

The Implementation of Digital Governance in Indonesia: A Systematic Review of Challenges and Opportunities

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Abstract:

The implementation of digital governance in Indonesia is a strategic step towards achieving more efficient, transparent, and participatory government management through the use of digital technology. This study aims to analyze the challenges and opportunities Indonesia faces in the process of government digitalization using the Systematic Literature Review (SLR) method on various relevant literature. The results show that the implementation of digital governance in Indonesia has made significant progress, marked by regulations such as Presidential Regulation No. 95 of 2018 on the Electronic-Based Government System (SPBE) and various public service digitalization initiatives. However, the challenges faced include limited digital infrastructure, low digital literacy among the public, cybersecurity threats, and unequal human resource capacities across government institutions. On the other hand, the opportunities that can be leveraged include the increasingly widespread development of digital infrastructure, the enhancement of digital literacy through various training programs, collaboration between the government, private sector, and civil society, as well as the utilization of cutting-edge technologies such as Artificial Intelligence, Big Data, and Blockchain to support government transparency and efficiency. This study highlights the importance of strengthening regulations, enhancing human resource capacities, integrating systems comprehensively, and fortifying cybersecurity to support the success of digital governance in Indonesia. By addressing the challenges and seizing the available opportunities, government digitalization in Indonesia has the potential to create more adaptive, transparent, and inclusive governance in the digital era.

Keywords: Digital governance, Electronic-Based Government System (SPBE), Challenges, Opportunities, Indonesia

1. Introduction

The rapid development of digital technology has brought significant changes to various aspects of life, including government administration. The concept of digital governance has emerged as a response to the need for more efficient, transparent, and participatory government management through the use of information and communication technology (ICT) (Dunleavy et al., 2006). In Indonesia, the implementation of digital governance is one of the efforts to improve the quality of public services and strengthen government accountability.

The implementation of digital governance in Indonesia aligns with global trends that position technology as a tool to enhance the accessibility and efficiency of public services. According to Heeks (2001), digital governance enables governments to leverage digital technology to support administrative processes and decision-making while simultaneously strengthening the relationship between the government and society. In the Indonesian context, digital transformation in governance has become a priority driven by various regulations, such as Presidential Regulation Number 95 of 2018 on the Electronic-Based Government System (SPBE).

The implementation of SPBE in Indonesia has shown significant development in recent years. Based on the evaluation conducted by the Ministry of State Apparatus Empowerment and Bureaucratic Reform (PANRB)

in 2023, as many as 621 government institutions have undergone SPBE evaluations. Among these, 24 institutions received a "satisfactory" rating, with the national SPBE index average reaching 2.79, categorized as "good" (Kementerian PANRB, 2023).

However, challenges remain in achieving the set targets. In the 2021 SPBE evaluation, around 70% of central and regional institutions had not reached the expected index target. Of the 358 institutions that did not meet the target, 315 were regional governments, and 43 were central institutions. This indicates the need for improvement in integrated SPBE management at both national and regional levels.

One important initiative in supporting SPBE is the government's plan to integrate approximately 2,700 government agency data centers into 8 to 12 National Data Centers (PDN). This step aims to increase efficiency and simplify access and data management on a national scale. Additionally, several government institutions have shown commendable performance in implementing SPBE. For instance, Cimahi City ranked among the top five SPBE indexes in the city government category, scoring 4.02 with an "Excellent" rating in 2023. Similarly, the West Nusa Tenggara (NTB) Provincial Government received a "Good" rating, placing eighth nationally.

On the other hand, digital governance offers opportunities to create more transparent and accountable governance. Through digital platforms, citizens can more easily access public information, provide feedback, and monitor government performance. According to Janssen and Estevez (2013), the digitization of government processes can increase transparency and accountability by providing real-time access to information and decision-making processes.

Public participation is also a crucial aspect of digital governance implementation. With digital platforms, the public has greater opportunities to be involved in policymaking and policy implementation oversight. For example, the "Lapor!" initiative, developed by the Presidential Staff Office, provides a channel for citizens to report public service issues directly to the government (Puspitasari & Ishii, 2016).

Furthermore, digital governance plays a role in accelerating bureaucratic processes, which have long been perceived as slow and complicated. With digitalized services, various administrative procedures that previously required long processing times can be streamlined, making public services faster and more efficient (Cordella & Tempini, 2015). This aligns with the concept of good governance, which emphasizes efficiency, accountability, and transparency in government administration.

Nevertheless, the success of digital governance implementation heavily depends on the government's commitment to building supportive regulations and developing human resource capacity. According to Gil-García et al. (2007), developing the capacity of government officials in utilizing digital technology is a key factor in ensuring the sustainability of digitalization programs.

Moreover, data security and privacy are issues that cannot be overlooked in digital governance implementation. Amid the increasing number of cyberattacks, the government must ensure that digital systems have adequate security measures to protect citizens' personal data and prevent potential misuse of information (Bannister & Connolly, 2011).

In the context of globalization and the Fourth Industrial Revolution, digital governance is no longer an option but a necessity for governments aiming to achieve modern and responsive public services. The Indonesian government must continue to innovate and strengthen collaboration among various stakeholders to ensure the success of this digital transformation.

Therefore, this study aims to analyze the implementation of digital governance in Indonesia through a Systematic Literature Review (SLR) approach, identifying the challenges faced and the opportunities that can be leveraged to support the creation of better governance.

2. Literature Review

Digital Governance, often referred to as e-governance, refers to the use of digital technology in governmental processes to enhance efficiency, transparency, and public participation (Heeks, 2001). This concept relies on leveraging information and communication technology (ICT) to support government functions, ranging from delivering public services to policymaking.

a. Concept of Digital Governance

According to Dunleavy et al. (2006), digital governance represents the evolution from traditional bureaucracy towards a more adaptive governance model, where digital technology is used to accelerate administrative processes and increase citizen involvement in decision-making. In the Indonesian context, digital governance serves as a framework that supports public service improvement through the implementation of the Electronic-Based Government System (SPBE), regulated under Presidential Regulation Number 95 of 2018.

b. Key Pillars of Digital Governance

Several key pillars in digital governance include:

- **Transparency:** Digital technology enables governments to provide open access to information for the public, which can strengthen public trust in government institutions (Janssen & Estevez, 2013).
- **Accountability:** The digitalization of government processes facilitates the tracking and supervision of policies, providing room for public oversight of government performance (Cordella & Tempini, 2015).
- **Public Participation:** The adoption of digital technology offers the public opportunities to actively participate in the policymaking process, such as through citizen aspiration platforms (Puspitasari & Ishii, 2016).

c. Benefits of Digital Governance:

1. Increased efficiency in bureaucratic processes through service digitalization:

Digital governance allows governments to streamline bureaucratic processes that previously required manual and multi-layered procedures. By utilizing ICT, various public services can be accessed online, reducing time and costs needed for administrative matters. For instance, licensing services that once took weeks can now be processed in days through electronic systems. According to Cordella and Tempini (2015), administrative process digitalization accelerates public service delivery by eliminating unnecessary bureaucratic hurdles, thereby creating efficiency in service delivery.

2. Provision of broader public access to information:

One of the key pillars of digital governance is transparency, realized through broader public access to information. Digital platforms enable the public to quickly and easily obtain information about government policies, programs, and performance. This supports the principle of public information disclosure as regulated in Law Number 14 of 2008 concerning Public Information Disclosure. With better access to information, the public can understand decision-making processes and monitor policy implementation more transparently (Janssen & Estevez, 2013).

3. Enhancing public participation in policy oversight and evaluation:

Digital governance creates opportunities for the public to engage directly in government processes through various digital platforms. For example, citizen complaint applications like "Lapor!" provide

a platform for residents to report issues they encounter in public services. Furthermore, social media and government portals serve as channels for gathering public aspirations and involving them in policy evaluation. Bannister and Connolly (2011) emphasize that public participation through digital technology not only enhances government accountability but also strengthens public ownership over governance processes.

With these benefits, digital governance becomes a key element in supporting the creation of a more inclusive, efficient, and accountable government in Indonesia. If you'd like to add specific examples or other data, let me know!

d. Challenges of Digital Governance in Indonesia: Here is a more detailed explanation of the challenges in implementing digital governance in Indonesia:

1. **Technological Infrastructure:**

One of the primary challenges in implementing digital governance in Indonesia is the limitation of technological infrastructure, particularly unequal internet access across regions. According to data from the Central Bureau of Statistics (BPS) in 2022, around 78% of Indonesian households had internet access, but there is a significant gap between urban and rural areas. Remote areas, especially in Eastern Indonesia, still face obstacles such as the lack of stable and fast internet networks. Without adequate infrastructure, digital service implementation is hampered, preventing some communities from optimally accessing electronic government services. Government efforts such as the Palapa Ring project and providing village internet networks through the Bakti Kominfo program are crucial steps, but challenges in maintaining stable connectivity remain a task that needs addressing (Kominfo, 2022).

2. **Digital Literacy:**

Apart from infrastructure constraints, varying levels of digital literacy among the public also pose a significant challenge in implementing digital governance. Digital literacy not only covers the ability to use technological devices but also the understanding of how to utilize digital services wisely and safely. A survey conducted by Katadata Insight Center in 2021 revealed that only 37.8% of Indonesians had an adequate level of digital literacy. This low level of understanding leads to gaps in access and use of digital government services, particularly for the elderly and communities in remote areas. Without increased digital literacy, the risks of service misuse, misinformation spread, and online fraud become higher (Mutiarin, 2017).

3. **Data Security:**

Cybersecurity threats are a serious challenge in implementing digital governance. The increasing digitalization of public services in Indonesia parallels the rising risks of cyberattacks on government systems. Data from the National Cyber and Encryption Agency (BSSN) shows that in 2022, Indonesia experienced over 1.6 billion traffic anomalies potentially classified as cyberattacks. Data breaches, system hacking, and ransomware threats are major concerns that need serious attention. Public data security must be a priority in every government digitalization process, including enforcing strict security protocols and enhancing human resource capacity in the cybersecurity field (BSSN, 2022).

Here are some previous studies related to the implementation of digital governance in Indonesia: In her research, Widianingrum (2020) revealed that the success of digital governance implementation is highly influenced by the commitment of local governments to support digital transformation. This commitment is evident in the formulation of regulations that support digitalization, the allocation of special budgets for technology development, and the enhancement of civil servants' (ASN) capacity to adopt digital technology.

The study also found that regions with visionary leaders oriented towards innovation tend to adopt electronic-based government systems (SPBE) more rapidly. For example, the Surabaya City Government successfully built an integrated digital public service system due to full support from the local government in terms of regulations and budgeting. This study emphasizes that local government commitment is the primary foundation in building a sustainable digital ecosystem. Meanwhile, research conducted by Pratama (2019) highlights the importance of collaboration between the government, the private sector, and the public in supporting successful government digitalization. This collaboration is key to creating innovative and sustainable solutions. In the Indonesian context, Pratama found that private sector involvement plays a crucial role in providing digital infrastructure and developing public service applications. For instance, partnerships between the government and technology companies in building online service systems like "Lapor!" and "Qlue" demonstrate how cross-sector synergy can accelerate digital governance implementation. On the other hand, public participation is equally vital, especially in providing input regarding service needs and participating in the oversight and evaluation of digital policies.

3. Methodology

The study employs the Systematic Literature Review (SLR) method to examine the implementation of digital governance in Indonesia. The SLR method was chosen because it allows researchers to systematically collect, assess, and analyze various relevant literature to gain a comprehensive understanding of the challenges and opportunities in digital governance implementation.

4. Results and Discussions

a. Implementation of Digital Governance in Indonesia

Based on literature review results, the implementation of digital governance in Indonesia has experienced significant development, especially after the enactment of Presidential Regulation Number 95 of 2018 concerning the Electronic-Based Government System (SPBE). This regulation serves as the legal foundation for digital transformation within the government environment, aiming to improve the efficiency, transparency, and accountability of public service delivery. Since the regulation was enacted, various strategic initiatives have been implemented, including the digitization of public services, integration of the national data center, and the development of applications that facilitate public access to government information and services.

One of the initial steps in implementing digital governance is the construction of basic infrastructure that supports the digitization process. This infrastructure includes providing equitable internet access, building data centers, and implementing secure and integrated communication networks between government agencies. For example, the government's Palapa Ring project aims to provide internet access to remote areas, as an effort to reduce the digital divide in Indonesia (Ministry of Communication and Informatics, 2022).

In addition to infrastructure, the digitization of public services has become one of the main aspects of digital governance implementation. Various government agencies have started shifting from manual systems to electronic-based systems, such as e-Procurement for goods and services procurement, e-Budgeting for budget planning, and e-KTP, which simplifies population administration processes. For instance, the city of Surabaya developed the Surabaya Single Window platform, which integrates various public services into one digital portal, accelerating the licensing process and minimizing the potential for corruption (Widianingrum, 2020).

Furthermore, the government also focuses on integrating information systems between agencies to support faster and more accurate decision-making. One of the ongoing strategic projects is the construction of the National Data Center (PDN), designed to unify more than 2,700 government agency data centers into one centralized system. This integration is expected to improve information management efficiency, reduce data

redundancy, and strengthen government data security (Ministry of Administrative and Bureaucratic Reform, 2023).

On the other hand, the development of public service applications also supports community involvement in the governance process. Applications like Lapor! and Qlue enable citizens to report issues in their surroundings directly to the government. With these applications, the government can respond more quickly and involve the community in monitoring public services. In fact, some regions, like Banyuwangi, have launched village-based service applications to speed up services to communities at the grassroots level (Pratama, 2019).

The implementation of digital governance also encourages the realization of government transparency and accountability. Through open data portals, the public can now monitor budget usage, performance achievements, and policies taken by the government. Initiatives such as One Data Indonesia aim to provide accurate, up-to-date, and integrated data to support data-driven policymaking (Statistics Indonesia, 2021).

However, the success of digital governance implementation cannot be separated from the participation of various parties, ranging from central and regional governments, the private sector, to civil society. A study conducted by Widianingrum (2020) highlights that the involvement of the private sector in developing digital infrastructure is key to accelerating digital transformation. Meanwhile, Pratama (2019) emphasizes the importance of multi-stakeholder collaboration in supporting the success of government digitalization, including through digital literacy training for state apparatus and society.

Nevertheless, challenges in implementing digital governance in Indonesia remain significant. One such challenge is the digital divide between urban and rural areas, where internet access and technology infrastructure in remote areas are still limited. Additionally, the adaptation of government officials to digital systems also requires time, especially in agencies that are not yet accustomed to using technology in daily work processes.

With the various initiatives and strategic steps that have been undertaken, the implementation of digital governance in Indonesia shows great potential in supporting more modern, transparent, and responsive government management. However, achieving optimal results requires a strong commitment from all parties in supporting this digitalization process, as well as periodic evaluations to ensure its implementation aligns with the established objectives.

b. Challenges in Implementing Digital Governance

Although the implementation of digital governance in Indonesia has shown significant progress, various challenges still need to be addressed to ensure optimal digital transformation. These challenges include aspects of technological infrastructure, digital literacy, data security, as well as commitment and human resource capacity.

1. **Technological Infrastructure** One of the main challenges in implementing digital governance in Indonesia is the uneven distribution of technological infrastructure across the country. Limited internet access, especially in remote and archipelagic areas, poses a major obstacle to equitable digital services. Data from the Central Statistics Agency (BPS) in 2022 shows that internet penetration in urban areas reached over 70%, while in rural areas, it was still below 50% (BPS, 2022). Additionally, unstable communication networks and limited technological equipment in some government institutions hinder the optimal implementation of digital services. Efforts such as the Palapa Ring Project aim to expand internet access to remote areas; however, the success of this project still requires support from various parties and strict supervision to ensure equal digital access (Mutiarin, 2017).

2. **Digital Literacy** Another challenge is the varying levels of digital literacy among the public and government officials. Digital literacy encompasses individuals' ability to access, understand, and effectively use digital technology. Unfortunately, in Indonesia, there is still a knowledge gap in utilizing this technology, particularly among communities less exposed to digital developments. According to Puspitasari and Ishii (2016), low digital literacy is a major inhibiting factor in the adoption of digital services, as the public has not fully understood the benefits and usage of these services. Moreover, the lack of training programs and digital education at both community and government levels exacerbates this situation. Therefore, systematic and continuous efforts are needed to enhance digital literacy through formal education and community-based training.
3. **Data Security** Data security is a crucial issue in the implementation of digital governance. As digitalization increases, so does the risk of cyberattacks and data breaches. According to reports from the National Cyber and Crypto Agency (BSSN), the number of cyberattacks in Indonesia continues to rise each year, with over 400 million traffic anomalies detected throughout 2022 (BSSN, 2022). These attacks include personal data theft, public service system hacking, and malware spread that could potentially damage government systems. Weak security systems in some government institutions increase the risk of privacy violations and data misuse. Bannister and Connolly (2011) emphasize the importance of building robust security systems, including implementing data encryption, using multi-layered authentication systems, and enhancing human resource capacity to combat cyber threats. Additionally, strict regulations and continuous supervision are required to protect public data and maintain public trust in digital services.
4. **Commitment and Human Resource Capacity** Another equally important challenge is the commitment and capacity of human resources (HR) in supporting the implementation of digital governance. The uneven ability of government officials to operate digital systems poses an obstacle to the digital transformation process. Gil-García et al. (2007) highlight that developing HR capacity is a key factor in the success of digital governance because even the most advanced technology will not function optimally without the support of skilled and competent users. Unfortunately, many government officials, especially in remote areas, have not received adequate training regarding the use of digital technology in daily work processes. Furthermore, resistance to change is also a challenge, where some employees still feel comfortable with the manual procedures previously applied. To address this, structured and continuous training programs for state officials are required, along with the formation of special teams tasked with assisting the digitalization process in each government institution.

Overcoming these challenges requires collaborative efforts involving various parties, including the government, private sector, academics, and civil society. With the right support, the implementation of digital governance in Indonesia is expected to become more effective, equitable, and sustainable, thereby supporting the creation of more transparent, efficient, and accountable government governance.

c. Opportunities in Implementing Digital Governance

Opportunities to be Utilized Despite facing various challenges, the implementation of digital governance in Indonesia presents several opportunities that can be leveraged to support the creation of more efficient, transparent, and accountable government administration. These opportunities encompass aspects of digital infrastructure, improving public literacy, multi-stakeholder collaboration, and harnessing the latest technological advancements.

1. **Development of Digital Infrastructure** One of the greatest opportunities in supporting digital governance is the government's ongoing digital infrastructure development program, particularly to expand internet access in 3T areas (Underdeveloped, Frontier, and Outermost regions). The Palapa Ring program, completed in 2019, serves as a milestone in providing backbone internet connectivity across Indonesia, especially in areas previously difficult to reach by communication technology.

Additionally, the National Data Center (PDN) project aims to integrate thousands of government agency data centers scattered across various regions into a more centralized and efficient system. With adequate infrastructure, digital services access is expected to become more evenly distributed, allowing communities across the nation to enjoy the benefits of government digitalization.

2. **Enhancing Digital Literacy** Alongside digital infrastructure development, another opportunity to be harnessed is improving digital literacy among the public. Digital literacy is crucial for ensuring the success of digital governance, as tech-savvy citizens can more easily access digital services and participate in transparent governmental processes. Educational programs and training on digital technology utilization need to be continuously promoted, both through formal education curricula and non-formal channels such as community training and outreach activities at the village level. According to Cordella and Tempini (2015), enhancing digital literacy has the potential to broaden community involvement in monitoring and providing feedback on public policies, thereby fostering a more harmonious relationship between the government and its citizens.
3. **Multi-Stakeholder Collaboration** Another highly promising opportunity is strengthening multi-stakeholder collaboration. In the context of digital governance, synergy between the government, private sector, academia, and civil society plays a crucial role in accelerating digitalization processes and fostering richer innovations. Janssen and Estevez (2013) emphasize that multi-stakeholder collaboration can support the development of digital solutions that are more adaptive to local needs while enriching the digital ecosystem through knowledge and experience sharing. For instance, the involvement of technology companies in developing public service applications or community complaint platforms can accelerate technology adoption in the government sector. Additionally, universities play a role in providing research and training to enhance human resource capacity within the government.
4. **Leveraging Cutting-Edge Technology** Rapid advancements in technology also provide significant opportunities to strengthen digital governance in Indonesia. The adoption of technologies such as Artificial Intelligence (AI), Big Data, and Blockchain holds great potential for increasing the efficiency and transparency of government processes. AI technology, for example, can be utilized to analyze massive amounts of data in real time to support faster and more accurate decision-making. Meanwhile, Blockchain technology offers a transparent and immutable transaction recording system, making it highly suitable for implementation in public administration systems to minimize the potential for irregularities. Heeks (2001) highlights that adopting advanced technology not only enhances efficiency but also builds public trust in government integrity through greater transparency.
5. **Strengthening Regulatory Support** In addition to technology, strengthening regulatory support presents another opportunity to advance digital governance in Indonesia. Presidential Regulation No. 95 of 2018 on Electronic-Based Government Systems (SPBE) serves as a legal framework for both central and regional governments to adopt digital technology to improve the quality of public services. This regulation also encourages every government agency to design strategic digitalization plans and conduct periodic evaluations of the achievements made. With clear regulations in place, the digital transformation process can proceed in a more directed and measurable manner.
6. **Increasing Public Participation** Rising public awareness of the importance of involvement in governmental processes is another crucial opportunity. The presence of various digital platforms such as Lapor! and Qlue allows citizens to directly voice their aspirations and report public issues to the government. By strengthening these participation mechanisms, the government not only receives feedback more quickly but also builds a more inclusive relationship with the public.

By capitalizing on these opportunities, the implementation of digital governance in Indonesia is expected to become more effective, strengthen transparency, and improve the quality of public services more equitably

across the nation. Realizing these goals requires strong government commitment and close collaboration with various stakeholders to create a sustainable digital ecosystem oriented toward public service.

d. Policy Implications

The findings of this study emphasize that the success of digital governance in Indonesia heavily relies on the government's commitment to formulating policies that support digital transformation, developing adaptive regulations, and enhancing the capacity of human resources. In the context of policy, several key aspects require special attention, namely regulatory strengthening, improving the competence of state apparatus, system integration, cybersecurity, and public participation.

1. Regulatory Strengthening and Legal Framework

The government's commitment to supporting digital governance must be realized through comprehensive regulations that are adaptive to technological developments. Presidential Regulation No. 95 of 2018 on the Electronic-Based Government System (SPBE) serves as an essential initial foundation. However, field implementation requires more technical derivative regulations to ensure that the digitalization process is well-directed and measurable at every level of government. Furthermore, policies promoting data openness (open data) are needed to support transparency and cross-sector collaboration. Regulatory strengthening should also cover clear standard operating procedures (SOP) related to data management, information technology governance, and continuous evaluation mechanisms to ensure the effective implementation of digital governance.

2. Human Resources (HR) Capacity Development

Enhancing the capacity of government officials is a crucial aspect of supporting successful digitalization. Training programs and digital competency development should be encouraged to equip government apparatus with relevant skills, such as data management, the use of information technology, and understanding cybersecurity. Additionally, the government can collaborate with universities and professional training institutions to accelerate the process of enhancing HR competencies. With a digitally proficient apparatus, electronic public service processes can run more efficiently and professionally.

3. System Integration and Interoperability Across Institutions

One of the major challenges in implementing digital governance is the lack of system integration between government institutions, leading to data overlap and inefficient service processes. To address this, policies that encourage system interoperability across different levels of government, from central to regional, are required. Developing a standardized SPBE architecture is a crucial step to ensure that every institution can connect and exchange information securely and efficiently. This integration not only simplifies inter-agency coordination but also speeds up services for the public.

4. Cybersecurity Strengthening and Data Protection

As the use of digital systems in governance increases, so do the threats of cyberattacks. Therefore, the government must prioritize policies focused on strengthening cybersecurity and protecting personal data. Strategies that can be undertaken include building a Cyber Security Operation Center, implementing strict data encryption protocols, and conducting regular cybersecurity incident handling simulations. Additionally, data protection policies must be reinforced by imposing strict sanctions on parties who violate these rules, thereby building public trust in the digital systems implemented by the government.

5. Communication Strategies and Increasing Public Participation

To ensure the success of digital governance, the government needs to develop effective communication strategies to raise awareness and increase public participation. Massive digital education campaigns through various platforms, such as social media, radio, television, and direct outreach to local communities, can serve as a means to introduce the benefits of governmental digitalization while educating the public on accessing digital services. Public participation can also be encouraged by providing open communication channels, such as online complaint portals and public discussion forums, ensuring that citizens feel involved in the policymaking process.

6. Establishing Evaluation and Monitoring Mechanisms

In addition to designing policies that support digitalization, the government must also build transparent and accountable evaluation and monitoring mechanisms. Regular evaluations of digital governance implementation at each institution are crucial to measure achievements, identify challenges, and formulate appropriate solutions. Establishing a special task force or independent body responsible for auditing government digitalization can be a strategic step to ensure that the implemented policies truly align with the intended objectives.

By formulating comprehensive and sustainable policies, Indonesia has a great opportunity to realize a government that is more transparent, efficient, and responsive to the needs of its citizens. These policy implications aim not only to strengthen the technical aspects of digitalization but also to drive a cultural shift in the governmental work environment to become more adaptive to technological advancements and more open to involving the public in development processes.

5. Conclusion

The implementation of digital governance in Indonesia has shown significant progress with the issuance of various strategic policies, such as Presidential Regulation No. 95 of 2018 on the Electronic-Based Government System (SPBE). Digital transformation in government governance aims to enhance transparency, efficiency, and accessibility of public services through the utilization of information and communication technology. Various initiatives that have been implemented, such as the digitalization of public services and the development of digital infrastructure, represent significant steps in supporting the administration of electronic-based government.

However, this study also reveals several challenges that need to be addressed promptly to ensure the digitalization process runs optimally. These challenges include infrastructure limitations in remote areas, varying levels of digital literacy among the public, increasingly complex cybersecurity threats, and limited human resource capacity in government institutions to operate digital systems. Additionally, the integration of systems between institutions, which has not yet fully harmonized, poses an obstacle to building an integrated digital ecosystem.

On the other hand, there are significant opportunities that can be leveraged to accelerate the implementation of digital governance. The increasingly widespread development of digital infrastructure, the enhancement of digital literacy through various training programs, and multi-stakeholder collaboration between the government, the private sector, and civil society are crucial drivers in the digitalization process. Furthermore, the adoption of emerging technologies such as Artificial Intelligence, Big Data, and Blockchain offers great potential to improve the efficiency and transparency of government processes.

The proposed policy implications include strengthening regulations that support digital transformation, enhancing the capacity of state apparatus human resources, comprehensive system integration, and reinforcing cybersecurity to protect public data. The government also needs to design effective communication strategies to increase public participation in supporting digital governance implementation. Additionally, regular evaluation of policy implementation is essential to ensure the sustainability of the digitalization process and achieve the desired goals.

By overcoming existing challenges and leveraging available opportunities, the implementation of digital governance in Indonesia has the potential to create more responsive, transparent, and inclusive government governance. The success of digital governance does not rely solely on technological aspects but also requires strong commitment from all stakeholders in realizing a government that is more adaptive to the changing times and societal needs.

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