



E-Governance and Development Planning: Case Study of Bandung City

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Abstract

E-governance planning plays a crucial role as a strategic step in the modernization of public services. This study uses a descriptive qualitative approach using interviews, observations, and document analysis to examine the development of E-Governance in Bandung City. The findings reveal that e-governance implementation focuses on improving data security, institutional arrangements, and information technology management. The government uses robust physical and software security measures, including security codes and penetration testing, to protect data. The city's SPBE index has improved steadily each year since the implementation of the e-government system. Institutional arrangements have been strengthened through central government legitimacy, clear regulations, and oversight by the Department of Administrative and Bureaucratic Reform (PANRB). Despite these advances, challenges remain, including gaps in digital access, interagency coordination, integrated data management, and low ICT literacy. This study concludes that effective e-governance planning requires increased inter-agency collaboration, integrated data systems, and improved human resource capacity to achieve efficient, transparent, and accountable public services.

Keywords : E-Governance, Planning, Information and Communication, Data Security

1. INTRODUCTION

The progression of technology has accelerated over time, marking the advent of the internet in the 20th century, which has ushered in a new era for humanity. In the early 21st century, the internet's development reached its zenith, successfully connecting people from various parts of the world. The advent of the internet has not only fostered innovation in the tangible realm but has also catalysed advancements in the digital domain. The state, as the primary entity representing social, economic, and political interests, plays a pivotal role in this process. The government, in its capacity as the



instrument through which these interests are executed, plays a pivotal role. It is obligated to ensure that the policies it implements are aligned with and serve the interests of the community. In the contemporary era, the government's execution of its duties and authority transcends the confines of physical interactions, encompassing virtual and online domains. The implementation of E-Governance by the government is predicated on the creation of novel methods for the provision of public services. By leveraging innovation, the government aims to deliver services that are faster, more efficient, transparent, and aligned with the expectations of modern society (Chan dkk., 2011).

Presently, nearly every nation has developed the concept of e-government, both to carry out government activities and service processes, because it is regarded as faster and more effective than traditional methods. The implementation of this digital governance necessitates that the state be equipped with all the necessary resources and capabilities. Crucial elements in the implementation of digital governance include human resource capabilities and adequate infrastructure. Consequently, if a nation's government aspires to enhance the caliber of public services through the integration of technology, information, and communication, the implementation of strategic planning and policy frameworks is imperative to achieve quality government organizations (Yudhistyra & Nugroho, 2014). It is also imperative to acknowledge the challenges posed by digital access inequality and data security, which must be anticipated during the planning process.

E-Governance planning constitutes a pivotal strategic step in confronting the challenges associated with modernizing government and public services. In the context of a developing country like Indonesia, e-Governance holds the potential to enhance the quality of public services, while concurrently promoting transparency in resource and information management. Furthermore, the implementation of e-Governance can foster citizen participation in the decision-making process, thereby engendering a more responsive and accountable government. Consequently, meticulous and comprehensive e-Governance planning is not merely a convenience but rather a cornerstone for establishing enhanced and sustainable governance in Indonesia. In the Indonesian context, such planning is instrumental in addressing the challenges posed by geography, demographics, and a complex bureaucratic culture, with the overarching objective being the provision of fairer and more equitable services to all citizens. Furthermore, e-governance has been identified as a significant tool in the fight against corruption, collusion, and nepotism by reducing in-person interactions that can potentially lead to bribery opportunities and by accelerating administrative processes through online services. The effective implementation of e-governance necessitates several factors. Firstly, the presence of adequate ICT infrastructure is essential. Secondly, effective coordination among government agencies is crucial. Thirdly, ensuring ICT literacy among human resources is vital. Finally, strong leadership commitment is indispensable. Adequate management is instrumental in leveraging e-governance's potential to enhance public services, facilitate data-driven decision-making, foster public trust, and catalyze economic growth by enhancing the efficiency of government operations (Budianti, 2019).

In essence, e-governance planning constitutes a transformative approach that integrates technology into the public administration framework, thereby enhancing the efficiency and effectiveness of government services. In the context of the digital age, e-governance refers to the use of information and communication technology (ICT) to facilitate the delivery of government services to citizens, businesses, and other stakeholders. This transition towards digital solutions is imperative to address contemporary governance challenges, including the necessity for transparency, accountability, and citizen engagement. The implementation of e-governance necessitates meticulous planning to ensure



that technological advancements are congruent with the objectives of good governance. This entails the formulation of explicit strategies for the implementation of digital instruments, the promotion of collaboration among diverse governmental entities, and the prioritization of citizen needs. Effective e-governance planning not only streamlines processes but also empowers citizens by providing them with easier access to information and services. The advent of e-governance is especially salient in the context of the fourth industrial revolution, wherein rapid technological change is profoundly reshaping societal expectations. Governments are under mounting pressure to adapt to these changes by adopting innovative solutions that improve service delivery and increase public trust. The integration of e-governance into the planning process is imperative for the establishment of a responsive and accountable government that can address the evolving needs of its citizens. In essence, e-governance planning signifies a substantial transformation in public administration, leveraging technological advancements to enhance governance outcomes. As this paper will explore, understanding the dynamics of e-governance planning is critical to fostering more effective, transparent, and participatory governance in the digital age (Prihartono & Tuti, 2023)

In Indonesia, the notion of e-Government commenced its adoption and implementation subsequent to the establishment of a legal foundation through Presidential Instruction Number 3 of 2003. This directive delineates the overarching policies and strategies for the development of e-Government, which serves as the primary framework for the modernization of public services and government administration through the utilization of digital technology (Amrozi et al., 2022). A comparative analysis reveals that the advancement of e-Governance in Indonesia has experienced a regression in comparison to other Southeast Asian countries. According to the results of a survey conducted by the United Nations, Indonesia has dropped 10 positions compared to two years ago, ranking 116th out of 193 countries. The country's highest ranking was recorded at position 96 in 2005. Conversely, Thailand, Vietnam, and the Philippines have demonstrated a marked rise in their respective rankings, reaching 77th, 89th, and 71st positions, respectively, with substantial advancements since 2014. This development poses a substantial challenge for Indonesia in its ongoing efforts to enhance the quality of public services (Al-Ayyubi et al., 2021).

In recent years, Indonesia has begun to focus on e-Governance planning through policies such as the Electronic-Based Government System (SPBE) to improve the quality of public services and accelerate digital transformation. However, Indonesia still faces several challenges, such as limited ICT infrastructure, lack of coordination between government agencies, and the ability of human resources in the government that still needs to be improved to support the maximum application of technology (Choirunnisa et al., 2023).

The e-governance system development process is comprised of five stages: the communication stage, which involves data collection, problem and user desire identification, system solution planning, system design, and system implementation; the evaluation stage, which ensures the e-governance system functions as expected; and the planning stage, which involves understanding the problems and desires of users. Each stage is interconnected and aims to produce an effective and efficient system according to user needs (Masyhur, 2017).



2. METHOD

The researchers employed a descriptive research method with a qualitative approach. Research employing this approach seeks to meticulously delineate the characteristics of social phenomena or human behavior, ensuring a comprehensive and detailed understanding. This approach prioritizes the comprehension of the meaning that individuals or groups ascribe to their experiences. (Wijayanti, 2010). Researchers do not merely collect data; they also endeavor to comprehend the context and nuances underlying the phenomenon under study. In order to obtain comprehensive and detailed data, researchers frequently employ flexible and interactive data collection methods, such as participatory observation, focus group discussions, and in-depth interviews. By interacting directly with research subjects, researchers can obtain information that may not be available through previous quantitative approaches.

These methods facilitate the construction of comprehensive narratives that encapsulate the experiences and perspectives of research subjects in a more profound manner. This methodological approach has been demonstrated to facilitate profound insights into the social and cultural milieu within which phenomena emerge. In the social sciences, education, health, and psychology, qualitative descriptive research is frequently employed, emphasizing the significance of comprehending the context and experiences of individuals (Creswell W. John, 2018). This methodological approach enables researchers to explore intricate issues that elude quantification or statistical analysis (Imanina, 2020).

3. RESULT AND DISCUSSION

Data Quality and Security

In the context of e-Governance development in Bandung City, user data security emerges as a pivotal concern. A comprehensive review of the literature on the subject, as well as interviews conducted with Diskominfo, reveals that data security management can be categorized into two primary dimensions: physical aspects and software aspects. From the physical side, security is carried out by maintaining servers, data centers, and information technology infrastructure to avoid physical threats such as damage and theft. In addition, Bandung City has implemented a range of software-based security measures, including the use of security codes during user registration on the network (Prihartono & Tuti, 2023).

The security code is used to encrypt public data to prevent leakage of personal information. In addition, government applications used for public services are also protected with a layered security system. Before official government applications or websites can be used by the public, Diskominfo conducts thorough security testing, including penetration testing. The purpose of this process is to identify potential vulnerabilities in the application so that risk mitigation against potential cyber-attacks can be implemented.

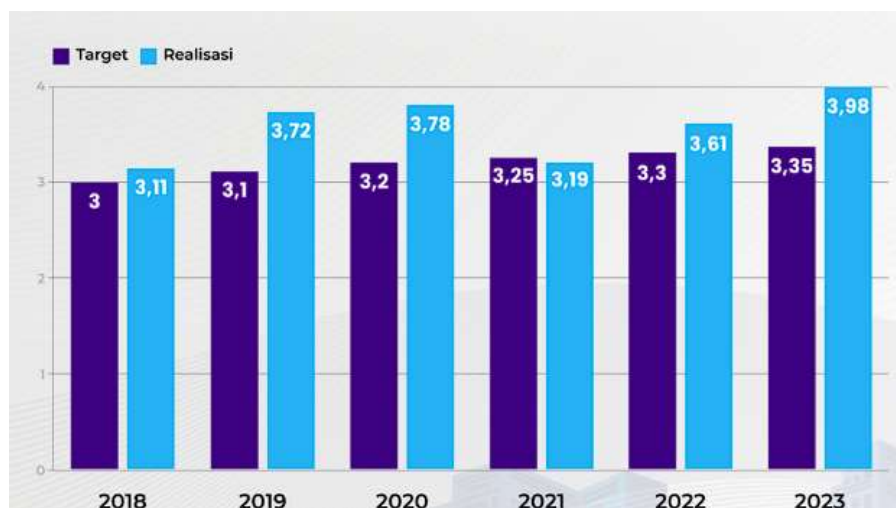


These security measures are supported by an ongoing monitoring process performed by Diskominfo's security team. This monitoring involves analyzing network and application activity to detect anomalies that could potentially compromise data integrity. In addition, regular assessments are carried out to improve security standards in line with technological developments and new threats.

Data security in e-government is not only a technical issue, but also relates to public trust in government services. The City of Bandung has shown a strong commitment to ensuring the protection of users' personal data. This reflects the application of the principles of good information technology governance, which is an important foundation for the sustainability of e-government implementation.(Ramadhan, 2024). This initiative is in line with national policies on cybersecurity, such as Government Regulation No. 71/2019 on the Implementation of Electronic Systems and Transactions, which emphasizes the importance of protecting public data in electronic services.

Technology and Information

Figure 1 Goal and Realization of SPBE Index of Bandung City



Source: Bandung City Communication and Information Office

In accordance with Presidential Regulation No. 95/2018 concerning the Implementation of Electronic-Based Government Systems (EBS), the overarching objective of EBS implementation is to establish governance that is characterized by its clean, effective, transparent, and accountable nature. Furthermore, the SPBE is conceived to deliver reliable public services that are commensurate with the expectations and trust of the community. The Bandung City Government has demonstrated a consistent commitment to integrating SPBE in its governance, with the primary objective being the realization of these aforementioned goals. From 2018 to 2023, the Bandung City SPBE Index demonstrated notable advancements. Despite a shortfall in the 2021 index performance relative to targets, the SPBE index demonstrated consistent achievement and even surpassed targets in subsequent years. In 2023, the Bandung City SPBE Index attained 3.98, based on an evaluation of 47 predetermined indicators. This accomplishment positions Bandung City within the "excellent" category in terms of SPBE implementation.



This success is indicative of the efficacy of the digital services that have been implemented by local governments. The digital services developed not only aim to improve the quality of public services, but also to elevate Bandung City's SPBE Index to a higher category, which is very satisfactory. The enhancement of technological capacity, the refinement of data management methodologies, and the fortification of coordination across regional apparatuses have contributed to Bandung City's emergence as a frontrunner in the implementation of SPBE at the city level within Indonesia.

To support this achievement, the Bandung City government is actively developing digital infrastructure, strengthening system integration, and improving the quality of human resources in the field of information and communication technology. This multifaceted strategy has yielded notable advancements, not only in the internal government's effectiveness but also in the quality of services rendered to the community. This initiative is consistent with the national government's broader vision of promoting digital transformation in Indonesia.

The data created must meet certain standards to ensure its accuracy and reliability for public decision-making. Moreover, Diskominfo oversees the management of the ICT system in each local device, ensuring seamless interaction among these devices. A pivotal emphasis is placed on augmenting the capacity of human resources in the domain of information and communication technology (ICT). Staff members undergo training and competency development to ensure they possess the requisite skills. Diskominfo Kota Bandung aims to cultivate a more responsive and transparent e-governance by leveraging best practices and state-of-the-art technology to deliver superior public services.

To ensure data consistency across all local devices, Diskominfo Kota Bandung has established guidelines. A data center has been established as part of these efforts to collect data and information derived from ICT systems managed by Diskominfo. The collected data is subject to stringent quality control measures to ensure its accuracy and reliability for public decision-making processes. Furthermore, Diskominfo endeavors to enhance productivity by integrating ICT components into local devices through system integration. Diskominfo organizes training and competency development programs in ICT to ensure that employees have the necessary skills. The municipality prioritizes the implementation of best practices and the most recent technological advancements to ensure the provision of superior public services. In this context, cloud computing technology is employed to enhance data storage and accessibility.

The attainment of the SPBE Index serves as a testament to the significance of ongoing evaluation and enhancement of digital services at the regional level.



Institutional Arrangements

Figure 2 Institutional arrangements in local government



Source : (Nurdin, 2018)

Institutional arrangements are interconnected in the planning of E-Governance, and these arrangements can subsequently be implemented and utilized in the E-Governance process. The legitimacy of the central government is the first of four points to consider. The agency requires legitimacy from the central government. Within the context of Diskominfo Kota Bandung, this agency possesses legitimacy from the government, as evidenced by the policies issued in Presidential Instruction Number 3 of 2003 concerning the National Policy and Strategy for E-Government Development. This Presidential Directive underscores the imperative to cultivate electronic-based governance to enhance the efficacy and efficiency of public services, as well as Law No. 14/2008 on Public Information Disclosure, which advocates transparency in technology-based governance. The Agency's legitimacy is, of course, paramount for its sustainability. Maintaining legitimacy is a continuous process, necessitating the Agency to adopt actions and innovations aligned with community needs.

Secondly, the Agency must garner legitimacy from local citizens and businesses. In the opinion of Mr. Arief Mujahidillag, legitimacy from local communities and existing businesses is crucial, especially in light of the predominance of electronic services in modern times. For this reason, Diskominfo of Bandung City has legitimacy as the primary driver of services in Bandung City. Diskominfo is also the main supporter in empowering services in the form of applications or others that are based on electronics for agencies in the city of Bandung.

Thirdly, regulation is of paramount importance for agencies, as it fosters legitimacy, facilitates access to resources, ensures stability, and enhances sustainability processes. Mr. Arief Mujahidillag elucidated that the Diskominfo of Bandung City has its own regulations pertaining to electronic-based government systems, which are derived from the SPBE Presidential Regulation NO 95 of 2018. This regulation encapsulates the Indonesian Government's endeavors to modernize the government sector by leveraging information technology. This Presidential Regulation anticipates the utilization of suitable technological means by agencies, with the aspiration of enhancing the efficiency and transparency of public services and addressing the diverse needs of the population. It is also



pertinent to mention Presidential Regulation No. 132 of 2022, which pertains to the National SPBE Architecture. This regulation delineates the guidelines for the establishment of a nationally integrated SPBE Architecture.

Fourthly, it is imperative to acknowledge that standards in this context function as "rules of engagement," encompassing the tasks and functions of an Agency. These standards, in turn, can be mandated by government regulatory bodies, established through cooperative or consensus-driven processes among relevant organizations. The Agency's establishment is founded on these extant standards, ensuring its capacity to function in accordance with the diverse needs of the public. Within the Diskominfo Kota Bandung context, the Ministry of Administrative Reform and Bureaucratic Reform oversees the implementation of SPBE.

Political Context

Table 1. RPJMN 2020-2024

RPJMN Element	Role of e-Governance	Implementation
Example Bureaucratic	Reform Optimization of the efficiency and transparency of government	administrative processes Work Accountability Information System (e-SAKIP
Digital Infrastructure Development	Development Support for the provision of technology networks and facilities that support digitalization	Development of national data centers and SPBE networks
Simplification of Regulations	Equitable and technology-based access to public services for the public, facilitated through digitization of the legal administration	System and the OSS (Online Single Submission) application for business licenses.
The objective of Human Resource	Development is to enhance the quality of education and training through the utilization of online learning platforms and technology-based health services	Digital learning applications such as Rumah belajar and e-Pus kemenkes system for health.
Economic Transformation	Supporting the Digital Economy Ecosystem	e-Procurement system and local marketplace development for MSMEs.

Source: www.djkn.kemenkeu.go.id

The e-Government planning process in Indonesia, including at the local level, reflects political dynamics involving various stages, ranging from political promises to technocratic implementation aligned with national policies. An interview with Mr. Arief Mujahidillah, S.Si., M.T., Head of the ICT Policy team of the Communication and Information Technology Office (Diskominfo) of Bandung City, revealed that political promises frequently serve as the genesis of planning, wherein the vision and mission of the leader during the campaign period are articulated as a strategic direction. These pledges are meticulously crafted to garner public endorsement by proffering solutions to the prevailing challenges confronting the community, including the imperative for enhanced digital transformation.

Subsequent to the election of a leader, the responsibility of translating these political pledges into operational policies and programs is assumed by local government agencies such as Diskominfo. This process involves the formulation of a regional strategic plan that prioritizes the development



of e-Government-based services. For instance, the development of public service applications, such as a public complaint system and digital health services (Suherman, 2020), is one of the concrete implementations of the aforementioned political vision.

The technocratic draft of the National Medium-Term Development Plan (RPJMN) serves as a guideline, ensuring that programs at the regional level remain aligned with national policies. The RPJMN, which was prepared prior to the election, integrates digital transformation principles as part of the national priority agenda, including technology-based bureaucratic reform, digital infrastructure development, and cross-sector data integration. This policy establishes a framework for regional apparatuses to translate local visions into programs that are aligned with the national development agenda. Local leaders determine the priority programs to be implemented based on a combination of political promises and technocratic directives from the RPJMN. In the context of e-Government, priority programs often include initiatives aimed at improving the efficiency and transparency of public services (Nurlaila et al., 2024).

This process illustrates the interaction between the political and technocratic dimensions of development planning. Political appointments provide legitimacy, local governments become implementing actors, while the technocratic design of the RPJMN ensures continuity with national policies. This collaborative process underscores the significance of a symbiotic relationship among political leaders, technocratic bureaucracy, and the public to ensure the success of e-Government programs. Key references for this analysis include RPJMN documents, Diskominfo publications, and various studies on the relationship between politics and technology-based development planning.

4. CONCLUSION

E-governance planning in Bandung City is a strategic effort to realize more effective, efficient and transparent governance. This research shows that strengthening e-governance in Bandung City is done through the implementation of an integrated electronic-based government system (SPBE). This effort aims to improve the quality of public services and promote digital transformation in government management. The e-governance planning process includes managing data security, strengthening information and communication technology (ICT) infrastructure, and institutional arrangements based on national regulations and regional policies. Data security is one of the top priorities in e-governance planning. The Bandung City Government adopts data protection measures, both physical and software, to prevent information leakage and protect people's personal data. The improvement in the quality of public services is also reflected in the achievement of the Bandung City SPBE Index, which has made significant progress from year to year. This shows that careful planning and good ICT management can promote the effectiveness of e-government systems.

The success of e-governance planning in Bandung City is influenced by institutional arrangements that include legitimacy from the central government, implementation of national regulations, and oversight by the Ministry of Administrative Reform and Bureaucratic Reform (PANRB). Support from these institutional aspects ensures that each policy and program is implemented in accordance with good governance principles. Overall, this research confirms that e-governance planning in Bandung City is an important step in accelerating the digital transformation of government. The implementation of e-governance is predicated on the principles of good planning, which engender



more responsive, transparent, and accountable public services. To ensure the sustainability and effectiveness of e-governance implementation, it is essential to cultivate cross-agency collaboration, implement qualified human resource management, and fortify ICT infrastructure. Consequently, the implementation of e-governance not only enhances the quality of public services, but also fosters data-based decision-making, encourages public participation, and strengthens public trust in government.

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