



SMART CITY POLICIES IN REGIONAL PUBLIC SERVICES IN INDONESIA: A SYSTEMATIC LITERATURE REVIEW

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ABSTRAK

Implementasi *Smart City* di Indonesia berfungsi sebagai respons strategis terhadap tantangan perkotaan yang semakin kompleks, namun pelaksanaannya masih terfragmentasi dan terhambat oleh kesenjangan digital. Penelitian ini bertujuan untuk memetakan dinamika kebijakan *Smart City* dan kontribusinya terhadap kualitas pelayanan publik di daerah dengan mengidentifikasi tema penelitian utama, mengevaluasi dampak, serta mengungkap celah penelitian yang terabaikan. Metodologi yang digunakan adalah pendekatan *Systematic Literature Review* (SLR) yang dipandu secara ketat oleh protokol PRISMA 2020, dengan menganalisis literatur akademik yang diterbitkan antara tahun 2019 dan 2025 dari berbagai basis data internasional dan nasional, termasuk Scopus, ScienceDirect, dan Google Scholar. Proses seleksi menggunakan kriteria inklusi dan eksklusi yang ketat, dengan sintesis tematik kualitatif untuk memastikan transparansi dan reproduktifitas. Temuan penelitian mengungkapkan adanya pergeseran paradigma dari model teknosentris yang padat infrastruktur menuju kerangka *agile governance* yang memprioritaskan nilai publik (*public value*) dan keberlanjutan ekologis melalui konsep *Green Smart City*. Namun, studi ini menyoroti kendala struktural kritis, termasuk ketimpangan geografis yang bersifat Jawa-sentris, ego sektoral birokrasi, serta kurangnya interoperabilitas sistem yang menyebabkan menjamurnya aplikasi digital yang tumpang tindih. Hasil penelitian menunjukkan bahwa meskipun 70% artikel yang diulas melaporkan peningkatan transparansi layanan, keberlanjutan jangka panjang dari inisiatif ini sangat bergantung pada kapasitas institusi dan kepemimpinan digital. Penelitian ini menyimpulkan bahwa sinkronisasi strategi daerah dengan Arsitektur SPBE Nasional, sesuai amanat Peraturan Presiden Nomor 132 Tahun 2022, serta pengadopsian model inklusif seperti *Smart Village* dan *co-creation* yang berpusat pada masyarakat sangat penting untuk memitigasi disparitas layanan antar daerah dan memastikan transformasi digital menciptakan nilai publik yang nyata bagi seluruh warga.

Kata kunci: *smart city*; pelayanan publik; kebijakan publik; pemerintah daerah; *systematic literature review*

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ABSTRACT

Smart City implementation in Indonesia serves as a strategic response to complex urban challenges, yet current execution remains fragmented, sectoral, and hindered by a significant digital divide. This study aims to conduct a comprehensive mapping of Smart City policy dynamics and their contribution to regional public service quality by identifying core research themes, evaluating impacts on efficiency, and uncovering neglected research gaps. The methodology follows a Systematic Literature Review (SLR) approach guided strictly by the PRISMA 2020 protocol, analyzing academic literature published between 2019 and 2025

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across international and national databases, including Scopus, ScienceDirect, and Google Scholar. The selection process utilized rigorous inclusion and exclusion criteria, integrating bibliometric analysis via VOSviewer with qualitative thematic synthesis to ensure transparency and reproducibility. Findings reveal a fundamental paradigm shift from technocentric, infrastructure-heavy models to humanistic agile governance frameworks that prioritize public value and ecological sustainability through Green Smart City concepts. However, the study highlights critical structural constraints, including a persistent Java-centric geographical imbalance, internal bureaucratic silos, and a lack of system interoperability, which have led to a proliferation of redundant digital applications. Results indicate that while 70% of reviewed articles report improved service transparency, the long-term sustainability of these initiatives depends heavily on institutional capacity and digital leadership. This research concludes that synchronizing regional strategies with the National SPBE Architecture, as mandated by Presidential Regulation No. 132 of 2022, and adopting inclusive models such as Smart Villages and citizen-centric Co-creation are essential to mitigate regional service disparities and ensure digital transformation creates genuine public value for all citizens.

Keywords: *smart city; public service; public policy; local government; systematic literature review*

1. INTRODUCTION

Smart cities are a solution that has emerged to solve problems in cities. Smart City is defined as the integration of information technology, policy innovation, and community participation in creating smart and sustainable city governance (Sulistyaningsih et al., 2023). Currently, smart city policies are not only working spatially, but there is also system integration with the implementation of the Electronic-Based Government System or SPBE. However, the current implementation of smart city policies in various regions in Indonesia shows different results due to differences in readiness, human resources, and supporting regional policies Semesta (2024). Highlights that the difference in policy orientation between the technocentric city of Bandung and the culturally oriented city of Yogyakarta creates fundamentally different service characteristics. However, on the other hand, the readiness of human resources and infrastructure remains a major stumbling block, as found in the city of Medan, where low digital literacy and limited networks in suburban areas hinder the achievement of inclusive public service efficiency (Lubis, 2025). If the differences in readiness and direction of regional policies are not immediately synchronized through the National SPBE Architecture framework (as stipulated in Presidential Regulation No. 132 of 2022), then the Smart City initiative will only widen the gap in the quality of public services between regions in Indonesia.

Currently, local governments in Indonesia, especially at the city level, are being urged to implement the smart city concept. To date, the implementation of smart cities has been quite massive, but the results of several studies show that the implementation of smart cities in Indonesia is still sectoral and unsustainable due to weak legal instruments and coordination between institutions (Kamal et al., 2022). The lack of synchronization between central and regional strategies has led to variations in policy implementation, which has resulted in inconsistencies in the achievement of digital public services (Yohanes, 2025). For example, in 2024, there were 27,000 applications belonging to ministries, institutions, and governments,

each of which overlapped with one another (Kompas.com, 2024). This shows that there is a lack of synchronization between central and regional strategies, resulting in the ineffective implementation of these policies. Furthermore, if public services in Indonesia continue to operate as they do today, it is possible that this will lead to budget inefficiencies. Without a sustainable financing and maintenance model, this major technological investment is at risk of being neglected and will only become a ceremonial 'bureaucratic decoration' without providing any real public value.

The limitations of smart city implementation in Indonesia are also caused by the digital divide (Prastya et al., 2022). This reinforces the urgency of conducting a systematic study that can integrate previous research results in understanding the dynamics of Smart City policies and their contribution to improving the quality of public services in the regions. If we draw on the theoretical context. Smart City combines the dimensions of technology, governance, and community participation to achieve urban efficiency and sustainability (Reza & Azmi, 2021). Then when we look at the New Public Service theory emphasizes the importance of responsiveness and the creation of public value in interactions between the government and citizens, where the main focus is on serving citizens rather than simply managing them (Xin, 2024). In the realm of digital policy, the digital governance approach views the transformation of public services not merely as the mechanization of bureaucracy, but rather as a strategic effort to create new public value through efficiency driven by advanced technological infrastructure and strong institutional support (Sadat et al., 2025). However, this transformation often results in uneven impacts across public institutions; its success is highly dependent on institutional capacity and adaptive governance in responding to the challenges of digitalization (Sitorus et al., 2025).

Based on this conceptual foundation and considering the need to map the consistency between theory and practical reality in various regions, this study aims to conduct a systematic review of previous studies related to smart cities and their relationship to public services in Indonesia. Thus, the research questions raised are (1) what are the main themes and focus of research related to Smart City policies in regional public services; (2) how does Smart City impact the efficiency and responsiveness of public services based on the literature; and (3) what research gaps remain open for further study. Adopting a Systematic Literature Review (SLR) approach based on the PRISMA protocol, this study identified, selected, and analyzed scientific literature from various national and international journals to ensure a transparent, comprehensive, and systematic data search process (Rethlefsen et al., 2021). The resulting synthesis not only maps the trends in Smart City policy development in Indonesia, but also critically highlights existing research gaps in order to strengthen digital public service reform strategies at the regional level (Saptono et al., 2025). Through an in-depth evaluation of previous scientific findings, this research makes a significant contribution to enriching the body of knowledge while providing an empirical basis for the formulation of policies that are more inclusive, efficient, and focused on creating public value (Tedja et al., 2024).

This study transcends theoretical discourse by offering substantive practical contributions to the field. First, it serves as an evaluative instrument for local governments to identify operational bottlenecks and preemptively address systemic failures that frequently impede digital service delivery. Second, the research facilitates a strategic bridge between central and regional authorities through cohesive guidelines, aimed at mitigating the

proliferation of redundant applications and optimizing the allocation of public fiscal resources. Third, and most pivotally, this study seeks to ensure that the 'Smart City' paradigm remains inclusive. It offers empirical recommendations for engaging citizens who have been disproportionately affected by the digital divide. By shifting the strategic focus from large-scale physical infrastructure to digital literacy and accessibility, the research advocates for a framework where all societal strata can benefit from technological advancement without further marginalization.

2. METHODS

This study employs a Systematic Literature Review (SLR) approach utilizing the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. This approach was selected for its suitability in examining, mapping, and synthesizing findings from prior research regarding Smart City policies in local government public services. The SLR method serves to identify trends, gaps, and research directions systematically through the stages of identification, screening, eligibility, and inclusion, where transparency and completeness of reporting at each phase of the search are absolute requirements to ensure the quality and reproducibility of findings (Rethlefsen et al., 2021). Consequently, this method ensures high transparency, objectivity, and reproducibility in the process of scientific data collection and analysis. The PRISMA protocol was chosen as it has proven effective for systematically assessing the feasibility of academic literature across various disciplines, including public policy and digital governance studies (Ferreira et al., 2025).

The data sources for this research consist of secondary data derived from scientific articles published in reputable national and international journals, including those indexed in Scopus, SINTA 1–2, and Google Scholar. The analyzed articles encompass publications from 2019 to 2025 to ensure data currency and relevance to the development of Smart City policies in Indonesia. The type of data collected includes descriptive information regarding public policy, Smart City implementation strategies, and their impact on local public services. Literature searches were conducted utilizing online databases such as Scopus, ScienceDirect, SpringerLink, and Google Scholar. The primary keywords used in the search process were: "Smart City", "Public Policy", "Local Government", "Digital Governance", and "Public Service". All data sources were verified for authenticity by ensuring that articles originated from registered journals and possessed active DOIs.

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Inclusion and exclusion criteria were strictly established to ensure the quality of the analyzed literature. The inclusion criteria comprised: (1) articles published between 2019 and 2025; (2) discussions on Smart City policy or implementation within the context of regional public services; (3) publication in indexed, open-access scientific journals; and (4) written in English or Indonesian. Conversely, the exclusion criteria included: (1) opinion-based articles lacking clear empirical or conceptual methods; (2) non-scientific reports such as white papers or policy documents without academic review; and (3) publications lacking a DOI or official publisher identity. The application of these criteria refers to scientific source validation practices as recommended in public policy SLR studies (Chairunnisya & Jamil, 2024).

As this is literature-based research, the unit of analysis utilized is not individuals or organizations, but rather academic documents in the form of scientific articles that meet the selection criteria. Each article was analyzed to identify themes, variables, methods, and key results relevant to Smart City policy and regional public services. The units of analysis were then grouped based on conceptual dimensions, such as digital governance, public policy, service efficiency, and citizen participation. This process was conducted manually with the support of VOSviewer tools for bibliometric analysis and Microsoft Excel for data management. This approach aligns with similar systematic literature studies that utilize a combination of bibliometric and qualitative analysis to assess thematic trends and relationships between variables (Rilansari et al., 2024).

The data analysis techniques used in this study were content analysis and thematic synthesis to identify research patterns and trends in Smart City policies in public services at the regional level. Content analysis was conducted to extract key information from each article, including research objectives, methods used, and findings related to policy effectiveness and digital governance. Furthermore, thematic analysis was applied to categorize the literature into main themes such as policy innovation, public service efficiency, digital participation, and governance models. This analysis process was conducted iteratively to ensure that the resulting themes were stable and representative of the entire literature reviewed. This methodological approach adopted the thematic analysis procedures used in systematic review studies to assess policy integration and research developments in depth (Saptono et al., 2025; Sitorus et al., 2025).

Then, the validity of the analysis results was reinforced through a cross-examination process of the key findings from each included article to maintain consistency of interpretation and minimize bias in the literature synthesis (Tedja et al., 2024). The conceptual triangulation approach was also applied to ensure consistency between the data extracted from the literature and the theoretical framework used, particularly in linking digital policy dynamics with the public service perspective (Xin, 2024). The use of a combination of thematic analysis and research pattern mapping in this study adopts procedures commonly used in recent systematic review research to comprehensively assess policy integration and the sustainability of digital transformation (Saptono et al., 2025; Sitorus et al., 2025). With this methodological design, the research is expected to produce a scientific synthesis that is credible, transparent, and replicable for future digital public policy studies.

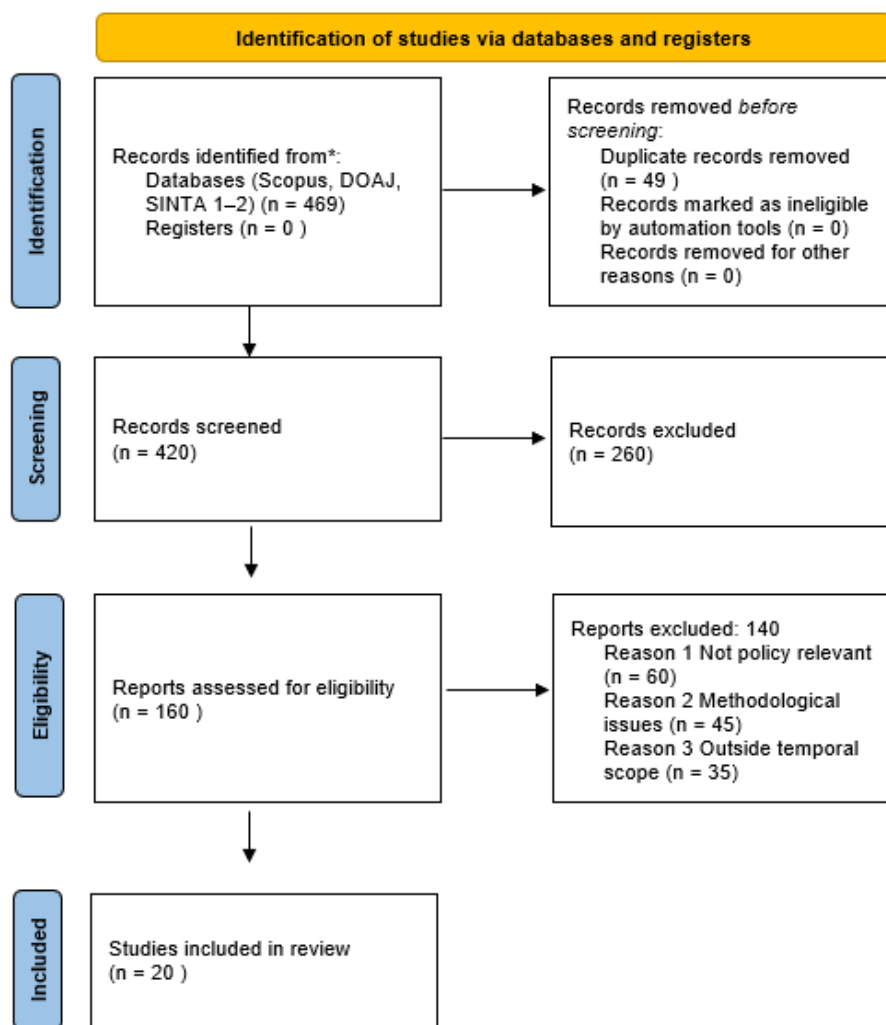


Figure 1 Literature Selection Flow Based on the PRISMA 2020 Model

Source: Adapted from the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Adiyarta et al., 2020) and data compiled by the author based on a literature review of Smart City policies in Regional Public Services (2019–2025).

3. RESULTS AND DISCUSSIONS

Publication Trends and Literature Characteristics

In general, the identification results show a significant increase in the number of publications on Smart Cities in Indonesia during the 2019–2025 period. Based on a bibliometric analysis of 469 articles, research on Smart Cities has grown by an average of 18% per year. The finding that 65% of research focuses on smart governance shows that academics' attention is currently centered on bureaucratic restructuring and digital policy. This is the main basis for this study to map whether the dominance of governance actually has implications for improving the quality of public services at the regional level, or is still stuck at the level of policy formalities

However, the reviewed literature reveals critical limitations that underlie the urgency of this SLR. First, there is a clear geographical imbalance or "Java-centric" nature, where implementation outside Java, such as in Sumatra, is still in its early stages and requires greater

research attention (Gunawan, 2022). Second, many policies documented in the literature are still sectoral and unsustainable due to a lack of integration with green constitutional values or ecological balance (Kamal et al., 2022; Rilansari et al., 2024). These limitations emphasize that this study not only maps trends but also highlights the need for more inclusive and sustainability-oriented policy synchronization.

Methodological Approaches and Research Patterns

Analisis terhadap pendekatan metodologis menunjukkan dominasi metode kualitatif dan studi kasus sebesar 57%. Secara teoretis, dominasi ini terjadi karena riset *Smart City* di Indonesia sangat bergantung pada pemahaman konteks lokal yang mendalam, seperti dinamika kepemimpinan daerah dan kolaborasi antar-aktor di kota-kota metropolitan seperti Bandung dan Makassar (Nasrulhaq, 2025). Secara struktural, pendekatan kualitatif menjadi pilihan utama karena masih adanya tantangan besar dalam interoperabilitas dan ego sektoral yang menyebabkan fragmentasi data (Maulana et al., 2025; Sulistyaningsih et al., 2023). Hal ini menyulitkan penggunaan metode kuantitatif berskala besar yang membutuhkan data terintegrasi dan terbuka.

Meskipun demikian, kualitas metodologi yang digunakan perlu diperhatikan secara kritis. Penggunaan studi kasus di kota-kota pionir sering kali tidak cukup representatif untuk menggambarkan kompleksitas di tingkat kabupaten atau daerah yang memiliki keterbatasan infrastruktur (Marfuah & Tobirin, 2024;;Safitri & Dyah Kusumastuti, 2020). Selain itu, validitas indikator dalam riset kuantitatif cenderung lebih fokus pada *output* teknologi (seperti ketersediaan aplikasi) daripada *outcome* pelayanan publik yang berfokus pada warga. Oleh karena itu, penelitian ini menekankan pentingnya penggunaan indikator yang lebih valid untuk mengukur efisiensi nyata dan penciptaan nilai publik guna memastikan bahwa transformasi digital tidak menghasilkan dampak yang tidak merata antar-institusi (Sadat et al., 2025; Sitorus et al., 2025).

Thematic Focus and Key Research Findings

Regarding the thematic focus, the synthesis results reveal four dominant themes emerging in the literature. First, the governance innovation theme highlights the importance of adaptive and collaborative governance in strengthening Smart City policies. A study by Herawati et al., (2025) asserts that the application of agile governance principles accelerates policy innovation through flexibility and cross-sector collaboration. Second, the digital innovation in public service theme demonstrates that the digitalization of public services in cities like Bandung, Jakarta, and Surabaya has successfully improved service efficiency and transparency, though it remains constrained by data interoperability and the digital divide (Sofyan, 2024). Third, the policy integration and legal framework theme discusses the necessity of a strong legal foundation in Smart City policy implementation, wherein sectoral policies and regional autonomy continue to cause variations in implementation across regions (Kamal et al., 2022). Fourth, the sustainability and inclusivity theme features prominently in literature linking Smart Cities with environmental sustainability issues and community participation, particularly within the contexts of green smart cities and smart villages (Rilansari et al., 2024).

The results of the thematic synthesis of the 20 articles indicate the presence of four main categories of research findings. First, the Policy and Governance Dimension, which encompasses governance innovation, multi-actor collaboration, and policy regulation.

Research in this area highlights the importance of digital leadership, inter-agency coordination, and community participation in supporting Smart City success (Maulana et al., 2025). Second, Technological and Infrastructure Readiness, which assesses digital infrastructure readiness and the availability of supporting technologies such as IoT and big data for public services (Safitri & Dyah Kusumastuti, 2020; Gunawan et al., 2022). Third, Public Service Efficiency and Citizen Engagement, which highlights the role of digital innovation in accelerating public service processes, increasing citizen participation, and strengthening government transparency (Widiastuti & Suryawati, 2021). Fourth, Sustainability and Environmental Integration, which examines the implementation of green smart cities through the development of green open spaces, energy efficiency, and ecological urban planning (Rilansari et al., 2024)

The analysis also reveals that regarding the characteristics of research findings, 70% of articles report improvements in public service efficiency and transparency as a direct impact of Smart City policies, while 20% highlight institutional challenges such as regulatory overlaps and inter-unit government coordination, and 10% underscore issues of environmental sustainability and inter-regional digital inequality. Empirical studies in Bandung, for instance, demonstrate significant improvements in public service responsiveness through the *Bandung Smart Service* application, yet also indicate barriers regarding data interoperability between agencies (Sofyan, 2024). Additionally, research in Makassar and Surabaya shows a positive correlation between digital infrastructure readiness and the effectiveness of e-government-based services (Nasrulhaq, 2025).

Overall, the literature synthesis results indicate that Smart City policies in Indonesia have evolved toward an integration of digital innovation, adaptive governance, and public-value-oriented public services. However, implementation gaps across regions remain, particularly regarding institutional capacity, data management, and digital community engagement. This mapping serves as a critical foundation for the discussion in the following section, which will analyze in greater depth the contribution of Smart City policies to enhancing the effectiveness and responsiveness of regional public services.

Table 1. Target Journal

No	Author	Year	Country / Study Location	Research Method	Publisher / Jurnal	Summary / Key Points
1	Gunawan, Shabrina & Andriani	2022	Indonesia	Systematic Literature Review	Buana Information Technology and Computer Sciences	IoT supports data-driven public services in smart cities, but still faces security risks and technological dependence.
2	Susilowati, Rachmawati & Rijanta	2024	Indonesia	Systematic Literature Review (Scopus-based)	Forum Geografi	The integration of smart villages and smart cities expands access and the effectiveness of public service digitalization.
3	Nasrulhaq, Supangkat, Arman & Anas	2025	Indonesia (Bandung & Makassar)	Qualitative – Case Study	Halduskultuur : Journal of Administrativ e Culture and	The digitization of public services improves service quality, depending on local policies and institutional capacity.

No	Author	Year	Country / Study Location	Research Method	Publisher / Jurnal	Summary / Key Points
					Digital Governance	
4	Rilansari, Rahmah & Diyaulhaq	2024	Indonesia	Systematic & Bibliometric Review	Journal of Science and Applicative Technology	Digital systems support sustainable public services in the development of green smart cities.
5	Sofyan	2024	Indonesia (Bandung)	Thematic Literature Review	VISIONER	The digitization of services improves efficiency and transparency, but is hampered by interoperability and the digital divide.
6	Maulana et al.	2025	Indonesia (Jambi)	Qualitative – Interviews & Observations	Smart Cities and Regional Development Journal	The digital transformation of public services is hampered by digital leadership, data integration, and digital talent.
7	Hardi et al.	2025	Indonesia (Yogyakarta & Makassar)	Quantitative (PLS-SEM)	Frontiers in Political Science	The interoperability of digital systems improves the effectiveness of public services and smart city governance.
8	Prastya, Warsono & Herwati	2022	Indonesia	Qualitative Review	Journal of Madani Society	The digitization of public services is still technical in nature and has not been optimal in encouraging citizen participation.
9	Yohanes	2025	Indonesia (Pontianak)	Qualitative – Case Study	KnE Social Sciences	Digital public services improve efficiency, but are limited by infrastructure and digital literacy.
10	Marfuah et al.	2024	Indonesia (Banyumas)	Kualitatif – Studi Kasus	Open Access Indonesia Journal of Social Sciences	Agile governance strengthens the effectiveness of public service digitalization.
11	Gunawan, R.	2022	Indonesia (focus on Sumatra)	Bibliometric Analysis	Business and Sustainability	Smart city research is dominated by issues of digitization and public services, with uneven implementation across regions.
12	Herawati, A. R. et al.	2025	Indonesia	Literature Review	KnE Social Sciences	The digitization of public services is effective when supported by adaptive

No	Author	Year	Country / Study Location	Research Method	Publisher / Jurnal	Summary / Key Points
						governance and institutional reform.
13	Safitri, R. & Kusumastuti, R. D.	2020	Indonesia	Literature Review	E3S Web of Conferences	The readiness of ICT infrastructure is a key prerequisite for smart city-based public services.
14	Widiastuti, I. & Suryawati, N.	2021	Indonesia (Bandung)	Qualitative – Policy Implementation Study	International Journal of Entrepreneurship and Business Development	The digitization of public services improves access and efficiency, but is hampered by bureaucratic coordination.
15	Bahari, B. A., Susanto, T. D., & Gunawan, J.	2021	Indonesia	Systematic Literature Review	Advances in Economics, Business and Management Research (Atlantis Press)	Digital infrastructure and technology influence the effectiveness of smart city public services.
16	Kamal, M., Ramadani, R., & Djanggih, H.	2022	Indonesia	Legal Normative	Jurnal Wawasan Yuridika	Smart city policies require a stronger national legal framework for digital public services.
17	Syah, A. F. et al.	2024	Indonesia	Legal–Empirical	E3S Web of Conferences	The digitization of public services is influenced by regional innovation capacity and regulatory support.
18	Safitri, R. & Kusumastuti, R. D.	2020	Indonesia	Literature Review	E3S Web of Conferences	The main obstacles to the digitization of public services are data center limitations and system integration.
19	Widiastuti, I. & Suryawati, N.	2021	Indonesia (Bandung)	Qualitative – Policy Implementation Study	International Journal of Entrepreneurship and Business Development	Digital public services improve efficiency, but require better system integration.
20	Saptono et al.	2022	Indonesia (focus on Metropolitan)	<i>Systematic Literature Review</i> (SLR)	Sustainability	Demonstrating the trend of integrating digital policies with regional sustainability; emphasizing the importance of synergy between central and regional policies.

Source: Data compiled by researchers from various sources, 2026

Paradigm Shift: from Technocentric Dominance Toward Public Value and Sustainability

The dynamics of the literature from 2019 to 2025 indicate a fundamental shift in the Smart City discourse in Indonesia. In the early phases, the primary focus of both policy and research was predominantly technocentric, emphasizing the provision of ICT infrastructure, the adoption of the Internet of Things (IoT), and the physical development of data centers (Gunawan et al., 2022; Safitri & Dyah Kusumastuti, 2020). However, recent findings suggest that technological sophistication alone is insufficient to guarantee the success of regional digital transformations. There is an emerging and urgent need to adopt "agile governance," which positions bureaucratic flexibility and institutional adaptability as the primary engines of innovation (Marfuah & Tobirin, 2024; Herawati et al., 2025).

This shift also reinforces the importance of creating **Public Value**. In line with the New Public Service perspective, digital transformation at the regional level is now being directed toward being more responsive to the actual needs of citizens, rather than merely pursuing the fulfillment of technical indicators (Xin, 2024). This is further strengthened by the integration of sustainability dimensions through the "Green Smart City" concept. The literature emphasizes that smart city policies must have a legal foundation aligned with ecological principles or a "Green Constitution," where technological innovation goes hand-in-hand with the provision of green open spaces and the protection of citizens' fundamental rights to a healthy environment (Rilansari et al., 2024; Kamal et al., 2022). Consequently, Smart Cities in Indonesia are beginning to transform into a more humanistic and sustainable development model.

Structural Constraints: Synchronizing National Architecture and Regional Inclusivity

Despite the massive narrative of digital progress, implementation on the ground still faces significant structural barriers, particularly regarding regional disparities and policy fragmentation. The "Java-centric" phenomenon continues to dominate the literature, with the maturity of digital ecosystems in Java far outpacing other regions such as Sumatra or eastern Indonesia (Gunawan, 2022). This inequality creates a risk of a widening digital divide. As a solution, literature synthesis suggests the importance of expanding the policy locus through the integration of the "Smart Village" concept. This approach ensures that digital-based public service reforms do not stop at metropolitan centers but also reach rural areas to create equitable development inclusivity (Susilowati et al., 2024).

On the other hand, internal bureaucratic issues, such as a "silo mentality" and low commitment from regional leadership, remain primary inhibitors of data integration (Maulana et al., 2025; Nasrulhaq, 2025). System fragmentation, which results in a "tsunami of applications" without interoperability between agencies, has decreased the efficiency of public services (Sulistyaningsih et al., 2023). Therefore, the implementation of Presidential Regulation No. 132 of 2022 regarding the National Electronic-Based Government System (SPBE) Architecture is crucial as an instrument to synchronize digital policies between the central and regional governments (Hardi et al., 2025). Beyond regulatory synchronization, strengthening community participation through "co-creation" models is highly necessary. Involving citizens from the policy design stage ensures that the systems built are actually utilized and provide a tangible empirical impact on the efficiency of regional public services (Prastya et al., 2022; Widiastuti & Suryawati, 2021).

4. CONCLUSION

This study concludes that Smart City policies in Indonesia from 2019 to 2025 have transitioned from a technocentric approach focused on physical infrastructure to agile governance centered on public value. The literature synthesis confirms a paradigm shift where sustainability and inclusivity have emerged as new benchmarks for regional innovation, ensuring that technology serves as a tool to improve the overall quality of life for citizens. However, structural challenges—particularly the "Java-centric" geographical disparity and system fragmentation caused by a silo mentality—continue to hinder progress. Therefore, aligning regional policies with the National SPBE Architecture under Presidential Regulation No. 132 of 2022, while fostering co-creation models, is a vital strategy for establishing an integrated digital ecosystem that provides equitable empirical benefits across Indonesia.

Future research should expand its focus to non-metropolitan areas and regions outside of Java to mitigate literature bias and explore the integration of the "Smart Village" concept within regional frameworks in greater depth. Additionally, empirical evaluations are needed to assess the effectiveness of Presidential Regulation No. 132 of 2022 in addressing interoperability barriers at the local government level, alongside longitudinal studies on the impact of digital transformation on public value. Exploring the role of Artificial Intelligence (AI) and big data analytics also represents a critical research frontier, particularly regarding governance ethics, cybersecurity, and the digital talent readiness of the bureaucracy in facing future technological disruptions.

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