel. The goal is to ensure that every worker involved has a deep understanding of the latest technology and can manage complex digital systems. This training also involves external institutions such as Telkom University and Wabiknas , which act as strategic partners in increasing HR capacity (Padilla, 2023)

This training is important to maintain the sustainability of digital initiatives that have been implemented. According to ((2005) , 2005) HR training is a very important component in the digital transformation process, because technology is developing rapidly and the government needs to adapt to these changes to maintain relevance and effectiveness.

#### 4.3.4. Inter-Agency Collaboration and Coordination

The success of digitalization implementation in Sumedang also depends on effective coordination between government agencies. Based on the interview results, each

regional apparatus (OPD) has IT personnel who work collaboratively under the supervision of the Communication and Information Service (Kominfo). Kominfo acts as the main coordinator in managing technology infrastructure and ensures that all government agencies are connected through the same platform.

This approach allows for optimal use of resources, where each IT staff in each OPD contributes to the development of the overall digital system. (Ansell and Gash, 2008) emphasize that good collaboration between various government agencies is an important element in digital governance, because it helps eliminate sectoral egos and encourages the creation of synergies.

#### **4.3.5. System Management and Maintenance by Internal Experts**

The recruited IT staff are not only responsible for developing applications, but also for maintaining and managing digital systems that have been implemented. This includes monitoring data security, developing new features, and fixing bugs or system errors that occur. With internal management, Sumedang Regency can better maintain data security and reduce the risk of information leaks.

The management of digital systems by internal experts allows for faster responses to emerging issues, reduces downtime, and increases the efficiency of public services. According to (Moon, MJ and Norris, 2005), the ability to manage technology systems effectively and efficiently is one of the key factors in the success of e-government.

#### **4.4. Stakeholder Engagement**

Stakeholder involvement is one of the important aspects of the successful implementation of digital governance in Sumedang Regency. Collaboration between local governments and various external parties, including the private sector, academics, and the community, not only accelerates the digitalization process, but also improves the quality of the system being developed. Based on the results of interviews and literature reviews, the following is a discussion of the role of stakeholders in supporting digitalization in Sumedang Regency.

#### 4.4.1. Collaboration with the Private Sector

Sumedang Regency Government actively involves the private sector in developing digital systems. One example of strong collaboration is with Telkomsel and Telkom University. Based on interviews, Telkomsel plays a role in providing network infrastructure to support digital-based public service applications, such as WAKEPO (WhatsApp Information Needs and Online Services) and SIMPATI (Integrated Stunting Prevention Information System ) (Noorman et al. , 2023) .

In addition, Telkom University is involved in developing human resources (HR) capacity in the field of technology through training and education programs. The involvement of the private sector such as Telkomsel and Telkom University allows local governments to access more sophisticated technology and expertise without having to spend a lot of money, because most of this support is provided within the framework of strategic partnerships.

In digital governance theory, collaboration with the private sector is included in the Public-Private Partnership (PPP) approach. (Bertot, JC, Jaeger, PT, & Grimes, 2010) Emphasizes the importance of collaboration between the government and the private sector in providing digital infrastructure and services, which ultimately helps strengthen efficiency and innovation in public services.

#### 4.4.2. The Role of Academics in Policy and Technology Development

In addition to the private sector, the role of academics is also very important in the digitalization process in Sumedang Regency. Telkom University is not only involved in HR training but also plays a role in providing input and guidance related to the development of digital policies. This collaboration includes the development of digitalization implementation methodologies and the provision of experts who assist the government in formulating technology policies that are by regional needs The role of academics in assisting the digitalization process in Sumedang is in line with the theory of Collaborative Governance, where the government collaborates with educational and research institutions to ensure that policies taken are based on appropriate data and knowledge. (Ansell and Gash, 2008) stated that this collaboration makes a major contribution to increasing the legitimacy and effectiveness of policies, because it involves parties who have in-depth knowledge and experience ( Mokuolu, Bolarinwa and Opadiran, 2023)

#### **4.4.3. Community Involvement in the Development of Digital Public Services**

In addition to the private sector and academics, the community is also actively involved in the implementation of digitalization in Sumedang. The community acts as the main user of digital applications developed by the local government, such as WAKEPO and SIMPATI. Community involvement in the use of these digital services is very important to ensure that the applications developed truly meet the needs of the community (Vlcek, Somerton and Vlcek, 2023)

Local governments are making various efforts to improve digital literacy in the community, especially in areas where access to technology is still limited. This digital literacy is important so that the community can make maximum use of existing technology, so that they can provide constructive feedback for improving services. This approach is in line with the principles of Good Governance, especially the aspect of public participation emphasized by UNDP (1997), where community participation is one of the indicators of successful governance.

#### **4.4.4. Coordination with the Central Government and Related Agencies**

Sumedang Regency also involves the central government and related agencies, such as the Ministry of Communication and Information (Kominfo) and the Ministry of Home Affairs. The central government provides strategic direction in the form of regulations, such as Presidential Regulation No. 95 of 2018 concerning the Electronic-Based Government System (SPBE), which is the main guideline in the development of digital infrastructure.

Collaboration with central government agencies ensures that digitalization in Sumedang Regency is in line with national policies, so that it can obtain the necessary technical and financial support. ((2005) , 2005) highlighted that multi-actor involvement in the implementation of digitalization, including central and regional agencies, is very important in ensuring the overall success of e-government.

#### **4.4.5. The Role of Stakeholders in System Interoperability**

The interoperability of information systems between government agencies is one of the main challenges in implementing digitalization. To overcome this, the Sumedang

Regency government is working with various stakeholders to ensure that the systems developed can be interconnected. Telkomsel, Telkom University, and Kominfo play a role in ensuring that different information systems can be integrated smoothly.

This approach is by the principles of Open Government, where collaboration and openness are the foundations of developing an integrated system. According to Norris and Moon (2005), interoperability between systems is one of the key factors in increasing the efficiency of digital-based government, because it allows data to be accessed and used by various agencies effectively.

## 5. Conclusion

This study highlights the importance of implementing digital governance in improving efficiency, transparency, and public participation in Sumedang Regency. Based on four main indicators—government policies, implementation standards, human resources (HR), and stakeholder engagement—this study shows that digital transformation in Sumedang has been going well, although it still faces several challenges.

First, in terms of policy, Sumedang Regency has adopted Presidential Regulation No. 95 of 2018 concerning Electronic-Based Government Systems (SPBE) as a legal basis for digitalizing governance. Local initiatives such as WAKEPO and SIMPATI demonstrate the commitment of local governments to utilizing digital technology to improve public services. However, policy adaptation to technological developments and consistency of implementation across OPDs are still challenges that need to be overcome.

Second, the implementation of international standards such as ISO 27001 and ISO 9001 ensures security and quality in the management of digital data and systems. However, the challenges of interoperability between systems show that full integration between various digital applications still requires improvement, especially in terms of infrastructure and system maintenance.

Third, human resource development is a crucial element in the success of digital transformation in Sumedang. Although the recruitment of IT experts has helped increase internal capacity, digital literacy among government officials still needs to be improved. More structured and sustainable training programs are essential to ensure that government officials can optimally utilize technology in their daily tasks.

Fourth, the involvement of stakeholders, such as Telkomsel, Telkom University, and Webinars, has helped accelerate the digitalization process in Sumedang. However,

community participation in the development and use of digital applications still needs to be improved so that the system built is truly by local needs.

Overall, the success of digital governance in Sumedang is highly dependent on the synergy between supportive policies, consistent implementation of standards, sustainable human resource development, and more inclusive stakeholder engagement. With the right strategy, Sumedang has the potential to become a model for digital governance at the regional level that can be applied in other regions in Indonesia.

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