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Public Service Innovation Through Digitalization In The Regional Government Expenditure Efficiency Agenda In Indonesia

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Abstract

The expenditure efficiency agenda requires local governments to maintain public service delivery through more targeted resource utilization. The conceptual challenge lies in how digitalization generates process innovations relevant to these efficiency demands. This study aims to explain the relationship between expenditure efficiency, public service innovation, and digitalization; identify types of process updates in regional practices; and formulate supporting conditions for implementation. Utilizing a literature review methodology with a thematic narrative synthesis of 19 purposively selected sources—comprising five scientific publications and 14 official documents—the analysis compares concepts, categorizes service workflow data, and establishes inter-thematic relationships. Case illustrations from Banyuwangi, Surabaya, and Magelang City serve as secondary illustrations. The synthesis positions efficiency as a resource utilization orientation, innovation as the modernization of service delivery mechanisms, and digitalization as the instrument for process transformation. Regional practices showcase centralized service access with operator assistance, direct linking of public complaints to responsible units, and the integration of birth administration outputs. Their relevance to efficiency stems from opportunities to reduce file transfers, redundant work, and physical visits. Successful implementation requires procedural simplification, inter-authority coordination, staff readiness, data governance, and assisted access channels. The study concludes that digitalization constitutes service innovation when it redefines completion processes and operational relationships. Its relationship with efficiency is conceptual and conditional, with quantifiable savings requiring dedicated empirical investigation

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Keywords: Public Service Innovation; Digitalization; Expenditure Efficiency; Literature Review; Local Government.

INTRODUCTION

Local governments in Indonesia face twin demands: utilizing budgets efficiently while continuing to fulfill public service obligations. Presidential Instruction No. 1 of 2025 (Dictum 4, points 4–5) directs the reduction of non-measurable supporting expenditures and the concentration of budget allocations toward clear public service targets. Meanwhile, the obligation to establish and maintain public service standards remains legally mandated under Law No. 25 of 2009 (Articles 15, 20–21) (Republic of Indonesia, 2009, 2025). The central operational problem for administrators is determining how to improve internal workflows so that resource utilization directly connects to citizens' service resolution needs.

Financial management issues form the background of this efficiency mandate. The Ministry of Finance (2025, p. 33) recorded local government banking cash balances of IDR 86.85 trillion as of December 31, 2024. This aggregate figure must be interpreted alongside payment schedules and planned activities before judging fiscal optimality. Rather than serving as direct evidence of idle funds, its analytical relevance lies in highlighting the need to link public spending with tangible service benefits through process re-engineering.

Digitalization offers concrete mechanisms for altering how citizens apply for services and how administrators process them. In 2024, Indonesia's national Electronic-Based Government System (SPBE) index reached 3.12 out of 5.00, demonstrating foundational digital governance capacity (Ministry of PANRB, 2025, p. 25). Concurrently, BPS data indicated that 72.78% of the population aged five and older accessed the internet (Central Bureau of Statistics, 2025). While these statistics reflect readiness, actual service success must be evaluated through workflow efficiency.

Regional practices provide detailed views of service process updates. Banyuwangi Regency reported providing digital access to 43 civil registration documents via its Smart Kampung initiative, while Magelang City integrated its SI BULAN platform across 16 health facilities for birth administration (Banyuwangi Regency Government, 2023; Magelang City Government, 2024). These diverse implementations raise questions regarding which specific process stages are modernized, what administrative relationships are required, and how these changes translate into resource efficiency. Mergel et al. (2019) link public sector digital

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transformation with structural and procedural change, while Farhan (2023) categorizes process and administrative technologies within local government innovation typologies.

This study examines the conceptual relationship between expenditure efficiency, service innovation, and digitalization. Its primary contribution is detailing process renewal mechanisms and their supporting implementation conditions, using regional practices as secondary illustrations. The 2025 efficiency policy provides the contextual backdrop for optimizing resource usage.

This study addresses three central research questions:

1. How are expenditure efficiency, public service innovation, and digitalization positioned within a unified conceptual framework?
2. What forms of process updates are demonstrated in the digital practices of Banyuwangi, Surabaya, and Magelang City, and what is their relevance to efficiency?
3. What supporting conditions are required for digitalization to sustain service innovation within an efficiency agenda while maintaining service quality and public access?

THEORETICAL STUDY

Efficiency as a Resource Allocation Orientation

Efficiency in public administration extends far beyond mechanical cost-containment or raw budgetary contraction; it represents a fundamental strategic orientation governing how public resources are organized to maximize societal value. Dunn (2018) defines policy efficiency as the technical and allocative relationship between realized public outcomes and the input resources—comprising financial capital, human labor, physical assets, and institutional time—expended to achieve them. This conceptualization critically distinguishes genuine efficiency from arbitrary budget cuts. Arbitrary fiscal retrenchment often produces systemic underfunding, degrades operational throughput, and leads to service disruption—outcomes that fundamentally violate the principles of administrative efficiency.

In the operational sphere of public services, an efficiency orientation serves as a systematic analytical lens to evaluate workflow configurations, administrative bottlenecks, and capacity utilization. Rather than viewing efficiency solely through fiscal accounting, this perspective focuses on internal process optimization. It targets systemic operational friction, including redundant form-filling, fragmented inter-departmental file handoffs, duplicate data entries, and unnecessary physical visits required of citizens. By identifying and eliminating these

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procedural redundancies, public organizations optimize staff allocation and reduce unit transaction costs while maintaining—or enhancing—the quality, speed, and consistency of public service delivery in compliance with statutory service standards.

Public Service Innovation as Process Renewal

Public service innovation reframes organizational structures, procedural norms, and service delivery mechanisms to address complex public challenges. Farhan (2023) categorizes local government innovation into four major typologies: process technology adoption, social innovation, new service delivery models, and administrative reform. Within Indonesian governance, this typology aligns with Government Regulation No. 38 of 2017 (Article 6), which establishes procedural novelty, operational effectiveness, and tangible public benefit as baseline criteria for regional innovation initiatives (Republic of Indonesia, 2017).

Consequently, public sector innovation cannot be reduced to the simple acquisition of digital hardware or the deployment of software applications. Instead, technological adoption must be evaluated through the procedural re-engineering and structural modernization it enables. In this study, service process innovation is defined as the deliberate restructuring and modernization of application workflows, task allocation protocols, inter-agency information exchange, and administrative output delivery. Process innovation focuses on transforming the internal supply chain of public administration, shifting organizational routines from rigid, paper-based bureaucratic steps toward integrated, collaborative, and responsive service workflows.

Digitalization as an Enabler of Process Transformation

Understanding the role of technology in governance requires distinguishing between surface-level information digitization and deep digital transformation. Mergel et al. (2019) conceptualize digitization as the simple conversion of analog data into digital formats, whereas digital transformation entails the fundamental restructuring of organizational workflows, inter-institutional relationships, and public service delivery models. Within this framework, digitalization functions as a technological enabler that facilitates and operationalizes service process innovation.

The conceptual synergy among efficiency, innovation, and digitalization forms an integrated analytical framework:

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1. Efficiency Orientation: Provides the strategic objective by identifying optimal resource allocation, operational waste, and capacity bottlenecks.
2. Service Innovation: Provides the structural pathway by designing specific procedural updates, organizational realignments, and workflow modernizations.
3. Digitalization: Delivers the technological architecture—such as centralized service portals, automated workflow routing, and integrated databases—necessary to execute and sustain those procedural transformations.

Without procedural innovation and an efficiency orientation, digitalization risks automating legacy bureaucratic inefficiencies, merely substituting physical paperwork with digital friction. Conversely, when guided by efficiency and innovation, digitalization transforms administrative functions and optimizes resource allocation across public institutions.

Public Access and Administrative Burden

The digital modernization of public services introduces complex dynamics regarding public accessibility, equity, and citizen-state interactions. Herd et al. (2023) analyze these interactions through the theoretical lens of administrative burden, defined as the learning, compliance, and psychological costs that citizens encounter when seeking public benefits or fulfilling regulatory obligations. Learning costs involve acquiring information about eligibility and application procedures; compliance costs encompass gathering documentation and navigating administrative hurdles; and psychological costs reflect the stress, stigma, and uncertainty associated with administrative processes.

While digital service channels significantly reduce administrative overhead and processing costs for government agencies, they risk inadvertently shifting these burdens onto the public. For citizens lacking digital literacy, stable internet access, or appropriate hardware, fully digitalized channels increase learning and compliance burdens, potentially exacerbating social inequalities and disenfranchising vulnerable populations.

To counter this digital divide, equity mandates are legally grounded in Law No. 25 of 2009 concerning Public Services (Articles 4, 15, and 29), which obligates public service providers to uphold principles of non-discrimination, equality of access, and the provision of special assistance for vulnerable or marginalized groups (Republic of Indonesia, 2009). Therefore, a robust framework for digital service innovation must integrate assisted digital access mechanisms—such as village-level operator support, helpdesks, and hybrid service options—to ensure that

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technological modernization optimizes public resource efficiency without compromising universal access or shifting administrative burdens onto citizens.

RESEARCH METHODOLOGY

This study uses a conceptual literature review methodology utilizing thematic narrative synthesis (Snyder, 2019). The analytical corpus consists of 19 purposively selected sources: five peer-reviewed scientific publications (Dunn, 2018; Farhan, 2023; Herd et al., 2023; Mergel et al., 2019; Snyder, 2019) and 14 official documents (five legislative statutes, three statistical/performance reports, and six official regional publications).

Literature collection was conducted via academic databases and official government repositories using targeted search terms: public service innovation, service digitalization, expenditure efficiency, digital transformation, SPBE, Smart Kampung, WargaKu, and SI BULAN. The unit of analysis centers on conceptual arguments, statutory mandates, and documented process descriptions. Data synthesis followed a four-stage process:

1. Conceptual comparison of efficiency, innovation, and digitalization definitions.
2. Categorization of regional case information by publisher, year, service type, workflow, and evidence limitations.
3. Thematic matrix grouping covering access procedures, inter-agency coordination, and user support channels.
4. Synthesis of cross-case patterns to determine workflow relevance to resource efficiency.

RESULTS AND DISCUSSION

Conceptual Positioning of Efficiency, Innovation, and Digitalization

The synthesis for the first research question establishes distinct roles for the three core concepts, as summarized in Table 1.

Table 1. Conceptual Framework and Analytical Focus

Concept	Conceptual Position	Primary Analytical Focus
Expenditure Efficiency	Resource Utilization Orientation	Relevance of process changes to labor time, costs, and capacity utilization.

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Concept	Conceptual Position	Primary Analytical Focus
Service Innovation	Service Delivery Renewal	Procedural updates, task re-allocation, and output delivery modernization.
Digitalization	Process Transformation Enabler	Digital access channels, automated processing, and inter-agency connectivity.

Source: Synthesized from Dunn (2018), Mergel et al. (2019), and Farhan (2023).

Process Renewal in Regional Practices

An empirical analysis of local government initiatives in Indonesia reveals distinct mechanisms of process renewal, demonstrating how digital platforms re-engineer traditional administrative workflows to optimize resource utilization and service delivery. Rather than applying a monolithic model of digitalization, regional practices demonstrate targeted process transformations tailored to specific operational bottlenecks. The comparative analysis of three pioneering local governments—Banyuwangi Regency, Surabaya City, and Magelang City—illustrates the structural diversity of regional public service innovation:

1. **Smart Kampung (Banyuwangi Regency): Decentralized Access and Front-Line Mediation**
   Official documentation (May 12, 2023; Sept 1, 2025) records the digital consolidation of 43 civil registration services integrated into the *Smart Kampung* ecosystem, paired with village-level operator assistance (Banyuwangi Regency Government, 2023; Disdukcapil Banyuwangi, 2025). The core process renewal in Banyuwangi shifts the locus of service delivery from centralized regency offices to decentralized village nodes. By establishing unified digital access points mediated by front-line village staff, the initiative transforms the citizen-state interface. Strategically, this decentralized model mitigates the "last-mile" delivery challenge in rural governance. It reduces physical travel costs and time burdens for rural populations while streamlining verification workflows prior to central data processing, thereby minimizing procedural re-submissions and operational friction.
2. **WargaKu (Surabaya City): Direct Complaint Routing and Workflow Responsiveness**
   Official municipal reports (Dec 14, 2022; July 23, 2025) document the processing of 10,504 public complaints (with 9,795 successfully resolved) through the *WargaKu* platform,

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supported by continuous capacity-building for sub-district operators (Surabaya City Government, 2022, 2025). Process renewal in Surabaya occurs through the disintermediation of administrative reporting channels. Traditional complaint handling often suffered from multi-tiered bureaucratic handoffs, where public grievances were delayed or lost across intermediate administrative layers. *WargaKu* re-engineers this workflow by automatically routing citizen reports directly to designated sectoral units and technical field officers. Supported by real-time tracking and mandatory Service Level Agreements (SLAs), this direct routing mechanism minimizes administrative handoffs, eliminates communication redundancies, and enhances institutional responsiveness.

3. **SI BULAN (Magelang City): Inter-Institutional Integration and Administrative Bundling**
   Official municipal releases (Oct 8, 2024) detail the integration of the *SI BULAN* platform across 16 healthcare facilities, enabling the automatic issuing of four bundled legal identity documents (birth certificate, updated family card, child identity card, and BPJS health insurance enrollment) upon childbirth (Magelang City Government, 2024; Disdukcapil Magelang City, n.d.). The process renewal in Magelang City centers on life-event-based administrative bundling executed through inter-institutional data sharing. Traditionally, citizens were required to navigate four separate application processes across distinct municipal agencies and healthcare institutions. *SI BULAN* eliminates these fragmented transactions by triggering a unified data exchange protocol at the point of care. By consolidating multiple administrative outputs into a single digital transaction, the platform reduces redundant data entry, eliminates duplicate verification steps across agencies, and significantly decreases total administrative costs for both the municipality and service recipients.

Table 2. Regional Process Renewals and Conceptual Relevance to Efficiency

Case Illustration	Core Source Information	Process Renewal Type	Relevance to Efficiency
Smart Kampung *(Banyuwangi)*	43 digital services; village	Unified access & assisted submission.	Potential reduction in physical visits & re-submissions.

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Case Illustration	Core Source Information	Process Renewal Type	Relevance to Efficiency
	operator support.		
WargaKu *(Surabaya)*	10,504 complaints processed via direct routing.	Automated complaint routing to units.	Potential reduction in administrative handoffs.
SI BULAN *(Magelang)*	Bundled birth outputs via 16 health partners.	Multi-output administrative bundling.	Potential reduction in separate processing steps.

Source: Synthesized from regional case publications (2022–2025).

Supporting Conditions for Digital Service Innovation

Synthesizing foundational public administration literature with empirical regional case studies demonstrates that digital technology alone is insufficient to optimize public service delivery. The structural transformation of administrative workflows requires an ecosystem of institutional, technological, and human support. Consequently, operationalizing digital service innovation within an expenditure efficiency framework depends on five essential supporting conditions:

1. Procedural Simplification and Role Clarity

   Prior to software deployment, public organizations must undertake comprehensive business process re-engineering to eliminate systemic redundancies, duplicate approvals, and obsolete verification steps. Automating unexamined, legacy processes merely digitizes administrative inefficiency—substituting physical paperwork with digital friction. Procedural simplification must be paired with clear role allocation, defining explicit legal authorities, decision-making boundaries, and operational responsibilities across administrative tiers. Establishing unambiguous procedural

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frameworks ensures that digital workflows operate linearly, reducing processing delays and preventing jurisdictional overlap.

2. Staff Readiness and Inter-Agency Coordination
   The operational success of digital service delivery relies heavily on the technical competence of administrative staff and front-line operators. Continuous capacity-building programs are essential to equip personnel with the technical skills, data management competencies, and service-oriented mindsets necessary to navigate digital platforms. Furthermore, because modern public services frequently span multiple administrative divisions, robust inter-agency coordination mechanisms must be institutionalized. This requires establishing clear Service Level Agreements (SLAs) and cross-departmental handoff protocols to govern task routing, response times, and collaborative issue resolution.
3. Robust Data Governance Frameworks
   Digital service integration requires standardized data governance architectures to guarantee data integrity, interoperability, and security across public sector databases. Pursuant to Presidential Regulation No. 82 of 2023 on the Acceleration of Digital Transformation and National Digital Service Integration, local governments must institute strict role-based access controls, automated data-sharing protocols, and secure system integration standards (Republic of Indonesia, 2023). Effective data governance eliminates institutional data silos, minimizes manual re-entry errors, and safeguards sensitive public records, thereby ensuring compliance with national cybersecurity and privacy mandates.
4. Assisted Access Infrastructure and Equity Safeguards
   To prevent technological modernization from exacerbating social inequality, digital service designs must actively mitigate administrative burdens for digitally underserved populations. Grounded in administrative burden theory (Herd et al., 2023) and statutory equity mandates under Law No. 25 of 2009 (Republic of Indonesia, 2009), governments must maintain accessible, assisted service channels. Implementing front-line assistance such as village-level operator support, dedicated helpdesks, and hybrid offline-online submission options—substantially reduces learning and compliance costs for citizens lacking digital literacy or hardware access, thereby safeguarding universal service accessibility.

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5. Sustainable Resource Allocation and Lifecycle Budgeting
   Digital service innovations require continuous fiscal support to maintain system availability, security, and operational responsiveness. An efficiency orientation must not lead to fiscal underinvestment in core IT infrastructure. Public institutions must establish sustainable, multi-year budgetary allocations for software maintenance, infrastructure upgrades, system security audits, helpdesk staffing, and ongoing user support operations. Incorporating comprehensive lifecycle costs into capital planning ensures that digital service platforms remain resilient, secure, and adaptively aligned with evolving technological standards and public needs.

CONCLUSION

This study positions expenditure efficiency as a resource orientation, service innovation as procedural renewal, and digitalization as an enabling mechanism. Regional case illustrations demonstrate that digital innovation achieves efficiency when it simplifies application workflows, automates complaint routing, or bundles administrative outputs. Realizing these benefits requires procedural streamlining, staff readiness, inter-agency coordination, robust data governance, and assisted access infrastructure. Future empirical research should measure the exact cost savings and processing time reductions resulting from these digital transformations.

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