

DIGITAL TRANSFORMATION THROUGH BAPENDA SOUTH SULAWESI MOBILE: A REGIONAL E-GOVERNMENT INITIATIVE

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Abstract

This study aims to analyze the success of Bapenda Sulsel Mobile, an e-government-based service implemented by the Regional Revenue Agency of South Sulawesi Province. The research focuses on assessing the maturity level of this innovation within the framework of digital public service transformation. Using a qualitative descriptive approach, data were collected through in-depth interviews, field observations, and document analysis to examine the system's development, citizen engagement, and organizational readiness. The analysis adopts the four-stage e-Government Maturity Model, Presence on the Web, Interaction between Citizen and Government, Complete Transaction over the Web, and Integration of Services—to evaluate the performance of digital governance in a regional context. The findings indicate that Bapenda Sulsel Mobile has achieved a high level of digital maturity, with significant progress in transparency, responsiveness, and efficiency of tax administration. The application enables end-to-end digital transactions, strengthens communication between citizens and government, and enhances accountability in local revenue services. Moreover, institutional adaptability and supportive leadership have contributed to the sustainability of innovation. The study concludes that Bapenda Sulsel Mobile represents an effective model of regional digital governance that integrates technology, organization, and citizen participation. The results offer valuable insights for local governments seeking to accelerate e-government transformation and improve public service performance in Indonesia's digital era.

Keywords: citizen participation; digital governance; e-government innovation; public service transformation; regional revenue agency

Introduction

1. Background:

The rapid advancement of information and communication technology (ICT) has fundamentally transformed how governments deliver public services and interact with citizens. Digital transformation has become an inevitable demand for modern governance, compelling public institutions to become more transparent, efficient, and responsive to societal needs. The emergence of e-government represents a paradigm shift from traditional bureaucratic systems toward digitalized and citizen-oriented governance models. Governments around the world increasingly adopt technology to strengthen accountability, expand accessibility, and streamline administrative processes in alignment with the principles of good governance and public value creation.

In Indonesia, the formal foundation for e-government implementation was laid out through Presidential Instruction No. 3 of 2003 on the National Policy and Strategy for the Development of E-Government, which mandates every governmental agency to optimize ICT in supporting its core administrative and service functions. This policy was later reinforced by Presidential Regulation No. 95 of 2018 concerning Sistem Pemerintahan Berbasis Elektronik (SPBE), positioning digital governance as a national priority. The SPBE framework emphasizes interoperability, efficiency, and public accountability through data integration and digital infrastructure. Consequently, digital governance is no longer an optional reform but a structural necessity for enhancing institutional performance and improving citizen satisfaction.

At the regional level, e-government has become a central component of administrative reform and

public policy innovation. Regional governments are expected to develop customized solutions that address local challenges while maintaining alignment with national interoperability standards. Among the regions that have demonstrated significant progress is South Sulawesi Province, through the creation of the Bapenda Sul-Sel Mobile Application developed by the Regional Revenue Agency (Badan Pendapatan Daerah – Bapenda). This digital innovation allows citizens to access vehicle-tax information, generate payment codes, perform online transactions, and submit complaints directly from their smartphones. By digitalizing the taxation process, Bapenda aims to reduce bureaucratic layers, eliminate intermediaries, and provide faster and more transparent tax services, thereby fostering a culture of efficiency and accountability.

However, the transition to digital governance is complex and multifaceted. While technological infrastructure has been successfully deployed, its effectiveness and sustainability depend heavily on institutional readiness, inter-agency collaboration, and citizen participation. Several users have reported obstacles such as registration difficulties, system delays, and verification errors, while others noted limited awareness of the application's existence. In addition, integration among institutions particularly between Bapenda, the Regional Police (Ditlantas), and PT Jasa Raharja remains partial. These challenges reveal that the success of digital innovation cannot be measured solely by system deployment but must also consider the organizational, social, and behavioral dimensions that determine its actual utilization.

The case of Bapenda Sul-Sel Mobile thus offers a valuable opportunity to examine regional e-government innovation in the context of Indonesia's decentralized administrative system. While national-level digital platforms have been studied extensively, regional transformations—where citizens directly experience service delivery often remain underexplored. Most existing research on e-government in Indonesia (e.g., (Chen & Huang, 2007; Robert, 2003; Tidd & Bessant, 2021) focuses on the technological and administrative efficiency aspects of digitalization. Yet there is limited empirical evidence addressing institutional maturity, citizen interaction, and inter-agency integration at the subnational level, particularly in revenue and taxation sectors that rely heavily on cross-institutional coordination.

From a theoretical perspective, De Vries et al., (2016) emphasize that the success of public-sector innovation depends on the synergy among individual competence, organizational structure, and cultural openness to change. In local government settings, these elements must align with community trust, digital literacy, and leadership commitment to reform. Similarly, Real & Poole, (2005) highlight that the sustainability of innovation emerges from continuous interaction between technological adaptation, institutional structure, and human agency. Within this theoretical framework, Bapenda Sul-Sel Mobile becomes an illustrative example of how technology mediates bureaucratic transformation, shapes organizational learning, and redefines the government–citizen relationship in Indonesia's regional context.

Globally, e-government maturity is understood as a multi-dimensional evolution involving technological, managerial, and social innovation. The United Nations E-Government Development Index (EGDI) identifies three key success factors shared by leading digital-governance nations: institutional coordination, citizen inclusion, and digital capability building. These factors are especially relevant in Indonesia, where decentralization requires provinces to design independent yet interoperable digital systems. The Bapenda Sul-Sel Mobile initiative reflects the practical application of these principles building localized capacity while aligning with national digital transformation objectives.

The introduction of digital services in public administration also reshapes bureaucratic interaction patterns. Traditional hierarchical communication channels are being replaced by networked

governance models that emphasize real-time data sharing, feedback loops, and collaborative problem-solving. Scholars such as De Vries et al., (2016) note that digital transformation in government requires leadership capable of fostering innovation while maintaining institutional stability. In this regard, Bapenda Sul-Sel Mobile exemplifies how adaptive leadership and cross-sector collaboration can institutionalize digital change beyond the boundaries of mere technology adoption.

E-government development in Indonesia also supports the long-term national vision of Indonesia 2045, which aspires to create a knowledge-based, digitally integrated society. Local innovations like Bapenda Sul-Sel Mobile serve a dual role: they improve operational efficiency and simultaneously act as prototypes for scalable national reforms. Regional governments thus function as living laboratories for digital experimentation, providing contextualized models that inform national policy design. Understanding the achievements and constraints of Bapenda Sul-Sel Mobile therefore provides valuable insight into how regional initiatives contribute to Indonesia's broader agenda of administrative modernization and public service excellence.

Previous literature suggests that e-government effectiveness must be evaluated comprehensively rather than technologically. According to Tidd & Bessant, (2021), innovation management involves the integration of technological, market, and organizational change within a coherent system. In the case of Bapenda Sul-Sel Mobile, the innovation success cannot be separated from leadership support, institutional learning, and citizen adaptation. Moreover, the increasing use of mobile-based applications reflects a broader trend of digital inclusion, where public services evolve toward personalized and data-driven experiences that enhance user engagement and trust.

Despite these advancements, a research gap remains concerning the degree of success and maturity of regional e-government initiatives. Few studies have systematically analyzed how local innovations progress through distinct stages of digital development. The E-Government Maturity Model proposed by (Alhomod & Shafi, 2012) provides a structured analytical tool to evaluate this progression across four interrelated dimensions:

- a) Presence on the Web,
- b) Interaction between Citizen and Government,
- c) Complete Transaction over the Web, and
- d) Integration of Services.

Applying this framework allows the study to assess how Bapenda Sul-Sel Mobile evolves from basic informational presence toward full digital integration and cross-agency collaboration.

Therefore, this study aims to explain and analyze the level of success of the Bapenda Sul-Sel Mobile innovation as an e-government-based public service implemented by the Regional Revenue Agency of South Sulawesi Province. The analysis emphasizes not only technological achievements but also institutional adaptation, citizen engagement, and inter-organizational collaboration. Ultimately, this research contributes both theoretically and practically to the understanding of regional e-government transformation, providing insights that can guide future policy development and the continuous improvement of digital public services in Indonesia.

Literature Review

Concept of Innovation in the Public Sector and Digital Governance

Innovation in the public sector has become a central theme in modern public administration studies. Unlike innovations in the private sector that are profit-oriented, public sector innovation focuses on improving service efficiency, bureaucratic transparency, and citizen satisfaction. (Robert, 2003), in his Diffusion of Innovations theory, argues that innovation adoption in public organizations is strongly influenced by communication, leadership, and the social system's readiness to embrace change. Public sector innovation should not be understood merely as the application of new technologies but as a

holistic transformation of administrative structures, governance systems, and organizational values (Tidd & Bessant, 2021).

Categorize public sector innovation into two dimensions: administrative innovation and technological innovation. Administrative innovation involves changes in procedures, organizational structures, and internal policies, while technological innovation focuses on the use of digital tools, information systems, and online applications to enhance service delivery. In Indonesia, technological innovation is typically embodied in e-government initiatives, which serve as an instrument of bureaucratic reform aimed at improving public service performance (Chen & Huang, 2007).

Emphasize that successful digital innovation in the public sector depends on the integration of technology, human resources, and transformational leadership (Hilmawan et al., 2023). In line with this, the systematic review by De Vries et al., (2016) emphasizes that the success of public sector innovation is determined by the synergy among individual factors (leadership, competence, and employee motivation), organizational structure (rules, resources, and coordination), and organizational culture or climate (openness, learning orientation, and support for change). The Bapenda Sul-Sel Mobile application exemplifies such innovation by aligning digital transformation with principles of transparency and good governance.

Theoretical Framework and Stages of E-Government Success

The conceptual framework guiding this study is based on Alhomod & Shafi, (2012), who identify four stages of e-government implementation success: (1) Presence on the Web, (2) Interaction between Citizen and Government, (3) Complete Transaction over the Web, and (4) Integration of Services. This framework provides a comprehensive assessment of how government agencies utilize digital technology to improve public service delivery.

The first stage, Presence on the Web, marks the initial entry of government institutions into the digital sphere, primarily to disseminate information. The second stage, Interaction between Citizen and Government, involves two-way communication channels that allow citizens to engage with public officials. The third stage, Complete Transaction over the Web, reflects the maturity of online systems that enable citizens to complete service transactions electronically. The final stage, Integration of Services, represents full interagency collaboration and data interoperability, signifying a mature e-government ecosystem.

Real & Poole, (2005) complement this model by identifying three key indicators of innovation success: use, integration, and effectiveness. In public service contexts, these indicators assess whether technological systems provide measurable benefits to citizens rather than merely symbolizing modernization efforts.

Presence on the Web: The Foundation of Digital Governance

The digital presence of government institutions represents the foundation of e-government maturity. (Khanra & Joseph, 2019) argues that a government's online presence serves as an indicator of transparency, accountability, and public accessibility. In Indonesia, this stage is typically realized through the establishment of official websites and digital information portals that enhance citizens' access to administrative data and services.

The implementation of the Dynamic Archival Information System (SIKD) demonstrates the government's commitment to digital transformation and record transparency (Tjiptasari, 2018). Similarly, (Sudarsana et al., 2024) reveal that digital archive initiatives in Karawang's Department of Archives and Libraries significantly improved administrative efficiency and service accessibility. These studies collectively indicate that the digital presence of governmental institutions reflects their readiness to adopt data-driven governance models.

In the case of Bapenda Sul-Sel Mobile, the government's digital presence is realized through mobile

platforms available on Android and iOS, offering tax-related information, payment schedules, and complaint services. Such initiatives demonstrate that the local government has successfully achieved the initial stage of e-government maturity.

Interaction between Citizen and Government: Interactivity and Responsiveness

The second stage of e-government emphasizes interactive engagement between citizens and government agencies. (McNeal et al., 2008) states that the success of digital governance depends not only on information availability but also on the quality of two-way communication and responsiveness of public institutions.

Fathurrohman et al., (2023) found that technology-based archive management enhances both employee performance and the responsiveness of public services. Likewise, Non et al., (2023) demonstrated that digital communication channels between archival staff and citizens improve public trust in local government institutions. Furthermore, Palupi & Putra, (2024) observed that electronic filing systems strengthen transparency and public participation in administrative processes.

In Bapenda Sul-Sel Mobile, interactive features such as complaint submission and real-time feedback exemplify digital responsiveness. This aligns with Khanra's (2019) observation that citizen-government interaction represents a critical indicator of public trust and digital service success.

Complete Transaction over the Web: Digital Efficiency in Public Administration

The third stage of e-government maturity involves the ability of citizens to complete full service transactions online. According to (Yasir et al., 2020), the effectiveness of this stage depends on the reliability of payment systems, data security, and user trust in digital services.

(Ramudin, 2020) showed that implementing ISO 15489-1:2016 digital archival standards at Bank Indonesia enhanced administrative transparency and operational efficiency. Similarly, (Fitriana & Christiani, 2018) reported that digital archive management significantly reduced retrieval time and errors in government processes, contributing to faster and more accurate service delivery.

In the context of Bapenda Sul-Sel Mobile, this stage is exemplified by the ability of users to pay vehicle taxes entirely online through digital channels such as mobile banking, e-wallets, and retail payment points. These mechanisms demonstrate not only technological advancement but also the institutional commitment to administrative efficiency and user-centric service.

Integration of Services: Collaboration and Data Interoperability

The fourth and final stage of e-government success is characterized by interagency integration and service interoperability. Malodia et al., (2021) notes that service integration requires policy alignment, data standardization, and institutional cooperation. Meanwhile, Pu et al., (2025) highlight that an integrated digital government ecosystem contributes to sustainable development and enhances adaptive governance.

In Indonesia, (Nurdiansyah et al., 2025) emphasize that digital preservation and archival accountability are essential foundations for cross-institutional service integration. (Shirayuki & Wati, 2025) further argue that integrated archival storage policies ensure the continuity and security of digital governance systems.

The Bapenda Sul-Sel Mobile initiative demonstrates movement toward this stage through its integration with the Police Department, Jasa Raharja, and the National Online Samsat system. This integration underscores that technological innovation in local government must be accompanied by institutional collaboration to achieve sustainable and interoperable service delivery.

Digital Archives and Artificial Intelligence in Government Innovation

Modern governance innovation increasingly relies on digital archival systems and artificial intelligence (AI). (Colavizza et al., 2022) highlight that the integration of AI in archival management facilitates

efficiency, predictive analytics, and data-driven decision-making. Similarly, (Spina, 2023) explores how AI tools such as ChatGPT and HTS streamline archival processing and historical documentation, reinforcing institutional accountability and transparency.

Azira, (2017) and Mustakim & Prasetyawan, (2024) also underscore that digital modernization in archival institutions enhances organizational credibility and efficiency. Lestari & Oktarina, (2025) argue that effective dynamic record management reflects bureaucratic readiness in dealing with digital disruption and data complexity. The synergy between AI, digital archives, and governance innovation signifies a paradigm shift toward knowledge-based governance a model where information management becomes integral to policy innovation.

Research Gap and Study Position

A review of the literature reveals that most e-government studies in Indonesia focus on general administrative efficiency, digital archiving, or internal organizational management. Few have examined the success of digital innovations specifically within the local taxation sector, despite its strategic importance for regional fiscal accountability and revenue generation.

This study addresses that gap by analyzing the Bapenda Sul-Sel Mobile innovation using the (Alhomod & Shafi, 2012) framework. By doing so, it contributes to the broader discourse on public policy innovation, digital governance, and citizenship management aligning closely with the research focus of the Journal of Social and Political Sciences (JSP). The study also offers a localized perspective on how regional e-government initiatives can advance the principles of transparency, efficiency, and citizen engagement in Indonesia's digital governance ecosystem..

Methods

This research employs a qualitative descriptive approach to examine how the Bapenda Sulsel Mobile application represents an innovation in e-government implementation at the regional level. The study utilizes both primary and secondary data. Primary data were obtained through in-depth interviews with officials and staff of the Regional Revenue Agency of South Sulawesi Province, system developers, and community users of the application. Secondary data were gathered through document analysis of the agency's annual reports, regional policy documents, and academic literature related to public innovation and e-government.

Data were collected using three main techniques: in-depth interviews, document analysis, and indirect observation. The interviews focused on the digital innovation process, implementation challenges, and the impacts on efficiency and transparency. Document analysis was used to examine regulatory frameworks and digital transformation strategies, while observations involved monitoring key features of the application, such as online tax payments, vehicle data validation, and QRIS integration.

The data analysis followed the Miles and Huberman (1992) interactive model, consisting of three stages: data reduction, data display, and conclusion drawing or verification. This approach allowed the researcher to identify patterns and relationships among technological, human resource, and organizational culture factors influencing innovation success. To ensure data validity and reliability, the study applied triangulation of sources and methods, comparing interview data with official documents and observational findings. In addition, member checking was conducted with key informants to ensure the credibility of interpretations.

The results are presented through thematic mapping and flow diagrams illustrating the stages of innovation from planning to evaluation. These visualizations help assess the interaction between digital infrastructure, bureaucratic systems, and public satisfaction in using Bapenda Sulsel Mobile, thereby providing insights into how such innovation contributes to enhancing efficiency and transparency in regional public services through e-government initiatives

Results

This study aims to explain and analyze the level of success of the Bapenda Sulsel Mobile innovation as an e-government-based public service implemented by the Regional Revenue Agency of South Sulawesi Province. Based on interviews, observations, and document analysis, this innovation has demonstrated significant progress in improving service efficiency, public information transparency, and citizen engagement within the digital governance ecosystem.

- 1. The analysis adopts the e-Government Maturity Model by Alhomod and Shafi (2012), which categorizes government digitalization into four stages:
- 2. Presence on the Web,
- 3. Interaction between Citizen and Government,
- 4. Complete Transaction over the Web, and
- 5. Integration of Services.

Each stage reflects a level of digital readiness and institutional maturity, as well as the extent of inter-agency collaboration and citizen involvement.

1. Presence on the Web

The Presence on the Web stage represents the initial phase of e-government maturity, where public institutions establish an online presence to provide accessible information to citizens. In this stage, Bapenda Sulawesi Selatan focused on building a credible and consistent digital presence through its official website, social media accounts, and the Bapenda Sulsel Mobile application. These platforms serve as the main channels for tax information dissemination and public outreach.

Informant P.1 stated:

“This application is the flagship program of the Regional Revenue Agency of South Sulawesi Province and has been widely promoted through various media.”

Meanwhile, Informant P.2 added:

“We regularly update service schedules and tax announcements in the application so that people don’t need to visit the office.”

To illustrate the achievements in this early stage of digitalization, Table 1 presents the main theoretical indicators, empirical findings, and interview excerpts.

Table 1. Presence on the Web Stage in the Implementation of Bapenda Sulsel e-Government

Theoretical Indicator (Alhomod & Shafi, 2012)	Empirical Findings	Interview Excerpts	Achievement Status
Active website and online information channels	Website and mobile app actively used for tax publication and public outreach	“This application is the flagship program of Bapenda and has been widely promoted.” (P.1)	Achieved
Digital availability of public service information	Tax information, service schedules, and announcements are regularly updated	“We update service schedules and announcements routinely to keep citizens informed.” (P.2)	Achieved
Online service promotion efforts	Promotion conducted via	“We use multiple media, including Instagram and local	Achieved

social media,
digital banners, radio, to promote digital
and local radio services.” (P.3)
broadcasts

Source: Field interviews (P.1–P.3) and Bapenda Susel documentation, 2024.

The evidence presented in Table 1 confirms that Bapenda Susel has effectively established a consistent and reliable digital presence. The agency’s website and mobile application act as the first gateway for citizens to obtain information related to regional tax administration. By ensuring that data are regularly updated and visually accessible, the institution fulfills the principle of *informational transparency*—one of the key elements of good governance in the digital era. This digital presence has helped reduce the dependency on physical visits to government offices and minimized administrative bottlenecks that previously hindered service accessibility.

Furthermore, the *Presence on the Web* stage reflects Bapenda’s strategic effort to build public awareness and digital literacy regarding taxation. The use of multi-channel communication, including social media and radio campaigns, indicates a proactive approach to reaching diverse demographic segments. Informant P.3 mentioned that promotional content was tailored to younger audiences using social-media posts and interactive visuals, while traditional channels such as radio were maintained for older taxpayers. This multi-platform strategy illustrates the agency’s understanding of media behavior diversity and its importance for inclusive e-government adoption.

From an institutional perspective, this stage also signifies the initial transformation of Bapenda’s organizational communication model. The transition from paper-based circulars to real-time digital updates demonstrates the agency’s capacity to adapt to technological change and align its practices with open-data principles. The effort resonates with the view of (Chen & Huang, 2007) that information dissemination in e-government is not solely about technological availability but also about cultivating transparency and trust. In Bapenda’s case, consistent online visibility has enhanced public confidence and reinforced the perception of administrative reliability.

Lastly, this phase serves as the groundwork for more advanced stages of e-government maturity. The successful establishment of online presence ensures that subsequent stages interaction, transaction, and integration can operate within a robust informational ecosystem. By prioritizing visibility, accessibility, and credibility at the outset, Bapenda Susel has created a sustainable digital foundation for transforming public service delivery and fostering citizen engagement in regional governance.

2. Interaction between Citizen and Government

The second stage indicates a shift from one-way information dissemination to two-way interaction between citizens and government. At this level, Bapenda Susel Mobile acts as an interactive platform allowing citizens to participate through digital features such as help desks, online complaints, and automated notifications related to tax obligations.

Informant P.3 explained:

“The application includes a complaint feature, and there are staff members assigned to respond to citizen reports promptly during working hours.”

In addition, Informant P.4 noted:

“This application helps citizens easily find out their exact tax amount. All transactions and interactions can be done within the app.”

Table 2 summarizes the main dimensions of citizen-government interaction and their implications for public service performance.

Table 2. Digital Interaction Patterns between Citizens and Government via Bapenda Sulsel Mobile

Interaction Dimension	Available Features	Interview Excerpts	Implications for Public Service
Two-way communication	Complaint and feedback features with direct staff response	“Staff members are assigned to respond to citizen complaints promptly.” (P.3)	Improves responsiveness and public trust
Tax data transparency	Automatic notifications on tax values and due dates	“Citizens can easily check their tax amount directly through the app.” (P.4)	Strengthens accountability and awareness
Citizen participation	Log records of complaints and feedback for weekly evaluation	“We compile all citizen input weekly for internal evaluation.” (P.2)	Fosters participatory and reflective governance

Source: Field interviews (P.2–P.4) and application observation, 2024.

The results indicate that *Bapenda Sulsel Mobile* has transformed the nature of public service interaction from procedural to participatory. The introduction of interactive features allows citizens not only to obtain information but also to influence service quality through feedback loops. This two-way communication fosters trust and responsiveness key dimensions of digital citizenship in modern governance. Users’ ability to lodge complaints and monitor responses online strengthens procedural transparency and minimizes the asymmetry of information that typically exists in bureaucratic systems. These changes illustrate how digital tools can institutionalize accountability, where service users act as evaluators of performance rather than passive recipients.

Beyond improving responsiveness, this stage also reflects organizational adaptation within Bapenda Sulsel. Internal structures have been adjusted to ensure that staff respond promptly to digital interactions. Informant P.3 mentioned that specialized officers are assigned to monitor the help desk daily, signaling an internal cultural shift toward customer-oriented service. This mirrors the concept of *adaptive bureaucracy*, where responsiveness and efficiency coexist with administrative control. The presence of a dedicated digital response team highlights how technological innovation is accompanied by new managerial routines and evaluation mechanisms.

Moreover, the interaction system contributes to strengthening **civic trust** in public institutions. When users experience timely, transparent responses, their confidence in government reliability increases. According to (Yasir et al., 2020), digital trust is a key determinant in sustaining long-term e-government adoption, as it bridges the psychological gap between citizens and public authorities. In the case of *Bapenda Sulsel Mobile*, citizens perceive greater predictability and fairness in services because the entire interaction process from complaint submission to resolution is digitally traceable.

Finally, this interactive model represents a broader shift toward *participatory governance*, where citizens are recognized as active stakeholders in policy implementation. Digital interaction creates an inclusive space where feedback data are analyzed and used to refine operational policies, making public

administration more iterative and evidence-based. Therefore, the *Interaction between Citizen and Government* phase not only enhances communication but also cultivates a collaborative public management paradigm in which technology, trust, and transparency mutually reinforce each other.

3. Complete Transaction Over the Web

The third stage marks a more advanced level of maturity, where the entire service process is conducted online (end-to-end digital service). Through *Bapenda Sulsel Mobile*, citizens can check tax information, generate payment codes, and complete transactions through integrated payment channels without visiting the office.

Informant P.3 elaborated:

“Taxpayers only need to generate a payment code and can proceed through Bank Sulselbar, Mandiri, Gopay, LinkAja, or Indomaret. Everything is completed within one application.”

This digital transformation has significantly improved efficiency and convenience for taxpayers. Statistical evidence from 2021–2023 is presented below.

Table 3. Growth of Digital Tax Transactions through Bapenda Sulsel Mobile (2021–2023)

Year	Digital Transactions	In-person Visits	Digital Adoption Increase (%)	Interview Excerpts
2021	110,235	180,200	—	“Previously, most citizens visited the office, but now almost half use the app.” (P.2)
2022	164,870	121,340	+49.6%	“After the pandemic, digital transactions increased sharply because people found it easier.” (P.3)
2023	180,120	103,880	+60.4% (vs 2021)	“Now more than 60% of vehicle tax payments are digital.” (P.1)

Source: Bapenda Sulsel Internal Report, 2023; Field Interviews (P.1–P.3).

The data confirm a consistent upward trend in digital adoption and a marked decline in direct office visits. This shift illustrates a behavioral transformation among taxpayers who increasingly favor digital interactions due to their efficiency, accessibility, and reliability. The use of *Bapenda Sulsel Mobile* has shortened administrative chains that previously required face-to-face validation and manual verification. With the integration of multiple payment gateways, the application not only simplifies the transaction process but also minimizes bureaucratic errors and waiting times. In addition, this digital service has strengthened financial accountability since all payments are recorded automatically through electronic receipts and real-time reporting systems.

Beyond technical convenience, this stage also signifies a deeper **institutional transformation** within Bapenda Sulsel. Employees have adapted to a new workflow that prioritizes automation, data accuracy,

and service responsiveness. Informant P.2 noted that internal monitoring and auditing have become easier since all data are now traceable in digital logs. The institutional change aligns with (Tidd & Bessant, 2021) view of innovation as an organizational process combining technology, people, and management systems to create sustained value.

Moreover, this digital transaction model has had a positive social effect. It enhances taxpayer trust by ensuring transparency and reducing opportunities for informal practices. Citizens appreciate the predictability of payment procedures, while the government benefits from increased efficiency and more stable regional revenue streams. However, some technical barriers persist, including intermittent connectivity and occasional delays in data synchronization between payment aggregators and government servers. Informant P.1 highlighted that such issues are gradually being mitigated through system updates and partnerships with digital payment providers.

Overall, the *Complete Transaction Over the Web* stage demonstrates that technological innovation, when integrated with adaptive governance and citizen-oriented design, can significantly improve the delivery of public services. The case of *Bapenda Sulsel Mobile* exemplifies how a regional government can transition from manual administration to a responsive, digitally connected tax ecosystem that supports Indonesia’s broader goal of sustainable e-government transformation.

4. Integration of Services

The final stage, Integration of Services, represents the highest maturity level, emphasizing inter-agency system interoperability. In this stage, Bapenda Sulsel Mobile has established digital integration with the South Sulawesi Regional Police (Ditlantas) and PT Jasa Raharja, while ongoing collaboration continues with the Civil Registry Office (Dukcapil) and Pakinta (PBB) applications.

Informant P.1 remarked:

“We are developing system integration with the Pakinta application (land and building tax) and with the traffic police for digital SKKP, so citizens won’t need to visit Samsat anymore.”

The following table presents details of cross-agency integration efforts.

Table 4. Service Integration of Bapenda Sulsel Mobile with Related Institutions				
Partner Institution	Type of Integration	Interview Excerpts	Implementation Status	
South Sulawesi Regional Police	Vehicle data validation (license plate and STNK)	“We’re directly connected to traffic police data for online SKKP validation.” (P.1)	Active	
PT Jasa Raharja	Automatic insurance payment synchronization	“Insurance payments are automatically processed within the system.” (P.2)	Active	
Civil Registry (Dukcapil)	Taxpayer NIK synchronization	“NIK integration is still pending due to data protection regulations.”	In progress	

Pakinta (PBB) Application	Land building integration	and tax	(P.3)	Under development
			“We aim for full integration by 2025 to consolidate all local taxes.”	
			(P.1)	

Source: Field Interviews (P.1–P.3), Bapenda Sulsel system development reports, 2024.

The integration phase reflects a crucial transition from digital service availability to digital ecosystem interconnectivity. The current system links core public databases vehicle registration, insurance, and citizen identity to create a unified digital taxation platform. This development indicates a significant step toward *smart governance*, where data interoperability reduces redundancy, minimizes manual verification, and accelerates service delivery. Integration with the Regional Police ensures real-time validation of vehicle registration, while synchronization with PT Jasa Raharja allows automatic calculation of insurance premiums within the same transaction flow. These mechanisms exemplify how inter-agency collaboration improves both service quality and administrative accountability.

Furthermore, this integration embodies the principles of *whole-of-government* governance, aligning local e-government initiatives with Indonesia’s national digital transformation roadmap (*SPBE Nasional*). However, challenges remain concerning regulatory harmonization and data protection, particularly with the Civil Registry’s personal identification systems. The limited interoperability between national and regional databases still constrains full automation. To overcome these constraints, Bapenda Sulsel has initiated a digital working group with related agencies to design secure data exchange protocols and adopt a shared application programming interface (API) framework.

In a broader sense, the integration strategy also demonstrates a shift from service digitalization to institutional collaboration. It marks the evolution of Bapenda Sulsel from a single-agency innovation into a cross-sector digital governance model. The effort is not merely technological but organizational requiring joint decision-making, continuous staff training, and sustained leadership commitment. As suggested by (Pu et al., 2025), such networked governance enables resilience in public innovation by ensuring that each stakeholder contributes to and benefits from a collective digital infrastructure. Therefore, the *Integration of Services* phase represents not only a technical milestone but also a policy transformation—moving toward a collaborative, citizen-centered ecosystem that bridges regional autonomy with national interoperability goals.

4. Conclusion

This study analyzed the Bapenda Sulsel Mobile innovation as an e-government-based service implemented by the Regional Revenue Agency of South Sulawesi Province. The research aimed to explain and evaluate the level of success and maturity of this innovation within the framework of the e-Government Maturity Model by Alhomod & Shafi, 201).

The findings confirm that Bapenda Sulsel Mobile has reached an advanced stage of digital governance maturity, characterized by transparency, responsiveness, and strong citizen engagement. The success of the innovation is reflected not merely in its technological implementation but also in the institutional and cultural readiness of Bapenda Sulsel to adopt digital transformation. This demonstrates that e-government innovation at the regional level can effectively improve public service efficiency, reduce bureaucratic complexity, and strengthen trust between government and citizens.

In essence, the study concludes that the Bapenda Sulsel Mobile initiative serves as a representative model of regional digital governance that integrates technological innovation, organizational adaptation, and participatory public interaction. This combination has allowed the institution to

enhance public access to information, streamline administrative processes, and foster sustainable digital practices in local tax administration.

Suggestions

Future developments should focus on strengthening system interoperability and data integration across regional and national institutions to achieve a fully connected digital ecosystem. Continuous improvement in data security, employee digital competence, and citizen digital literacy will be essential for ensuring long-term sustainability. Further studies may also explore comparative analyses between provincial governments in Indonesia to identify best practices and contextual barriers in regional e-government implementation..

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