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# Smart Governance Transformation in Indonesian Local Administration

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## Abstract

This research delves into the pivotal role of digital government evolution in enhancing local government performance through smart governance concepts. Focused on Indonesia's transformative journey, the study highlights the government's shift towards the Electronic-based Government System (SPBE) to address inefficiencies, bureaucratic challenges, and corruption. Jambi City, an active participant in the 100 Smart City Movement, serves as a specific case study. Using qualitative methods, the research aims to uncover insights into the challenges and future potential of digital transformation at the local level. Despite hurdles such as regulatory barriers and limited resources, the study identifies opportunities for success, especially through stakeholder collaboration and public-private partnerships. The findings emphasize the importance of a collaborative approach in propelling digital transformation efforts for effective public service delivery. This research has significant implications for policymakers, practitioners, and academics interested in the nexus of technology and government in developing countries.

**Keywords:**

smart governance; digital transformation; digital government; local government

## Introduction

This research tries to analyze Indonesia Digital Government transformation in specific on local case of electronic – based Government System (SPBE). The Indonesian government has embraced the integration of ICTs through the implementation of the Sistem Pemerintahan Berbasis Elektronik (SPBE), also referred to as the Electronic-Based Government System or more commonly known as electronic government (e-government). In the present-day scenario, SPBE has emerged as the principal catalyst for digital transformation across all governmental tiers in Indonesia. This comprehensive framework leverages information and communication technologies to enhance administrative efficiency, transparency, and public service delivery.

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Through the utilization of electronic platforms, the Indonesian government aims to streamline processes, optimize resource allocation, and foster citizen engagement. SPBE represents a significant milestone in the country's journey towards a digitally advanced governance model, enabling effective and accessible public administration for the betterment of Indonesian society. The integration of ICTs and the adoption SPBE in Indonesia align with public expectations for a modern and efficient governance system. Mergel et al., (2019) assert that to meet the public's expectations for the government's ability to provide high-value real-time digital services, the government has modified its operational standards to improve public services' efficiency and effectiveness to achieve its primary goals, including transparency and citizen satisfaction. SPBE reflects the country's commitment to digital transformation. Digital transformation refers to the integration of digital technologies into various aspects of society and organizations to drive innovation, efficiency, and improved services. SPBE serves as a pivotal component of this transformation, as it leverages information and communication technologies to revolutionize the way the government operates. Digital transformation in the public sector considers digital transformation as a comprehensive organizational approach, rather than just a mere technical solution (Bolívar, 2017).

Digital transformation in public sector means new ways of collaboration with stakeholders, building new frameworks of service delivery, and creating new forms of relationships (Mergel et al., 2019). Multiple benefits can be detected. Firstly, bringing citizens actively on board through collaboration in the design and implementation of policies and services could also increase their legitimacy and effectiveness and create the feeling of ownership. Secondly, citizens' and stakeholders' engagement help gain knowledge about needs, solutions and impacts that could otherwise be overlooked. Thirdly, inclusive processes could help to address the differential impacts of various policies on outcomes addressing different segments of society and their effects on growth and well-being. Finally, the use of digital technologies can enable positive changes in the way public administrations conduct their work, communicate, and deliver services. It can also have far-reaching impacts such as changing organizational structures and cultures or engaging and integrating citizens and other partners into the co-design and co-delivery of public policy making (Bretschneider & Mergel, 2011; Mergel et al., 2009; Schwertner, 2017; Scupola & Mergel, 2021; Sivarajah et al., 2015).

A fundamental aspect of digital transformation involves the shift towards developing online services and policymaking, departing from conventional analogue methods in public service. This transformation, influenced by various internal and external factors, necessitates

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ongoing adjustments in processes, services, and products to effectively respond to external demands (Gano, 2013). Despite the challenges encountered in formulating implementation strategies and managing information and expertise, success can be achieved by adopting a forward-looking perspective, preparing leaders for the future, building digital capabilities, and integrating digitalization into the broader vision of digital transformation (Carayannis & Hanna, 2016).

This paradigm shift towards digital transformation finds resonance in the increasing prominence of the Smart City concept in both academic discourse and global policies over the past two decades. Nam and Pardo (2011) have explored the distinctions between the concept of a smart city and related terms such as digital, intelligent, or ubiquitous cities, categorizing these distinctions into three key areas: technology, people, and community. From a technological standpoint, a smart city is one that heavily incorporates ICT in its critical infrastructure components and services (Washburn et al., 2010). The current global scenario compels cities to explore innovative solutions for addressing emerging challenges, with a particular emphasis on improving transportation connectivity and fostering diverse land-use patterns, and the provision of top-notch urban services, all of which contribute positively to long-term economic growth. These overarching global trend towards smart cities are inherently linked to the challenges faced by governments in formulating effective implementation strategies and managing information and expertise. Therefore, a forward-looking perspective and the seamless integration of digital capabilities become integral components in navigating the intricacies of both digital transformation in public service and the broader evolution towards smart cities. For instance, the development of high-quality and more efficient public transportation systems, tailored to economic demands and connecting the workforce with employment opportunities, is regarded as a pivotal factor in urban development.

A smart city undeniably offers interoperable, Internet-based government services that facilitate widespread connectivity and streamline essential government functions for citizens and businesses, as highlighted by Al-Hader et al. (2009). Nonetheless, smart cities need to integrate technologies, systems, services, and capabilities into a cohesive network that is both multi-sectoral and adaptable to future developments, all while remaining accessible to all. This implies that ICT should serve as a catalyst in creating a novel communicative environment, necessitating comprehensive and balanced development of creative skills, innovation-focused institutions, broadband networks, and virtual collaborative spaces, as discussed by Komninos (2011). Paskaleva (2011) has delved deeply into topics like open innovation and user engagement,

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cautioning against the risks associated with a predominant corporate-centric approach to building smart cities, which could potentially compromise the autonomy of governments.

**Figure1.**

**VoS Viewer Analysis of Scopus Database**

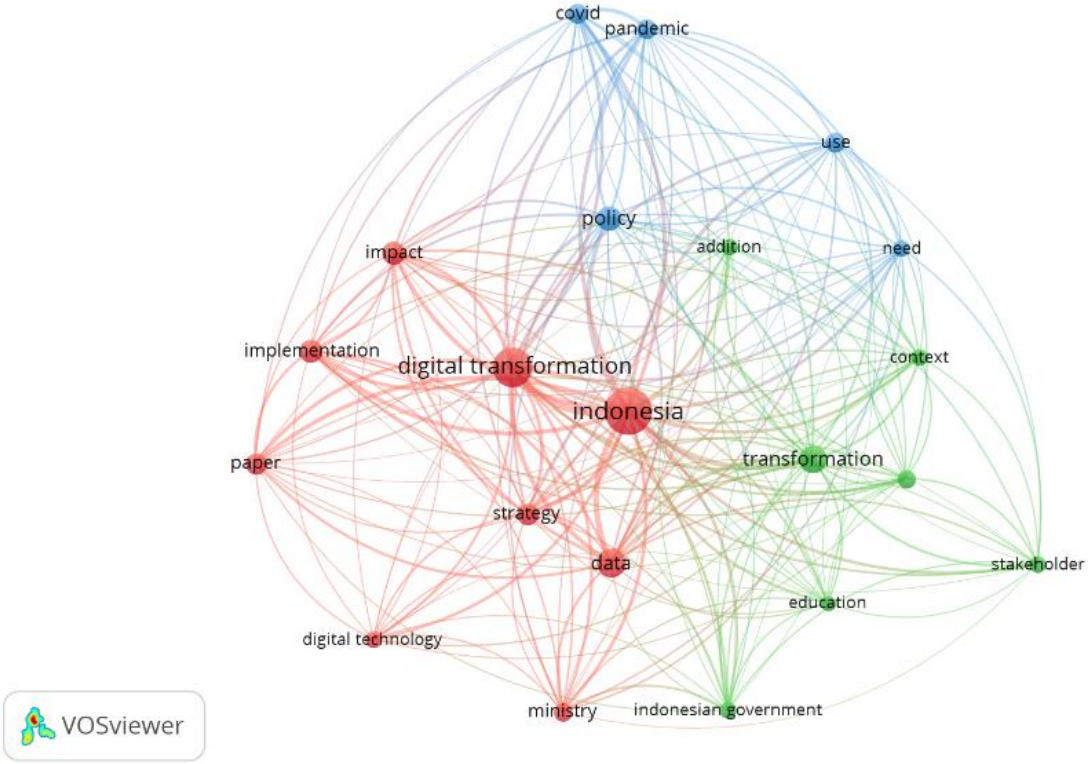


**Table 2**.

**VoS Viewer Analysis of Scopus Database**

| Themes | Cluster |
|---|---|
| Data, ***Digital Technology, Digital Transformation***, Transformation, Impact, Implementation, Paper, Strategy. | 1 |
| Addition, Context, Education***, Indonesia Government***, Interview, Stakeholder, ***Indonesia, Ministry.*** | 2 |
| Covid, Need, Pandemic, Policy, Use | 3 |

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Based on Figure 1 and Table 1of Vos Viewer analysis that concentrate of previous research with the scope of Indonesia Digital Government Transformation on Scopus database founds 100 Article during 2020 until 2024. In this analysis using Network analysis to finds out the Popular focused of research in Scopus database. The theme of Digital Transformation, Digital Technology as representing themes of Digital transformation in digital side or technology side are concentrated on Cluster 1. However, themes of Indonesia Government, Indonesia, and ministry are representing theme of the Indonesia Government in general are concentrated on Cluster 2. In this case indicated that there is huge gap that are not fully connected of those two perspectives between Technology side with the Government as Main focused. In this research highlight the smart governance as Indonesia digital government transformation in evolution side, to complete the research gap.

**Smart Governance**

The concept of smart cities emphasizes the importance of human capital rather than simply relying on the belief that ICT alone can automatically transform a city into a smart one (Shapiro, 2006, Holland, 2008). When it comes to education and leadership within a smart city, the focus should be on creating environments that foster entrepreneurship opportunities accessible to all residents. Instead of being exclusive, smart governance should work to eliminate barriers related to language, culture, education, and disabilities.

Smart governance entails engaging various stakeholders in the decision-making process and the provision of public services. ICT-mediated governance, often referred to as e-governance, plays a pivotal role in making smart city initiatives accessible to citizens while ensuring transparency in decision-making and implementation. However, the essence of e-governance in a smart city should revolve around being citizen-centric and driven by citizen participation. The increasing role of technology in the operation of urban systems is causing governments to reconsider their position in a knowledge-based society. This role has been termed "Smart governance" (Giffinger et al., 2007). However, there is no unanimous consensus on the definition of this concept. While some prior studies have highlighted aspects such as political involvement and the efficiency of administrative processes (Giffinger et al., 2007), others have focused on the gathering of various types of data and information related to public management (Schuchmann & Seufert, 2015).

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**Table 2.**

**Identification of Dimensions of smart governance in the literature.**

| No | Component | Categories | Values |
|---|---|---|---|
| 1 | Defining elements of smart governance | Use of technology | Smart use of ICTs |
| | | Organizational processes | Smart collaboration and participation |
| | | | Smart internal coordination |
| | | | Smart decision-making |
| | | | Smart administration |
| 2 | Aspired outcomes of smart governance | First-order outcomes: changes to the government organization | Smart outcomes |
| | | | Efficient government |
| | | | Readiness for disaster management |
| | | Second-order outcomes: changes in the position of government vis-a-vis other urban actors | Citizen-centric services |
| | | | Interaction with citizens |
| | | | Strong city brand |
| | | Third-order outcomes: improvements to the city | Economic growth |
| | | | Social inclusion |
| | | | Ecological performance |
| | | | Highly educated citizens |
| 3 | Implementation strategies for smart governance | Ideas | Vision |
| | | Actions | Legislation |
| | | | Policies |
| | | | Use of ICTs |
| | | | Collaboration |

*Source: Bolívar & Meijer (2016)*

In the context of this research, the dimension of smart governance will be analysed together with digital government transformation, known by Janowski (2015) as digital government evolution. The concept of the evolutionary stages of digital governance is intriguing when comprehensively viewed within the framework of implementing smart city initiatives in local government, which is the focus of this research.

**Digital Government Evolution**

Janowski (2015) proposed a Digital Government Evolution Model with four increasingly complex phases in the evolution of the concept: Digitization (Technology in Government), Transformation (Electronic Government), Engagement (Electronic Governance) and Contextualization (Policy-Driven Electronic Governance). The model also offers a characterization of the phases depending upon three binary variables: 1) whether digitization adds to internal working and structures of government but largely without affecting them, or it transforms the internal working and structures of government; 2) whether the transformation is internal to government but not affecting its customers, or it transforms the internal working and structure of government as well as its relationships with citizens, businesses and other

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stakeholders; and 3) whether the transformation depends on a particular application context, e.g. of a country, location or sector, or is context-independent. Janowski (2015) identifies four stages of digital government evolution:

**Table 3.**

**Four stages of digital government evolution**

| Stages | Explanation |
|---|---|
| Digitization | Involves the development, operation and maintenance of the technological environment, including the availability of technological capabilities, services and infrastructure within and between government organizations |
| Transformation | Enhancing the internal processes, structures, and working practices of a government organization involves leveraging digital technologies as a crucial component of broader administrative and institutional reforms, striving for internal efficiency, effectiveness, rationalization, simplification, and other reform-related objectives. |
| Engagement | Transforming the relationships between government and citizens, businesses and other non-government actors using digital technologies. The transformation aims at increasing access, convenience, and effectiveness of public service delivery systems, engaging citizens in political and civil affairs, developing knowledge-based society and economy, and pursuing other high-value public policy goals. |
| Contextualization | Specific efforts by countries, regions, cities, communities and other territorial and social units to develop themselves, e.g. to pursue specific public policy and sustainable development objectives |

*Source: Janowski (2015)*

Overall, the four stages of digital government evolution are not necessarily linear or sequential, and different governments may be at different stages of the evolution process. However, the key takeaway is that digital government is not just about technology adoption, but about transforming the way government operates and engages with citizens. By embracing the four stages of digital government evolution, governments can harness the power of technology to improve service delivery, promote innovation, and build more inclusive and responsive societies (Ciesielska & Janowski, 2019; Janowski, 2015a).

**Challenges to digital transformation**

Digital transformation faces significant obstacles, including technological challenges, organizational constraints, legal and ethical issues, and financial limitations. Public administrators, according to Deloitte's 2015 survey, grapple with competing priorities, funding shortages, security concerns, and a lack of digital skills (Eggers & Bellman, 2015). Tangi et al., (2021) categorizes a lack of skills, organizational complexity, and coordination issues as major barriers.

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In the digital evolution of developing countries, critical challenges emerge. Insufficient infrastructure, marked by low device penetration and limited Internet access, creates a sense of digital isolation. E-government platforms, essential for citizen interaction, grapple with quality deficits, heightening the need for improvements. The absence of robust privacy measures puts sensitive data at risk, compounded by a population with low computer literacy, widening the digital gap (UNPA and ASPA 2001; Ndou 2004; Gil-Garcia, Romon, Pardo 2005).

The absence of a clear institutional approach complicates e-government management, hindering effective execution. Scarce financial resources cast shadows on ambitious projects, while a leadership vacuum stifles technological reforms. Resistance from traditionalist civil servants perpetuates doubts, impeding progress. The lack of policy guidelines exacerbates the shortage of skilled personnel needed for the complex e-government landscape.

In this intricate digitalization of challenges, a transformative strategy is vital. Addressing policy gaps, strategic resource allocation, and empowering a tech-savvy workforce form the linchpin. Only through a united effort can the promise of a seamless and inclusive e-government future be realized in developing nations, weaving together the threads of infrastructure, technology, human resources, and institutions (Rakhmanov 2009; Bwalya and Mutula 2014; Siddiquee 2016; Knox 2019).

**Driving factors of digital transformation**

In the context of digital transformation in the public sector, several scholars have discussed the many drivers behind the adoption and implementation of digital government initiatives. Barcevičius et al., (2019) divided the key drivers into three categories: political/social, economic, and technological.

The first set of drivers of digital transformation in the public sector is … the push for digital transformation is propelled by political factors tied to the influence of the political environment and citizens' demands. Governments, aiming to maintain or enhance legitimacy, respond to citizens' expectations for modernized services amid advancements in private sector technologies. The rising call for personalized, efficient services creates social pressure, while shifts towards an open society and demands for transparency further propel the adoption of digital technologies in government (Alzahrani et al., 2017; Medaglia et al., 2021; Savaget et al., 2019).

The second driver category for digital government transformation are economic factors: governments leverage digital technologies to enhance efficiency, effectiveness, and overall

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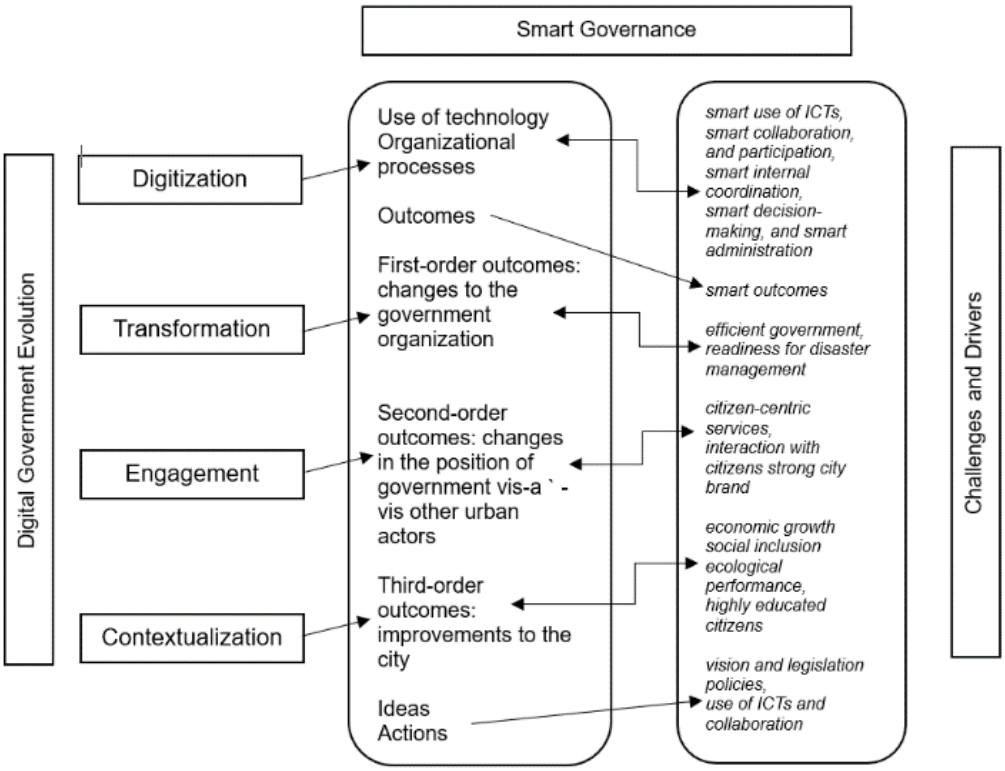
rationalization, aiming for streamlined and simplified processes. The adoption of these technologies promises cost savings, both direct and indirect, through reduced administrative expenditures, expedited task completion, and improved overall efficiencies. Despite the yet-to-be-fully-evaluated economic benefits, the potential for enhanced public sector value, especially through ICT-based policies, remains significant (Janowski et al., 2018).

The third category of drivers behind the transformation of digital government is related to technological factors, which have rapidly advanced in recent years. The availability of new technologies, technological practices, and cultures has influenced the expectations and motivation for new digital government services and policy-making processes (Bannister & Connolly, 2011). Some scholars explain that governments are continuously attempting to adopt the most advanced digital innovations because new technologies are always exciting to embrace, and governments are more interested in adopting new emerging technologies than dealing with the failures of past ones (Anthopoulos & Reddick, 2013). Moreover, the inherent benefits of digital technologies themselves create fundamental drivers for digital government transformation.

**Figure 2.**

**Theoretical framework for qualitative analysis.**




*Source: Own elaboration based on literature analysis from Janowski (2015) and Bolívar & Meijer (2016)*

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Following this theoretical foundation, we outline our methodologies before presenting the actual case studies. The section dedicated to results highlights significant contributions to the existing scholarly body of work. Initially, we investigate the impact of smart governance transformation on local administration digitalization initiatives. Subsequently, we delve into the challenges and drivers of smart governance transformation to gain a deeper understanding of how to enhance key areas of public service delivery in the future, as an integrated part of a long-term approach to digital transformation.

The research focuses on the transformation of smart governance within the local administration of Jambi City government. The research goals aim to present an empirical and practically implementable theoretical framework for a smart city, with a specific focus on the smart governance dimension in juxtaposition with the evolution of digital government. Aligned with these research goals, the central research question is: *What are the key areas that have to be addressed to enhance public service delivery concerning the transformation of smart governance in Jambi City?*

To answer the research question, this article follows a systematic approach. We initiate the exploration by delving into the underlying theoretical dimension of smart cities, with a specific emphasis on smart governance within the governmental framework during the evolution of digital government. These explorations are crucial for contextualizing the research question, especially considering the lack of even rudimentary contextual understanding.

## Methods

In the pursuit of empirical insights, this research employed qualitative methodologies, embracing in-depth interviews, detailed observations, and extensive data collection from government agencies at central and local levels. The study unfolded in Jakarta and Jambi City, Indonesia, spanning from April 2023 to September 2023. To pinpoint key informants, a dual approach of purposeful and snowball sampling techniques was deftly employed in line with Creswell (2013). The research journey initiated with the dispatch of official letters, targeting public managers and unit heads spearheading digital transformation efforts at both central and local administrative levels. Following this, these individuals were encouraged to nominate additional informants vital to the digital transformation discourse. Ensuring uniformity, all interviews were conducted, digitally recorded, transcribed, and subjected to coding for consistency in analysis, following the methodologies outlined by Saldana (2014). The research then advanced into a coding phase, utilizing key concepts such as "smart city," "smart

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governance," and "digital government evolution" as foundational elements (Bolívar & Meijer, 2016; Janowski, 2015; Meijer et al., 2015). This coding strategy, a common initial step in qualitative research, facilitated data analysis. Through open coding, additional sub-codes were generated to capture specific nuances observed in the cases (Strauss & Corbin, 1998). Subsequently, individual coding of the interviews produced findings extensively deliberated upon in multiple data analysis sessions involving the entire research team. Ongoing discussions focused on interpreting the significance of additional codes, their relationship to existing literature, and their alignment with other empirical categories under scrutiny (Creswell & Creswell, 2018; Eisenhardt, 1989; Hancock et al., 2021; Yin, 2017)

## Results

### Indonesian Digital Transformation Policy Design

Governments at various levels in Indonesia are steering diverse paths toward digital transformation, influenced by their digital maturity stages. The national digital government policy, known as The Electronic Based Government System (SPBE), is outlined in Presidential Regulation Number 95 of 2018. Aligned with the Long-Term Development Plan (RPJP) and the Indonesian Bureaucratic Reform Grand Design (2010-2025), SPBE envisions an integrated electronic-based government system fostering a high-performance bureaucracy and enhanced public services (indonesia.go.id, 2022). To propel the digital transformation agenda, President Joko Widodo outlined five key steps during a limited cabinet meeting in August 2020: Expand access and enhance digital infrastructure; Develop a digital transformation roadmap for strategic sectors, spanning government, public services, social assistance, education, health, trade, industry, and broadcasting; Accelerate the integration of the National Data Centre; Prepare human resources with digital talent for effective digital transformation; Develop funding and financing schemes for digital transformation regulations promptly. These strategic steps emphasize the commitment to advancing digital capabilities, fostering innovation, and ensuring a comprehensive and inclusive digital transformation across various sectors in Indonesia (indonesia.go.id, 2022).

In Indonesia, as a unitary state, local governments at the provincial and city-district levels hold autonomous authority but are subordinate to the central government. To address complex service delivery issues, major cities in Indonesia adopt e-government as a strategic solution. Regulatory support and government policies encourage local governments to leverage digital technologies for effective collaboration with citizens, businesses, civil society, and other government entities, facilitating digital transformation. However, the implementation of digital

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governance in different local practices reveals dilemmas, paradoxes, and tensions (Bertot & Jaeger, 2008; Dias & Gomes, 2021; Savoldelli et al., 2014). Despite the uneven progress in Indonesia's digital transformation, with cities like Jakarta, Bandung, Surabaya, and Medan successfully facing challenges, the granting of broad autonomy to local governments has been a contributing factor for a general success. The challenges of the digital age are particularly evident in less-developed regions, where central government support, appropriate infrastructure, and human resources are crucial for accelerating digital transformation through SPBE. Digital transformation presents both opportunities and challenges for local governments, impacting public policies such as equal access to education, infrastructure, public transport, and health services. The SPBE framework enables collaboration with various sectors, including NGOs, to address public demands. The concept of digital government is anticipated to assist local governments in formulating new and innovative policies using ICTs (Anderson et al., 2015).

To gauge the progress of the SPBE in both central and local governments, the Ministry of Administrative and Bureaucratic Reform issued Ministerial Regulation No. 5 of 2018. This regulation outlines the monitoring and evaluation framework for electronic-based government systems, conducted annually to measure the maturity level of SPBE implementation in ministries, institutions, and local governments. The resulting SPBE Index serves as a key indicator in assessing the modernization of governance structures in Indonesia[1].

Various Central and Regional Government Agencies have undertaken SPBE initiatives, enhancing the efficiency and effectiveness of governance. However, the outcomes and maturity levels of SPBE development vary significantly across these agencies. National challenges in SPBE development include:

1. Lack of Integrated National SPBE Governance framework: The primary challenge lies in the absence of a nationally integrated governance framework for SPBE.
2. Incomplete Implementation of SPBE in Administration and Public Services: SPBE has not been fully and optimally applied in the administration of governance and public services.
3. Suboptimal Reach of ICT Infrastructure: The reach of ICT infrastructure across all regions and layers of society is not yet optimal. ICT infrastructure, especially telecommunication networks, serves as the foundation for connectivity between SPBE implementers and users.

[1] Interview results, Deputy for Policy Formulation and Coordination of SPBE Implementation, Ministry of State Apparatus Utilization and Bureaucratic Reform, 2023.

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4. Limited Number of Civil Servants with ICT Technical Competence: There is a shortage of civil servants (ASN) with technical ICT competencies.

The maturity level of Indonesia's national digital transformation faces challenges, notably in the collaboration and integration between Central and Regional Government Agencies. To address this, the Indonesian Government introduced the Electronic-based Government System Architecture (SPBE), an Enterprise Architecture tailored to Indonesian characteristics. Enacted through Presidential Regulation Number 132 of 2022, SPBE serves as a foundational framework, integrating business processes, data, SPBE services, applications, infrastructure, and security for streamlined government services[2]. Concurrently, Indonesia's digital transformation agenda progresses with the "Towards 100 Smart City Movement" program launched in 2017. Aligned with SPBE goals, this initiative leverages information technology in government administration for enhanced efficiency. This nationwide initiative aims to implement smart cities across Indonesia by 2045, addressing unique challenges each city faces during the implementation phase. The program guides 100 cities/districts in developing Smart City master plans, showcasing exemplary execution in their regions. A collaborative effort among government agencies, the Smart City concept utilizes information technology to optimize city/district management for the collective welfare.

[2] Interview results, Deputy for Policy Formulation and Coordination of SPBE Implementation, Ministry of State Apparatus Utilization and Bureaucratic Reform, 2023.

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**Figure 3.**
**Digitalization Iniciatives in Indonesia (YCP Solidiance, 2020, 2022)**


In its trajectory, SPBE has paved the way for numerous digital projects across various sectors, contributing to Indonesia's digital transformation agenda, notably through the establishment of smart cities nationwide. Within the 100 Smart Cities Movement framework, the government acted as a key catalyst for digital transformation, recognizing the imperative role of smart cities in delivering exceptional services to communities. The surge in the popularity of the smart city concept in local governments aligned with global discussions on the future of urban development. Urbanization in Indonesia has skyrocketed, with an estimated 68% of the population living in urban areas by 2025 and a projected 83% by 2045 (YCP Solidiance, 2020). While the central government has provided comprehensive plans, regulations, and strategic national projects, the dynamic urban landscape and diverse characteristics present significant obstacles for individual cities. To overcome these challenges, cities adopted a collaborative and interdisciplinary approach, recognizing cross-disciplinary collaboration as a crucial instrument for realizing the goals of the smart city initiative (Bolívar, 2017; Herdiyanti et al., 2019)

To practically implement SPBE in the context of digital transformation, especially in the Smart City framework, our research focuses on Jambi City in Jambi Province, Indonesia. As one of

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the early pioneers of smart cities in Indonesia since 2017, Jambi City, along with 25 other cities, aims to construct sustainable and competitive city for the nation's future.

**Smart Governance Transformation in Jambi City**

The Jambi City Government acknowledges the significance of incorporating digital technology and information systems into governance. This dedication and proactive stance are clearly articulated in Jambi City's Mission for the 2018-2023 period, emphasizing the foremost goal of fortifying the bureaucracy and improving community services through information technology. Commitment to digital transformation is underscored by the enactment of Regional Regulation Number 1 of 2019 on the Implementation of Smart City[3].

The development of Smart Governance in the city of Jambi is reflected in the Mayor of Jambi Regulation Number 89 of 2018 regarding the Jambi Smart City Masterplan. This master plan includes the Comprehensive Plan or Master Plan of Smart City Jambi for the years 2018 – 2028, outlining the vision, mission, and work program plans that serve as guidelines for the Jambi City Government, the community, and the business world in organizing and realizing Jambi as a Smart City over a 10-year period. Additionally, it serves as a direction and guide for the leaders of the Jambi City region in achieving the developmental performance of Jambi as a Smart City. Through the implementation of Smart Governance policies, it is anticipated that effective, efficient, communicative local government management will be established, continually improving bureaucratic performance through innovation and the integrated adoption of technology (jambikota.go.id, 2022).

The development plan for Smart Governance in Jambi is divided into three forms of planning: the Short-Term Plan for 2018, the Medium-Term Plan for 2018-2023, and the Long-Term Plan for 2018-2028. These plans aim to create a governance framework that is not only efficient and effective but also communicative, fostering continuous improvement in bureaucratic performance through the integration of innovative and technological advancements.

[3] Interview results, Mayor of Jambi, 2023.

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**Table 4.**

**Priority Program Plan of the City Government of Jambi in the Development of Smart Governance**

| | |
|---|---|
| Short-Term Plan | • Strengthening the Local Government Work Plan Formulation Application (RKPD) - (E-musrenbang)<br>• Interoperability of e-planning (SIMREDA)<br>• Optimizing the information provider portal for both citizens and stakeholders - Open data<br>• Information Technology Competency Certification<br>• Citizen problem reporting system through the application (siKesal)<br>• Interoperability of e-government applications - Phase 1<br>• Management of information for the impoverished population<br>• Management of information for Non-Governmental Organizations (ORMAS) and Political Parties |
| **Medium-Term Plan** | • Online social assistance fund management system (bansos)<br>• Electronic drug abuse counselling<br>• Government asset management<br>• Employee official travel application<br>• Application for the management of rooms and assets (venue management) |
| **Long-Term Plan** | • Public services using IoT (Internet of Things)<br>• Community participation in online, sustainable policymaking |

*Source: Own elaboration (2023)*

The incorporation of digital technology and information systems is a strategic initiative aimed at improving the efficiency, transparency, and accessibility of government services. This involves leveraging technology to streamline administrative processes, enhance citizen engagement, and support data-driven decision-making. At the forefront of the Jambi City Government's efforts to embrace digital technology is the development of the SIKOJA (Sistem Informasi Kota Jambi) application, officially launched in July 2019. SIKOJA serves as the central hub for an integrated information system, consolidating various e-government service facilities in Kota Jambi. The primary objective of the SIKOJA application is to simplify public access to information about Kota Jambi, facilitating the seamless delivery of services to the community (jambiupdate.co, 2019).

The SIKOJA application in Kota Jambi offers diverse services, including citizen complaints, food prices, live CCTV feeds, weather forecasts, licensing, health information, and exploring locations. As part of the Jambi City Government's digital transformation, the SIKOJA application integrates various services into a single platform. Each department (SKPD) is now required to coordinate with the Communication and Informatics Office (Diskominfo) for connectivity with SIKOJA, discontinuing independent information system development. Jambi City's notable digital progress earned recognition as one of the 25 pioneer Smart Cities in Indonesia for 2021. This

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achievement is attributed to the "Gerakan Menuju 100 Smart City" program, a collaborative effort involving key ministries and government offices.

The digital transformation in Jambi City signifies a profound shift in traditional government mechanisms, aligning with broader trends in Indonesia. In this era, technology serves as the cornerstone of public administration, blurring the boundaries between citizens and the government. The city's initiative reflects a commitment to widespread digitization across public service sectors, underscoring the government's dedication to technologically transforming service provision. Jambi City's digital ambitions extend to crucial areas like transportation, urban planning, security, and administrative services. The overarching goal is to enhance the efficiency and quality of public services, fostering a more modern and competitive city[4]. This multifaceted approach mirrors Jambi City's resolute determination to stride confidently into a digital and inclusive future, where technology becomes a catalyst for positive change and improved governance.

Various programs that have been established and implemented require strong synergy between the central and regional governments. In Jambi, in addition to support from the central government, it must be acknowledged that the commitment of the regional government plays a crucial role. In this context, the role of the mayor is crucial in allocating additional resources that are not always available in the State Budget (APBN). Sometimes, written statements are needed as a form of commitment from the regional government to provide everything needed. Regions also greatly rely on assistance from the central government to support the implementation of ongoing programs[5].

The digitization process in Jambi is systematically initiated through meticulous digitalization planning, which commences at the Regional Development Planning Agency (Bappeda). Serving as the epicenter for formulating strategies and programs related to digital transformation, Bappeda orchestrates specific missions for various stakeholders from related units, spanning sectors such as transportation, communication, and public services. Key players in this coordinated effort include the Communication and Informatics Department (Diskominfo) and the Transportation Office (Dishub), with the Joint Command Operation Center (JCOC) playing a pivotal role in overall coordination.

The SIPADEK application stands out as a practical tool for online document management in Jambi City. This application facilitates the efficient handling of correspondence documents,

[4] Interview results, Mayor of Jambi, 2023.
[5] Interview results, Head of Jambi City Communications, and Information Department, 2023.

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whether incoming or outgoing, and their management at various levels, including the city mayor. SIPADEK empowers seamless document processing, providing flexibility for users to engage with correspondence from any location and at any time. The designation of Jambi City as one of the pioneer smart cities has spurred competition among Local Government Agencies (OPD) to actively engage in digital transformation by developing various applications. However, the success of these efforts' hinges on the quantity and quality of available human resources within each institution. Jambi City Communications, and Information Department (Diskominfo), tasked with preparing IT professionals within the city government, employs strategic approaches such as recruiting contract personnel based on the city's needs and engaging them in training activities. The recruitment process is conducted professionally, involving higher education institutions and offering competitive compensation to attract high-quality talent. Efforts to enhance human resource capabilities extend to participation in diverse training programs. Diskominfo collaborates with entities like the Regional Human Resources Development Agency (BPSDM) and organizes international training programs such as the Digital Technical Scholarship (DTS) and the Government Talent Academy. These initiatives underscore the city's commitment to nurturing a skilled workforce capable of driving digital transformation effectively[6].

To address citizen concerns, Jambi City offers accessible complaint services such as Sikesal, E-Lapor, and the 112-telephone service. Sikesal, initiated in 2017, serves as a dedicated platform for citizens to lodge complaints, facilitating the identification of prevalent issues in the city and the allocation of budgets for necessary assistance. The 112 service provides emergency assistance, while E-Lapor caters to general complaints, which may not be exclusive to Jambi City. These services collectively reflect the city's dedication to open communication and citizen engagement in the digital era.

## Drivers and Challenges on Smart Governance Implementations In Jambi

### Drivers

The acknowledgment of innovation as a pivotal driver of city development by the mayor of Jambi underscores the critical role of political leadership in steering the transformation towards Smart Governance. This recognition emphasizes the importance of forward-thinking strategies and a proactive approach to leverage technological advancements for the betterment of the city. Jambi City's approach to maximizing minimal funds through the effective utilization of human resources and community participation reflects a commitment to rapid and sustainable

[6] Interview results, Mayor of Jambi, 2023.

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progress. By leveraging local talents and engaging the community, the city strives to bridge development gaps efficiently, showcasing a resourceful and resilient approach to urban advancement.

The international lobbying efforts undertaken by Jambi City are instrumental in securing support and funds for critical development projects, such as landfills and self-help systems. This demonstrates a keen awareness of the global interconnectedness of cities and the need to tap into external resources for comprehensive and effective urban development. Through innovative strategies, community involvement, and collaboration with external stakeholders, Jambi City optimizes resources judiciously, aligning development initiatives with contemporary demands. The prioritization of business collaboration by the Jambi City government, coupled with a commitment to a corruption-free investment process, underscores a dedication to fostering sustainable development. By creating an environment conducive to ethical business practices, the city aims to attract investments that contribute to long-term growth and prosperity. The simplification of regulations, particularly through the support of single-app public services and discouragement of redundant innovations, reflects a strategic move by Jambi City to enhance administrative efficiency. This streamlined approach not only facilitates a smoother experience for residents but also contributes to a more transparent and accountable governance framework.

**Challenges**

The challenge of achieving data synergy sustain, primarily due to concerns over data interoperability. Significant silos between departments continue to impede the seamless upload and dissemination of data related to the accountability and transparency of local government performance. The process of updating this information for public access lacks promptness. One contributing factor is the delay in receiving essential documents from various government agencies, critical for government data processing and dissemination efforts. This delay in document submission from other government entities can be attributed to various factors, including bureaucratic procedures, administrative bottlenecks, and coordination challenges among different departments and offices. Consequently, the data needed for accountability and transparency initiatives may not reach the government in a timely manner, causing a lag in updating and making this information accessible to the public. Efforts to improve data synergy and streamline the process of uploading and disseminating information are crucial in addressing this challenge. Enhancing interdepartmental coordination, simplifying administrative procedures, and fostering a culture of transparency and accountability within government agencies are potential steps toward resolving this issue. This would ensure that the public has

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access to up-to-date and accurate information about the performance and activities of the local government.

Educational disparities, resistance to technology adoption, and intricate socio-economic dynamics. This essay delves into the multifaceted approach of Jambi City, exploring the strategies employed, the challenges faced, and the ongoing initiatives that shape its trajectory toward Smart Governance. Persistent educational and skill disparities coupled with resistance to technology adoption necessitate a thorough examination of the prevailing challenges. To comprehensively address these issues, academic scrutiny can delve into their effects on efficiency metrics, employee compliance levels, and any unforeseen consequences or challenges encountered in the adoption process. This in-depth analysis aims to provide a nuanced understanding of the barriers hindering the seamless integration of technology in various sectors.

The ongoing pursuit of an on-demand innovation program aligns with adaptive governance principles, emphasizing the need for further research into community awareness, responsiveness, perceptions, participation factors, and the effectiveness of communication strategies. Investigating these aspects will offer valuable insights into the societal dynamics influencing the success of such programs, promoting a more informed and adaptive approach to governance. Shifting the focus towards understanding community participation dynamics, considering socio-economic factors, is crucial. Proposed strategies for more equitable engagement can help gauge the impact of community participation on socio-economic factors, ensuring inclusive governance initiatives that address the specific needs of diverse communities. Challenges also arising from regulations and legislation, impacting development projects and potentially causing conflicts, underscore the intricacies of governance processes. A detailed exploration of these challenges is necessary to propose targeted solutions, enhancing the effectiveness of public policies and ensuring alignment with regulatory frameworks. This nuanced examination sets the stage for a more resilient and adaptable governance system capable of navigating evolving regulatory landscapes and fostering sustainable development.

## Discussion

According to Janowski (2015) Digital Government Evolution Model, four phases of the mode can be linked to the development of Smart governance in Jambi City.

**Digitization Or "Technology in Government"**

Janowski (2015) suggests that government organizations at the digitization stage may not uniformly undergo internal or external changes. However, the transformational journey of Jambi City contradicts this notion. Its journey is characterized by the strategic integration of

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Information Technology (IT) to redefine and optimize organizational processes, as elucidated by Bolívar & Meijer, (2016); Meijer et al., (2015). Their model emphasizes a smart use approach to ICTs, requiring smart collaboration, participation, internal coordination, decision-making, administration, and outcomes. Jambi City's commitment to embracing technological innovations represents a pivotal shift within the government's operational framework, marked by extensive technology integration.

Within the intricate landscape of internal organizational processes, Jambi City has embarked on a trajectory of change propelled by innovative initiatives. These initiatives underscore the city's proactive stance, leveraging technology not only for incremental gains but as a catalyst for fundamental improvements in efficiency, transparency, and overall operational effectiveness. The adoption of IT solutions serves as the impetus for this internal metamorphosis, ushering in a new era characterized by streamlined workflows and digitally empowered practices.

The external impact of Jambi City's digitization efforts becomes tangible with the integration of the Adaptive Traffic Control System (ATCS). This cutting-edge system transcends mere traffic control precision; it optimizes travel time, addressing crucial aspects of urban mobility. The seamless coordination achieved through technological integration extends beyond operational efficiency; it serves as a testament to the city's commitment to fostering collaboration among various departments and stakeholders.

A notable aspect of this transformation is the city's tangible shift towards a paperless approach. By reducing reliance on traditional documentation, Jambi City not only embraces eco-friendly practices but also paves the way for a more agile and responsive governance structure. This shift signifies a forward-thinking approach, aligning with contemporary sustainability goals and reinforcing the city's commitment to progressive governance practices (Thordsen et al., 2020).

**Transformation Or “Electronic Government”**

The adoption of the "one against one innovation" approach signifies a decentralized model for innovation. Each administrative unit, ranging from district (sub-district) to sub-district (kelurahan), and other government agencies (OPD), assumes the responsibility of developing one innovation annually. This distributed innovation strategy contributes to a series of solutions, collectively enhancing the overall city condition.

The city's leadership recognizes the pivotal role of innovation, collaboration, and strategic partnerships, not only in overcoming challenges but also in propelling the city towards a more

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connected and technologically advanced future. The commitment to ensuring that each innovation serves as a concrete solution to community issues highlights a results-oriented approach. This commitment reinforces the idea that technological advances are not merely achievements but tangible answers to challenges faced at various administrative levels.

A key priority is the strategic placement of CCTV at key intersections. This innovation enables effective traffic surveillance and control. For instance, the CCTV at Pulai intersection facilitates dynamic traffic light control based on real-time traffic conditions. The stages of transformation altering working patterns within the government's internal organization have been confirmed. This transformation subsequently extends to the influence of strong leadership, and the implementation of CCTV, as a control measure in a specific context, is used to justify this stage.

At this stage, the authors observes a transformation in the external structure of the government organization, impacting its relationship with other stakeholders. Consequently, the element of first-order outcomes (Table 1), i.e. changes to the government organization in the context of smart governance, has also been implemented.

**Engagement Or "Electronic Governance"**

In the ongoing journey of engagement stages with second-order outcomes indicators, the transformation in the government's position in relation to other urban actors is unfolding dynamically. A pivotal element of this transformation lies in the profound changes witnessed within internal government organizations, catalyzed by the establishment of the Command Center. Positioned as the central nerve center for all city activities, this initiative signifies a groundbreaking stride in the seamless integration of technology. The Command Center, serving as a focal point, orchestrates real-time monitoring through cutting-edge CCTV systems, facilitates precise attendance tracking, and enables minute-by-minute monitoring of tax movements across the entire cityscape. The collaborative efforts with the Ministry of Communication and Information (Kominfo) underline the strategic partnerships forged to propel the city into a technologically advanced era. A testament to this collaboration is the amplification of bandwidth and the improvement of internet infrastructure, achieved through partnerships with telecommunication pioneers. This, in turn, ensures better technology support for the community, including the provision of free WiFi services strategically positioned at key locations throughout the city.

Further enriching this engagement narrative is the collaboration with the police to implement the Advanced Driver Assistance Systems (Adlai), demonstrating an unwavering

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commitment to bolstering security measures. This sophisticated system, equipped with dark glass monitoring, facilitates not only effective vehicle tracking but also the vigilant surveillance of public areas in conjunction with the Local Police Department (Polda Jambi).

Despite these commendable strides, the impact on public involvement has yet to be optimally articulated. While the city has successfully implemented advanced technology with a centralized source for policymaking (the Command Center), and coordination has been realized at cross-institutional and higher ministry levels, active involvement from the community, public, and private sectors has not taken center stage in the narrative. As these engagement stages progress, there lies an opportunity to not only acknowledge but also elevate the role of these vital stakeholders, ensuring a more comprehensive and inclusive transformation that resonates at every level of the city's fabric.

**Contextualization Or "Policy-Driven Electronic Governance"**

During the Contextualization stage, the signs of a smart governance transformation are evident, particularly through third-order outcomes that manifest as significant improvements to the Jambi city. The deliberate annual focus on generating innovations with positive impacts and promoting sustainability aligns seamlessly with a forward-looking vision. This visionary approach extends beyond mere physical growth, emphasizing the elevation of well-being and collective intelligence, thereby reflecting a holistic perspective on urban development.

Building upon the strides in IT integration, the Jambi city government further expands its technological landscape by introducing key innovations such as Closed-Circuit Television (CCTV) and the Adaptive Traffic Control System (ATCS) at intersections. This technological infusion democratizes access to advanced solutions, making technology an integral and accessible facet of Jambi City's ongoing development. The regulatory framework supporting this smart city endeavor is firmly established in the Regional Regulation of Jambi City No. 1 of 2019, followed by the Mayor of Jambi Regulation No. 89 of 2018, which outlines the Masterplan of Jambi Smart City. These regulatory measures provide a structured foundation for the systematic implementation of smart city initiatives.

The authors conclude that, at this stage, the city's progression towards smart governance has taken concrete form, garnering positive feedback from the integration of technology within the government's internal organization. However, when viewed in a broader context, challenges and obstacles remain, particularly in areas such as the data center and integrated public access. These challenges indicate that this stage cannot be unequivocally categorized as fully implemented. Nevertheless, they also present opportunities for proactive addressing and

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resolution, ensuring a more robust and comprehensive smart governance transformation for Jambi City in the future. Table 5. Cross analysis in the evolution of smart governance in the Jambi City Government.

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| No | Stages (Janowski, 2015b) | Indentification Smart Governance Category (Bolívar & Meijer, 2016) | Internal government transformation | Transformation affects external relationships | Transformation is context specific | Cross analysis results |
|---|---|---|---|---|---|---|
| 1 | Digitization | Use of technology Organizational processes | (yes) | (yes) | (yes) | Jambi city has fundamentally undergone digitization stages, taking into consideration the implementation of technology within its internal organization. It has also targeted specific contexts and has had an impact on other external sectors. |
| | | | The strategic use of Information Technology (IT) involves connecting various innovative initiatives | The integration of Adaptive Traffic Control System (ATCS) allows for efficient traffic control, optimizing travel time. Coordinating with various departments and stakeholders, demonstrating the practical advantages of technological integration | In this aspect, the specificity of transformation is illustrated in the shift towards a paperless approach. | |
| 2 | Transformation | First-order outcomes: changes to the government organization | (yes) | (yes) | (yes) | |
| | | | The adoption of the "one against one innovation" approach signifies a decentralized approach to innovation. Each administrative unit, from district (kecamatan) to sub-district (kelurahan) and other governmnet agencies (OPD), takes responsibility for developing one innovation annually. | The city's leadership recognizes the importance of innovation, collaboration, and strategic partnerships. This commitment reinforces the idea that technological advancements are not mere achievements but tangible answers to challenges faced at various administrative levels. | Strategic placement of CCTV at key intersections becomes a priority. This innovation enables effective traffic surveillance and control. | The stages of transformation that alter the working patterns within the government's internal organization have been confirmed. This subsequently extends to the influence of strong leadership, and the implementation of CCTV, as a control measure in a specific context, is used to justify this stage. |
| 3 | Engagement | Second-order outcomes: changes in the position of government vis-a ` | (yes) | (yes) | (no) | |
| | | | The initiation of a Command Center as the central hub for all city activities represents a | Collaborating closely with the Ministry of Communication and Information (Kominfo) | Collaborating with the police to implement Advanced Driver | In these stages, Jambi city has successfully implemented technology with a centralized |

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| No | Stages (Janowski, 2015b) | Indentification Smart Governance Category (Bolívar & Meijer, 2016) | Internal government transformation | Transformation affects external relationships | Transformation is context specific | Cross analysis results |
|---|---|---|---|---|---|---|
| | | -vis other urban actors | significant leap in technological integration. This centralized control allows for real-time monitoring through CCTV, attendance tracking, and minute-by-minute tax movement monitoring across the city. | underscores strategic partnerships. Enhancing bandwidth and internet infrastructure, in collaboration with telecommunication founders, facilitates better technology support for the community, including free WiFi services at key locations. | Assistance Systems (Adlai) demonstrates a commitment to enhancing security. This system, equipped with dark glass monitoring, allows for effective vehicle tracking and monitoring of public areas in collaboration with Local Police Department (Polda Jambi). | source for policymaking (command center). Coordination has also been carried out at the cross-institutional and higher ministry levels. However, active involvement from the community and private sector has not yet been prominently observed. |
| 4 | Contextualization | Third-order outcomes: improvements to the city<br><br>Actions | (yes) | (no) | (no) | |
| | | | The annual focus on generating innovations with positive impacts and promoting sustainability aligns with a forward-looking vision. | After promoting IT integration, the Jambi city government expands its technological landscape with the installation of Closed-Circuit Television (CCTV) and Adaptive Traffic Control System (ATCS) at intersections. This innovation democratizes access to technology, allowing it to become an integral part of Kota Jambi's development | The implementation of the smart city has been regulated in the Regional Regulation (Peraturan Daerah) of Jambi City No. 1 of 2019 and the Mayor of Jambi Regulation No. 89 of 2018 concerning the Masterplan of Jambi Smart City. | In this stage, the development of the city towards smart governance has taken shape, with positive feedback from technology within the government's internal organization. However, for a broader context, there are still obstacles and challenges that can be addressed and resolved (data center, and integrated public access). |

*Source: Authors (2023)*

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## Conclusion

This research illuminates the ongoing evolution of smart governance in Jambi City, driven by the national Electronic-Based Government System (SPBE). This transformative initiative not only supports local governance but also aligns with the broader Smart Cities Movement, positioning Jambi City as a participant in this nationwide endeavor. SPBE, by harnessing Information and Communication Technologies (ICTs), elevates data processing efficiency and decision-making capabilities, embodying the principles of the Smart City concept, particularly in the provision of public services. This technology-driven approach, embodied by SPBE, contributes significantly to the development of intelligent and sustainable urban environments. The system integrates data and technology, providing valuable insights to address urban challenges and enhance residents' quality of life. By facilitating effective data collection across various city facets, SPBE enables targeted strategies for resource optimization and sustainability, aligning seamlessly with the Smart City framework and fostering comprehensive urban transformation. Jambi City exemplifies its commitment to this digital journey through initiatives like the SIKOJA Application and the City Operation Center (JCOC), showcasing technological advancements aimed at efficient governance and improved public services. While centralistic strategies continue to demonstrate effectiveness, persistent challenges, such as the digital divide and difficulties in data integration due to a lack of interoperability and single data integration, highlight the need for sustainable solutions. Jambi City's dedication to digital transformation is commendable; however, addressing unique socio-cultural landscapes is imperative. Challenges related to infrastructure and human resources underscore the complexity of this journey. The city emerges as a representative case, emphasizing the necessity for inclusive approaches and comprehensive strategies in diverse societies pursuing digital transformation. As Jambi City navigates through these challenges, its experiences serve as valuable lessons for other regions undertaking similar transformative endeavors.

## References

Alzahrani, L., Al-Karaghouli, W., & Weerakkody, V. (2017). Analysing the critical factors influencing trust in e-government adoption from citizens' perspective: A systematic review and a conceptual framework. *International Business Review*, *26*(1), 164–175. https://doi.org/10.1016/j.ibusrev.2016.06.004

Anderson, D., Wu, R., Cho, J. S., & Schroeder, K. (2015). *E-Government Strategy, ICT and Innovation for Citizen Engagement*. Springer New York. https://books.google.si/books?id=VIdNCwAAQBAJ

ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1187

Anthopoulos, L. G., & Reddick, C. G. (2013). *Government e-Strategic Planning and Management: Practices, Patterns and Roadmaps*. Springer New York. https://books.google.si/books?id=I1m-BAAAQBAJ

Bannister, F., & Connolly, R. (2011). Trust and transformational government: A proposed framework for research. *Government Information Quarterly*, *28*(2), 137–147.

Barcevičius, E., Cibaitė, G., Codagnone, C., Gineikytė, V., Klimavičiūtė, L., Liva, G., Matulevič, L., Misuraca, G., Vanini, I., European Commission, & Joint Research Centre. (2019). *Exploring digital government transformation in the EU: Analysis of the state of the art and review of literature.* https://op.europa.eu/publication/manifestation_identifier/PUB_KJNA29987ENN

Bertot, J., & Jaeger, P. (2008). The E-Government paradox: Better customer service doesn't necessarily cost less. *Government Information Quarterly - GOVT INFORM QUART*, *25*, 149–154. https://doi.org/10.1016/j.giq.2007.10.002

Bolívar, M. P. R. (2017). *Smart Technologies for Smart Governments: Transparency, Efficiency and Organizational Issues*. Springer International Publishing. https://books.google.si/books?id=vYotDwAAQBAJ

Bolívar, M. P. R., & Meijer, A. J. (2016). Smart governance: Using a literature review and empirical analysis to build a research model. *Social Science Computer Review*, *34*(6), 673–692.

Bretschneider, S., & Mergel, I. (2011). Technology and public management information systems: Where have we been and where are we going. In *The State of Public Administration: Issues, Problems and Challenges* (pp. 187–203).

Carayannis, E. G., & Hanna, N. K. (2016). *Mastering Digital Transformation: Towards a Smarter Society, Economy, City and Nation*. Emerald Group Publishing Limited. https://books.google.si/books?id=g2BoCwAAQBAJ

Ciesielska, M., & Janowski, T. (2019). Inter-governmental Collaborative Networks for Digital Government Innovation Transfer – Structure, Membership, Operations. In L. M. Camarinha-Matos, H. Afsarmanesh, & D. Antonelli (Eds.), *Collaborative Networks and Digital Transformation* (pp. 295–307). Springer International Publishing.

Creswell, J. W. (2013). *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*. SAGE Publications. https://books.google.si/books?id=Ykruxor10cYC

Creswell, J. W., & Creswell, J. D. (2018). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE Publications. https://books.google.si/books?id=s4ViswEACAAJ

ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1187

Dias, R., & Gomes, M. (2021). From Electronic Government to Digital Governance: Transformation Governance Models and Strategies. *Ciências e Políticas Públicas / Public Sciences & Policies*, *7*, 119–143. https://doi.org/10.33167/2184-0644.CPP2021.VVIIN1/pp.119-143

Eisenhardt, K. M. (1989). Building theories from case study research. *Academy of Management Review*, *14*(4), 532–550.

Gano, G. (2013). The New Face of Government: Publics and Policymaking Online. *Journal of Public Administration Research and Theory: J-PART*, *23*(3), 755–758. JSTOR.

Giffinger, R., Fertner, C., Kramar, H., Kalasek, R., Milanović, N., & Meijers, E. (2007). *Smart cities—Ranking of European medium-sized cities*.

Hancock, D. R., Algozzine, B., & Lim, J. H. (2021). *Doing case study research: A practical guide for beginning researchers*.

Herdiyanti, A., Hapsari, P., & Susanto, T. (2019). Modelling the Smart Governance Performance to Support Smart City Program in Indonesia. *Procedia Computer Science*, *161*, 367–377. https://doi.org/10.1016/j.procs.2019.11.135

indonesia.go.id. (2022, February 1). *Pemerataan Infrastruktur TIK Dukung Akselerasi Transformasi Digital* [Government]. Https://Www.Indonesia.Go.Id/. https://www.indonesia.go.id/kategori/editorial/3580/pemerataan-infrastruktur-tik-dukung-akselerasi-transformasi-digital%20

jambikota.go.id. (2022, Agustus). *Visi & Misi Kota Jambi (2018—2023)* [Government]. Jambikota.Go.Id. https://jambikota.go.id/content/visi_misi

jambiupdate.co. (2019, July 29). *Pemkot Jambi Launching Aplikasi SIKOJA, Ini Tujuannya*. https://www.jambiupdate.co/artikel-pemkot-jambi-launching-aplikasi-sikoja-ini-tujuannya.html

Janowski, T. (2015a). Digital government evolution: From transformation to contextualization. *Government Information Quarterly*, *32*, 221–236. https://doi.org/10.1016/j.giq.2015.07.001

Janowski, T. (2015b). Digital government evolution: From transformation to contextualization. In *Government information quarterly* (Vol. 32, Issue 3, pp. 221–236). Elsevier.

Janowski, T., Estevez, E., & Baguma, R. (2018). Platform governance for sustainable development: Reshaping citizen-administration relationships in the digital age. *Platform Governance for Sustainable Development*, *35*(4, Supplement), S1–S16. https://doi.org/10.1016/j.giq.2018.09.002

ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1187

kominfo.go.id. (2017, November 28). *Langkah Menuju "100 Smart City."* https://www.kominfo.go.id/content/detail/11656/langkah-menuju-100-smart-city/0/sorotan_media

Medaglia, R., Gil-Garcia, J. R., & Pardo, T. (2021). Artificial Intelligence in Government: Taking Stock and Moving Forward. *Social Science Computer Review*, 089443932110340. https://doi.org/10.1177/08944393211034087

Meijer, A., Rodríguez, B., & Pedro, M. (2015). Governing the smart city: A review of the literature on smart urban governance. *International Review of Administrative Sciences*, *82*. https://doi.org/10.1177/0020852314564308

Mergel, I., Edelmann, N., & Haug, N. (2019). Defining digital transformation: Results from expert interviews. *Government Information Quarterly*, *36*(4), 101385. https://doi.org/10.1016/j.giq.2019.06.002

Mergel, I., Schweik, C., & Fountain, J. (2009). The Transformational Effect of Web 2.0 Technologies on Government. In *Public Policy*. https://doi.org/10.2139/ssrn.1412796

Saldana, J. (2014). *Thinking Qualitatively: Methods of Mind*. SAGE Publications.

Savaget, P., Chiarini, T., & Evans, S. (2019). Empowering political participation through artificial intelligence. *Science and Public Policy*, *46*(3), 369–380.

Savoldelli, A., Codagnone, C., & Misuraca, G. (2014). Understanding the e-government paradox: Learning from literature and practice on barriers to adoption. *Government Information Quarterly*, *31*, S63–S71. https://doi.org/10.1016/j.giq.2014.01.008

Schuchmann, D., & Seufert, S. (2015). Corporate Learning in Times of Digital Transformation: A Conceptual Framework and Service Portfolio for the Learning Function in Banking Organisations. *International Journal of Advanced Corporate Learning (iJAC)*, *8*. https://doi.org/10.3991/ijac.v8i1.4440

Schwertner, K. (2017). Digital transformation of business. *Trakia Journal of Science*, *15*(Suppl.1), 388–393. https://doi.org/10.15547/tjs.2017.s.01.065

Scupola, A., & Mergel, I. (2021). Co-production in digital transformation of public administration and public value creation: The case of Denmark. *Government Information Quarterly*, 101650. https://doi.org/10.1016/j.giq.2021.101650

Sivarajah, U., Irani, Z., & Weerakkody, V. (2015). Evaluating the use and impact of Web 2.0 technologies in local government. *Government Information Quarterly*, *32*. https://doi.org/10.1016/j.giq.2015.06.004

Strauss, A., & Corbin, J. (1998). *Basics of qualitative research techniques*.

ISSN Print: 2686-6242, ISSN Online: 2686-6250
https://doi.org/10.30589/proceedings.2024.1187

Tangi, L., Janssen, M., Benedetti, M., & Noci, G. (2021). Digital government transformation: A structural equation modelling analysis of driving and impeding factors. *International Journal of Information Management*, *60*, 102356. https://doi.org/10.1016/j.ijinfomgt.2021.102356

Thordsen, T., Murawski, M., & Bick, M. (2020). How to Measure Digitalization? A Critical Evaluation of Digital Maturity Models. In M. Hattingh, M. Matthee, H. Smuts, I. Pappas, Y. K. Dwivedi, & M. Mäntymäki (Eds.), *Responsible Design, Implementation and Use of Information and Communication Technology* (Vol. 12066, pp. 358–369). Springer International Publishing. https://doi.org/10.1007/978-3-030-44999-5_30

YCP Solidiance. (2020). *Can Indonesia Achieve '100 Smart Cities' by 2045?* https://ycpsolidiance.com/white-paper/can-indonesia-achieve-100-smart-cities-by-2045

YCP Solidiance. (2022, March). *The Digital Transformation of Indonesia's Government*. Https://Ycpsolidiance.Com. https://ycpsolidiance.com/article/indonesia-government-digital-transformation

Yin, R. K. (2017). *Case Study Research and Applications (International Student Edition): Design and Methods*. SAGE Publications. https://books.google.si/books?id=tHuiswEACAAJ