

The Impact of Digitalization on Public Service Quality in Indonesia: A Systematic Literature Review

Resa Vio Vani¹, Ainun Mardziyah²
{resaviovani@mail.ugm.ac.id¹}

Universitas Gadjah Mada, Bulaksumur, Sleman Regency, Special Region of Yogyakarta^{1,2}

Abstract. *Digitalization has become a key driver of bureaucratic transformation in Indonesia, aiming to improve the quality of public services through greater efficiency, transparency, and responsiveness. The government has launched various e-government initiatives to enhance public service delivery, but the actual impact of these digital reforms on service quality remains mixed and debated. This study aims to systematically review the impact of digitalization on public service quality in Indonesia by synthesizing relevant scientific evidence. This research uses a Systematic Literature Review (SLR) method following the PRISMA guidelines, including the stages of identification, screening, eligibility, and synthesis. Data was collected exclusively from the Scopus database, focusing on peer-reviewed articles published between 2015 and 2025 containing the keywords "digital public services," "e-government," "service quality," and "Indonesia." The findings reveal that digitalization has a positive impact on key dimensions of service quality, particularly efficiency, transparency, and accessibility. However, persistent challenges such as low digital literacy among civil servants and citizens, limited system integration, and uneven infrastructure development continue to hamper the achievement of optimal results. Overall, this review highlights the research trend shifting from technical efficiency to more user-centric and value-based public service models. This study contributes to theoretical and policy discussions on strengthening Indonesia's digital transformation agenda to ensure inclusive and sustainable public service delivery.*

Keywords: *Digitalization; Public Services; Service Quality; E-Government; Systematic Literature Review.*

INTRODUCTION

Indonesia, as the world's fourth most populous country and a vast archipelagic nation, faces unique challenges and opportunities in digitizing its public services. The government's push for digital transformation, accelerated by the COVID-19 pandemic, has yielded significant progress across sectors such as religious services, population administration, health, and education. However, the benefits of digitalization have not been evenly distributed, with persistent gaps in infrastructure, digital literacy, and regulatory integration, particularly in rural and remote areas. This report summarizes empirical findings and meta-analytical insights to examine how digitalization impacts the quality of public services in Indonesia, focusing on accessibility, efficiency, transparency, and citizen satisfaction, while highlighting key challenges and best practices for sustainable digital transformation (Rohayati & Abdillah, 2024; Setyawan et al., 2025a; Solekan et al., 2025a).

Digitalization has become a key driver of bureaucratic transformation in Indonesia, with the goal of improving the quality of public services through greater efficiency, transparency, and responsiveness. The Indonesian government has launched various e-government initiatives to accelerate public service reform, such as the Electronic-Based Government System (SPBE), electronic procurement services (LPSE), the village financial system (Siskeudes), and smart city applications in various regions. These efforts demonstrate the government's commitment to providing more open and community-oriented governance. However, the actual impact of these digital reforms on the quality of public services remains mixed and debated among academics and practitioners.

The relationship between digitalization and the quality of public services in Indonesia can be conceptualized in four main dimensions:

1. Accessibility, the extent to which digital platforms enable broader and more equitable access to public services.
2. Efficiency, the extent to which digitalization simplifies processes, reduces bureaucracy, and accelerates service delivery.

3. Transparency, the role of digital tools and open data in enhancing government accountability and public oversight.
4. Citizen Satisfaction, the impact of digitalization on user experience, trust, and engagement with public services.

These dimensions are mediated by contextual factors such as infrastructure, digital literacy, regulatory frameworks, and organizational culture (Admar et al., 2024; Fikri et al., 2024; Kaynanda & Zarlis, 2024). While digitalization has expanded public access to public services, structural challenges remain significant. Various studies have noted a digital divide between regions, low digital literacy among officials and the public, weak system integration between agencies, and uneven infrastructure (Murdhani, 2025; Son et al., 2020). Consequently, the implementation of digital systems often fails to fully improve service effectiveness. Most digital innovations still focus on technical aspects and have not fully addressed dimensions of public value such as trust, participation, and inclusiveness. This phenomenon raises a fundamental question: how does digitalization actually affect the quality of public services in Indonesia?

Several previous studies provide a partial picture of this relationship. (Fang et al., 2023; Hanisch et al., 2023; Kaur et al., 2025) found that information technology governance (IT governance) plays a crucial role as an intermediary variable linking the implementation of digitalization with improvements in the quality, accountability, and transparency of local government services. Romero et al showed that e-government quality significantly influences public trust, which in turn encourages citizen participation in digital government (Tejedo-Romero et al., 2022). (Pham et al., 2023) findings reinforce that the quality of systems, information, and services is a key determinant of user satisfaction and loyalty to digital government services. On the other hand, (Ngcaweni, 2025) emphasize that the success of e-procurement systems and G2B services is highly dependent on trust and perceived transparency.

However, most of these studies are sector-focused on a single service, agency, or region and therefore do not provide a comprehensive picture of the mechanisms by which digitalization improves the quality of public services nationally. This research aims to fill this gap through a systematic literature review (SLR) to synthesize relevant empirical evidence. This approach follows the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines, encompassing the stages of data identification, screening, eligibility determination, and synthesis. Data sources are drawn exclusively from the Scopus database, focusing on reputable scientific articles published between 2015 and 2025, using the keywords "digital public services," "e-government," "service quality," and "Indonesia."

Theoretically, this research is based on three main frameworks. First, the Information Systems Success Model (DeLone & McLean, 2003) explains how system quality, information quality, and service quality influence user satisfaction and overall system success. Second, the SERVQUAL model (Parasuraman et al., 1988), emphasizes the dimensions of reliability, responsiveness, assurance, empathy, and tangibles in the perception of public service quality. Third, the Digital Governance Theory (Bannister & Connolly, 2014), which asserts that technology will only improve the quality of government if accompanied by strong governance, accountability, and participation. These three theories are used to explain how digitalization simultaneously impacts the technical, institutional, and social aspects of public service delivery in Indonesia.

Based on a synthesis of various empirical studies, while digitalization continues to advance in several sectors and regions, persistent digital divides and institutional fragmentation limit the equity and effectiveness of digital public services. Government initiatives are promising but require stronger integration and ongoing capacity development (Nurman et al., 2025; Putri et al., 2020; Solekan et al., 2025b). This condition indicates that the success of digital transformation depends not only on technological progress but also on institutional readiness and the level of community participation.

RESEARCH METHOD

This study uses a systematic literature review (SLR) approach to synthesize existing empirical evidence regarding the relationship between digitalization and the quality of public services in Indonesia. The chosen methodology for this study is a Systematic Literature Review (SLR) guided

by the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework. A systematic literature review is particularly appropriate for emerging or “hot” topics in academic research, such as cybersecurity compliance behaviors, due to its structured approach to identifying, evaluating, and synthesizing relevant studies. This methodology is crucial in rapidly evolving fields because it allows researchers to consolidate fragmented findings and identify gaps, which is especially relevant for topics that have the potential to change paradigms within their domain. The SLR approach ensures comprehensive coverage of the literature, mitigates biases, and enhances the reliability of conclusions drawn from the data (Saura, 2021).

This approach is particularly beneficial when addressing complex topics with multidisciplinary implications, such as cybersecurity, where research findings need to be critically assessed and synthesized across various domains, including psychology, technology, and organizational behavior. The literature search was conducted using the Scopus database, which was selected due to its comprehensive coverage of high-quality, peer-reviewed journals in the fields of social sciences, information systems, management, and governance. The Boolean search string used was: (digitali OR e-government OR e-governance OR "smart city" OR "electronic government" OR "digital transformation") AND ("public service quality" OR "service quality" OR "citizen satisfaction" OR "public management" OR "public administration") AND (Indonesia OR Indonesian)*

The search was limited to publications from 2015 to 2025 to capture the most recent developments following Indonesia's national Electronic-Based Government System (SPBE) initiative launched in 2018. The search was performed in August 2025. The following inclusion criteria were applied:

1. Document type: Only peer-reviewed journal articles.
2. Publication stage: Final or published articles (except "in press").
3. Language: English.
4. Country context: Research conducted in, or directly related to, Indonesia.
5. Focus: Studies examining the impact of digitalization, e-government, or smart city initiatives on public service quality, citizen satisfaction, trust, accountability, or transparency.
6. Timeframe: 2015–2025.

Exclusion criteria included:

1. Non-empirical papers (conceptual essays, commentaries).
2. Conference proceedings, book chapters, and dissertations.
3. Studies unrelated to the public sector context (e.g., private sector digitalization or fintech).
4. Articles focusing solely on technical aspects of IT without implications for governance or service quality.

The initial search yielded 133 documents. After applying the timeframe filter (2015–2025), 128 papers remained. Filtering by document type (journal article) yielded 78 results, followed by 75 results after limiting to "final" publications, and 74 results after limiting to English-language studies. Filtering for abstract and keyword relevance reduced the number to 32 potentially relevant papers. After full-text reading and evaluation against the inclusion criteria, 10 empirical studies were selected for in-depth analysis.

RESULT AND ANALYSIS

The literature search and screening process was conducted regularly following the PRISMA 2020 guidelines to ensure transparency and replicability of the study results. Table [1] summarizes all stages of the selection process, from the initial search in the Scopus database to the final selection of articles that met the inclusion criteria. Each screening stage was conducted using strict exclusion criteria to ensure that only studies relevant to the topic of digitalization and the quality of public services in Indonesia were included in the final analysis.

Table 1. Summary table of search and filtering PRISMA

Phase	Number of Articles	Exclusion / Inclusion Criteria Applied

Initial Search (Scopus database)	133	<i>Boolean string used: (digitali* OR e-government OR e-governance OR "smart city" OR "electronic government" OR "digital transformation") AND ("public service quality" OR "service quality" OR "citizen satisfaction" OR "public management" OR "public administration") AND (Indonesia OR indonesian)</i>
Time Range Filtering (2015–2025)	128	Excluded documents published before 2015 to ensure contemporary relevance to Indonesia's digital transformation policy (e.g., post-Smart Nation & e-Gov reforms).
Document Type Filtering	78	Included only peer-reviewed journal articles; excluded conference papers, book chapters, notes, and reviews.
Publication Stage Filtering	75	Excluded "in-press" or non-final publications to ensure citation stability and data reliability.
Language Filtering	74	Included English-language articles only; excluded those written in Bahasa Indonesia or other languages.
Relevance Screening (Abstract and Keywords)	32	Excluded studies not focused on public service quality, citizen satisfaction, or governance performance in the context of digitalization or e-government in Indonesia.
Full-Text Eligibility Review	15	Excluded studies with insufficient methodological clarity, theoretical basis, or unrelated domains (e.g., private-sector digitalization, ICT infrastructure without governance context).
Final Articles Selected for In-Depth Review	10	Articles met all inclusion criteria: empirical studies in Indonesia, digitalization-related, with measurable outcomes in public service quality, transparency, trust, or satisfaction.

Based on the 133 documents found during the initial search, a multistep screening process yielded 10 final articles that met all inclusion criteria. The number of screened articles indicates a large number of publications related to digitalization in Indonesia, but only a small number specifically and empirically address its impact on the quality of public services. The predominance of English-language articles and publications in reputable journals underscores the research's focus on credible and cross-disciplinary comparable research. The screening results also indicate that research on digitalization in the Indonesian public sector is still developing and tends to focus on the post-implementation period of the SPBE policy (2018–present), providing a strong basis for further literature synthesis.

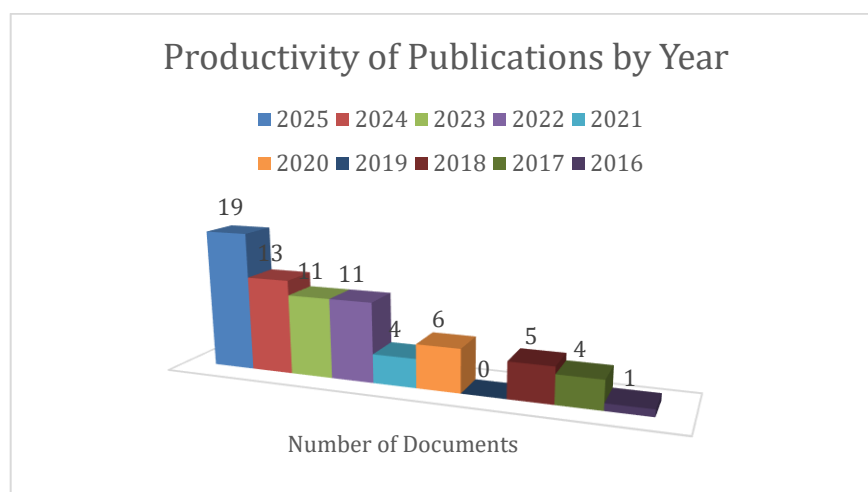


Figure 1. Productivity of Publication by Year

Figure [1] shows that research productivity has increased significantly over the past five years, peaking at 19 publications in 2025. This trend indicates that digital transformation in the public sector is increasingly becoming a primary focus of academic research, particularly following the implementation of the Electronic-Based Government System (SPBE) policy in 2018. Previous years (2016–2020) saw a relatively low number of publications, indicating that research on the digitalization of public services was still in its infancy. However, since 2021, the number of publications has steadily increased, reflecting growing academic awareness of the importance of digitalization in improving the quality of governance and public services in Indonesia. The sharp increase in publications in the 2023–2025 period can also be attributed to the development of the national digital transformation agenda and the impact of the COVID-19 pandemic, which has accelerated online services. Overall, this trend confirms that the topic of digital public service quality is becoming an increasingly relevant and prospective field of study in the context of digital bureaucratic reform in Indonesia. A cluster analysis based on subject area was conducted to identify the disciplines that have contributed most to research on digitalization and the quality of public services in Indonesia. The visualization in Figure 2 shows the distribution of publications by subject area as classified by the Scopus database.

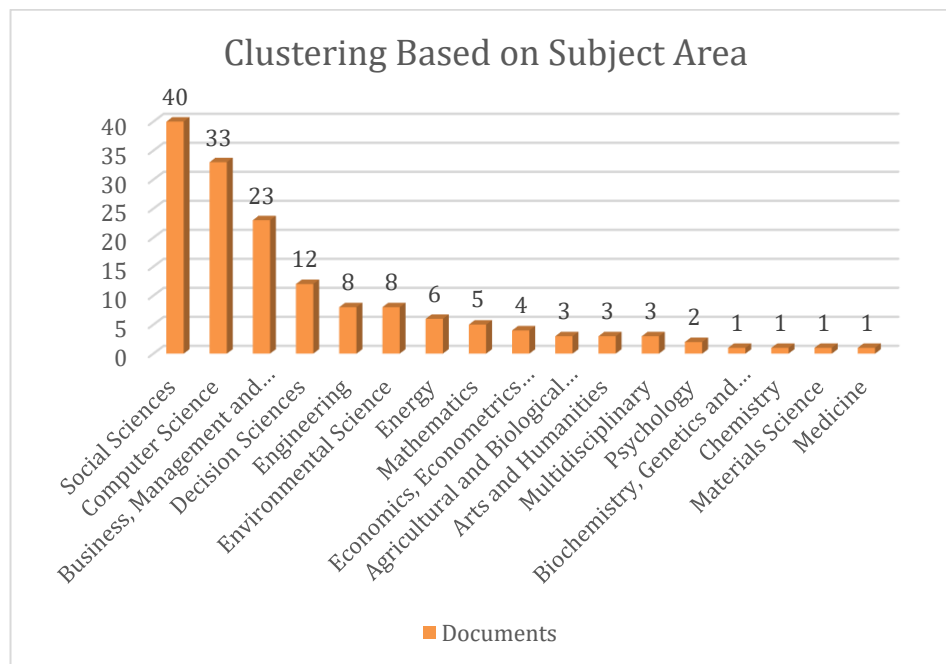


Figure 2. Clustering Based on Subject Area

The results in Figure [2] show that Social Sciences dominates with 40 publications, followed by Computer Science (33) and Business, Management, and Accounting (23). The dominance of these three fields indicates that studies on the digitalization of public services are multidisciplinary, combining social, technological, and managerial aspects. Other fields, such as Decision Sciences, Engineering, and Environmental Science, appear in smaller numbers, indicating cross-disciplinary involvement, but are still limited. Overall, this pattern illustrates that research related to the digitalization of the public sector in Indonesia is developing rapidly in the areas of public policy, information systems, and digital governance. And in figure [3] the author's productivity analysis was carried out to identify the academic figures who have most actively contributed to studies on digitalization and the quality of public services in Indonesia over the last decade.

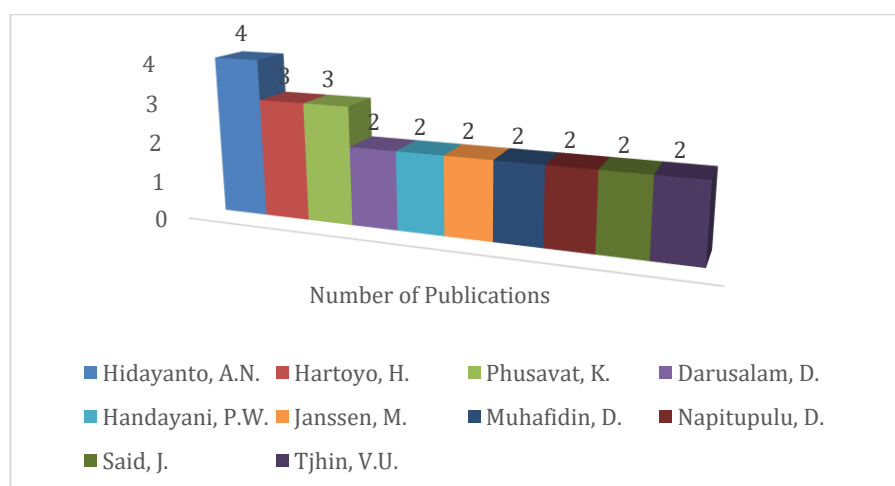


Figure 3. TOP 10 Authors' Productivity on Digitalization and Public Service Quality in Indonesia (2015 – 2025)

As seen in Figure 3, A.N. Hidayanto emerged as the most prolific author with 4 publications, followed by H. Hartoyo (3 publications), and several other researchers such as K. Phusavat, M. Janssen, and P.W. Handayani, each with two publications. The dominance of Hidayanto and his colleagues demonstrates the consistency of their research in the field of e-government and digital governance. The involvement of researchers from within and outside the country also demonstrates the existence of international academic collaboration that plays a role in strengthening research on public sector digitalization in Indonesia. The visualization in Figure 4 presents publication productivity based on scientific fields during the period 2015–2025 to illustrate the broad spectrum of research related to the digitalization of public services.

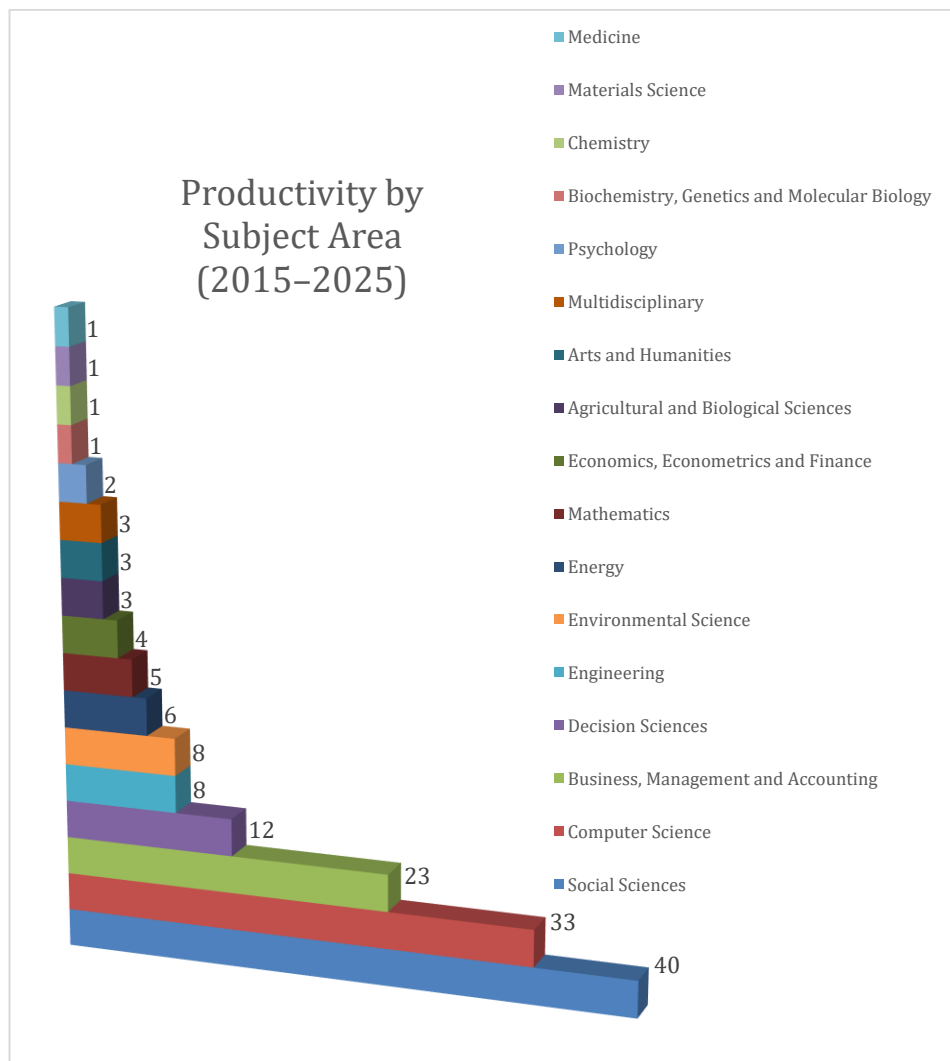


Figure 4. Productivity by subject area (2015–2025)

Trends indicate that the Social Sciences and Computer Science fields consistently serve as the primary foundation for digitalization research in the public sector. Disciplines such as Business and Management, Decision Sciences, and Engineering and the Environment provide complementary contributions that enrich analytical and technological approaches. The emergence of the Arts and Humanities, Psychology, and Medicine (to a lesser extent) indicates that the impact of digitalization is also beginning to be studied from behavioral, socio-cultural, and public health perspectives. This reflects the diversification of research toward a more inclusive and value-driven public service model.

Figure 5 shows that Indonesia was the main contributor with 70 documents, followed by Malaysia (7), and Taiwan and Thailand (3 each). Contributions from countries such as the Netherlands, Saudi Arabia, and the United States indicate international collaboration, particularly in the areas of digital governance and public information systems. Indonesia's dominance reflects the growing attention of local academics to the national digital transformation agenda, while cross-border participation demonstrates that the issue of public service quality in the digital era has become a global discourse.

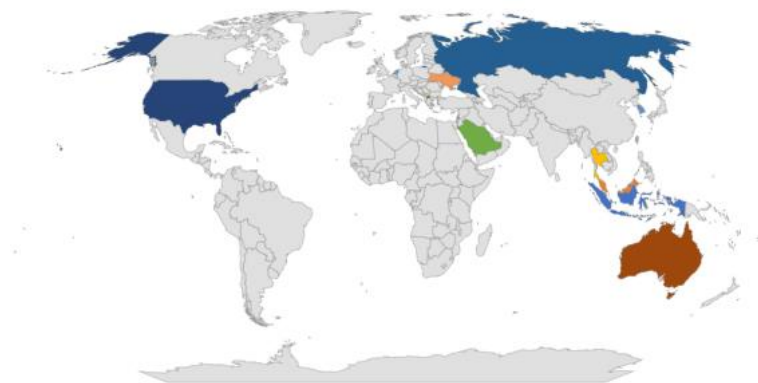
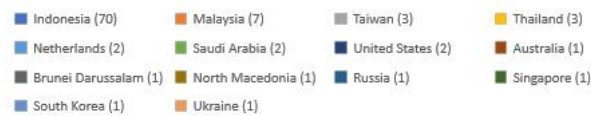


Figure 5. Productivity by Country

After mapping based on country of origin, a term co-occurrence map analysis was conducted using VOSviewer software to map conceptual relationships between topics in the literature related to digitalization and the quality of public services in Indonesia.

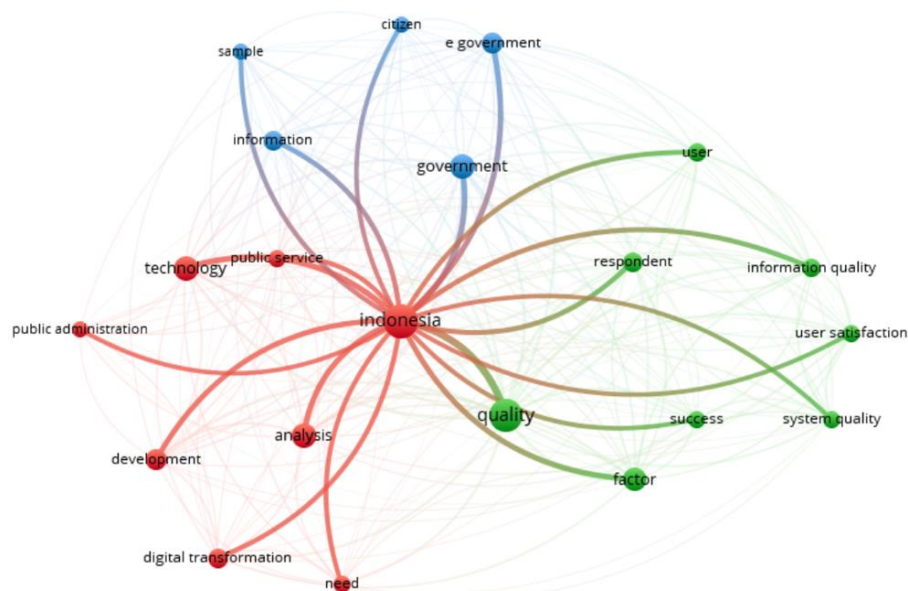


Figure 6. Vos Viewer Co-Occurrence MAP

Figure 6 displays three main thematic clusters:

1. The Mera cluster, focusing on digital transformation, public development, and technology, reflects the policy implementation dimension.

2. The Green cluster, emphasizing system quality, success factors, and user satisfaction, illustrates evaluative aspects based on the IS Success and SERVQUAL models.
3. The Blue cluster, highlighting government, citizens, and e-government, demonstrates the participatory and governance dimensions.

The interconnectedness between the clusters confirms that research on digitalization in Indonesia is integrative, combining technology, management, and social participation to improve the quality of public services. This finding aligns with the shifting global research trend toward a more value-oriented approach and citizen satisfaction. A total of ten empirical studies were identified as the most cited works in the dataset [3]. The table description of the studies collectively illustrates the multidimensional impact of digitalization on public service quality in Indonesia.

Table. 2 TOP 10 Most Cited Articles Related to „Impact of Digitalization on Public Service Quality in Indonesia.

No	Article Title	Authors (Year)	Theory / Framework	Key Variables	Key Findings	Implications
1	Improving Service Quality, Accountability and Transparency of Local Government: The Intervening Role of IT Governance	Sofyani, Riyadh & Fahlevi (2020)	IT Governance Theory; Good Governance Concept	IT compliance culture, IT governance, service quality, accountability, transparency	IT governance significantly mediates the relationship between IT culture and public service performance	Strengthening IT governance structures enhances transparency and accountability in local government
2	The Relation of E-Government Quality on Public Trust and Its Impact on Public Participation	Nulhusna, Sandhyaduhita, Hidayanto & Phusavat (2017)	DeLone & McLean IS Success Model; Trust Theory	System quality, information quality, dispositional trust, institutional trust, participation	System and information quality enhance trust, which increases public participation and continual use	Trust acts as a critical mediator for effective e-government adoption and public engagement
3	The Effect of E-Service Quality on User Satisfaction and Loyalty in Accessing E-Government Information	Noor (2022)	E-SERVQUAL Model	E-service quality, satisfaction, loyalty	E-service quality significantly affects satisfaction and loyalty; satisfaction partially mediates the relationship	Improving online service responsiveness and reliability boosts user satisfaction and loyalty

4	The Unraveling Loyalty Model of Traditional Retail to Suppliers for Business Sustainability in the Digital Transformation Era: Insight from MSMEs in Indonesia	Mujianto, Hartoyo, Nurmalina & Yusuf (2023)	Relationship Marketing Theory; B2B Loyalty Model	Service quality, trust, commitment, satisfaction, website quality, merchandising	Website quality, commitment, and satisfaction drive loyalty, while trust and service quality show weaker effects	Digital transformation in MSMEs requires focus on relational and technological quality for sustainability
5	The Success of Information Systems and Sustainable Information Society: Measuring the Implementation of a Village Financial System (SISKEUDES)	Ariyanto, Dewi, Hasibuan & Paramadani (2022)	DeLone & McLean IS Success Model; Trust Theory	System quality, information quality, service quality, trust, usage, satisfaction, net benefits	System and information quality and trust in technology affect satisfaction and usage, leading to sustainable IS	SISKEUDES enhances transparency and digital inclusion at the village level, fostering a sustainable information society
6	Citizen Empowerment and Satisfaction with Smart City App: Findings from Jakarta	Zhu & Alamsyah (2022)	Empowerment Theory; IT Artifact Model	App features (addressability, communicability, programmability), empowerment, satisfaction	App artifacts enhance psychological, social, and political empowerment, which drives satisfaction	Smart city apps empower citizens and increase satisfaction, bridging digital divide and civic trust
7	Evaluation of Customer Satisfaction on Indonesian Banking Chatbot Services During the COVID-19 Pandemic	Mulyono & Sfenrianto (2022)	Technology Acceptance & Service Quality Models	System quality, information quality, service quality, trust, perceived value, satisfaction	System and information quality significantly influence satisfaction and use intention	AI-based chatbot services improve digital service efficiency and maintain satisfaction during crises

8	Trust and Its Impact Towards Continuance of Use in Government-to-Business Online Service	Pinem, Immanuella, Hidayanto, Phusavat & Meyliana (2018)	Expectation Confirmation Theory (ECT); Trust Model	Service quality, trust, familiarity, recommendation, satisfaction, continuance intention	Trust does not directly affect continuance use but influences through satisfaction and perceived benefits	Government must strengthen perceived benefits and satisfaction to ensure long-term G2B system adoption
9	E-Procurement System Success Factors and Their Impact on Transparency Perceptions: Perspectives from the Supplier Side	Aminah et al. (2018)	DeLone & McLean IS Model; Trust Theory	System quality, service quality, regulation, trust, satisfaction, transparency	Trust is the strongest predictor of perceived transparency; regulation also supports system success	Strengthening supplier trust and regulatory frameworks enhances procurement transparency
10	Empirical Evaluation of Educational Service Quality in the Current Higher Education System	Rozak et al. (2022)	SERVQUAL Model	Tangibility, reliability, responsiveness, assurance, empathy	Russian students rated higher service quality; Indonesian institutions lag in responsiveness and digital readiness	Highlights the need for digital infrastructure and service responsiveness in Indonesian higher education

To gain a deeper understanding of the direction and contributions of current research, an analysis of the ten most highly cited articles focused on the impact of digitalization on the quality of public services in Indonesia was conducted. Article selection was based on the highest number of citations in the Scopus database, thematic relevance, and direct linkages to key variables such as service quality, accountability, transparency, trust, and citizen satisfaction. Table [2] lists the theories used, key variables, key findings, and policy implementations of each study, which served as the basis for developing a contextual synthesis of this study.

The analysis in Table 3 shows that most research on digitalization and public service quality in Indonesia uses a quantitative approach based on theoretical models, particularly the DeLone & McLean Information Systems Success Model, SERVQUAL, and Trust Theory. These models are widely used to assess the relationship between system quality, information quality, trust, and user satisfaction in the context of digital-based public services. In general, the main findings of these articles indicate that digitalization has a positive impact on dimensions of public service quality, particularly in terms of efficiency, transparency, and user satisfaction. However, the research findings also highlight the important role of mediators such as governance, trust, and user satisfaction, which bridge the relationship between technology adoption and improved service quality. For example, studies by Sofyani et al., (2020) and (Nulhusna et al., 2017) suggest that IT governance and public trust are crucial elements in strengthening transparency and public participation in e-government.

Furthermore, findings in specific sectors such as smart city applications (Zhu & Alamsyah, 2022), and village financial systems (Ariyanto et al., 2022) expand our understanding of how digitalization can strengthen citizen empowerment and information-based community development. Several other studies also highlight broader contexts, such as the digital transformation of businesses (Mujianto et al., 2023; Mulyono & Sfenrianto, 2022) demonstrating that digitalization not only improves public services but also creates new social and economic value. From a theoretical perspective, most articles adopt a combination of information systems theory and trust theory, indicating a consolidation of research paradigms linking technological and social aspects. Meanwhile, research gaps remain in the areas of digital equality (digital inclusion), digital apparatus literacy, and inter-agency integration systems, which are key challenges in ensuring inclusive and sustainable digital transformation. The results of the analysis in Table 2 indicate that the direction of research in Indonesia is moving from simply measuring technical efficiency to a more holistic understanding of how digitalization can shape public governance that is transparent, accountable, and oriented towards citizen satisfaction.

The challenges facing Indonesia are evident from the results of this study, which indicate that digitalization significantly impacts the quality of public services. Despite its benefits, challenges such as inconsistent data quality, limited digital literacy, and bureaucratic barriers hinder the full potential of digital initiatives (Hidayat, 2025). There is a need to improve digital infrastructure, workforce training, and cross-sector coordination to maximize the benefits of digital transformation (Eriza et al., 2025). Legal and regulatory frameworks need to be updated to align with technological advancements, ensuring data protection, cybersecurity, and effective governance (Isfihani et al., 2024; Setyawan et al., 2025).

The study emphasizes the importance of integrating various aspects such as employee skills, leadership, regulations, and infrastructure to successfully implement digital government services. Digitalization has been shown to significantly increase transparency and facilitate public oversight of government activities in Indonesia. Digitalization empowers citizens to actively monitor government actions and encourages civic engagement. Digitalization has a dual impact, leading to improved service quality, transparency, and government accountability, but not resulting in reduced corruption, collusion, and nepotism.

CONCLUSION

After analyzing 74 datasets, referring to the 10 most frequently cited key articles in this field, we concluded that such articles do exist and address key issues. We found that digitalization has the potential to transform the quality of public services in Indonesia by improving efficiency,

transparency, accessibility, and citizen satisfaction. However, the benefits have not been evenly distributed due to persistent infrastructure gaps, digital literacy challenges, and institutional fragmentation. Successful initiatives demonstrate the importance of strong leadership, stakeholder collaboration, and adaptive change management. To achieve a scalable and inclusive digital transformation, Indonesia must prioritize an integrated policy framework, continuous capacity development, and innovative models of stakeholder engagement. Future research should focus on bridging the digital divide and ensuring digital public services are accessible, reliable, and effective for all Indonesians.

References

- Admar, A. M., Sirojuzilam, Badaruddin, & Rujiman. (2024). Digital Transformation Model of Population Administration Services for Regional Development through a Population Data Utilization System in Medan City. *Journal of Ecohumanism*, 3(3), 579–591. <https://doi.org/10.62754/joe.v3i3.3366>
- Ariyanto, D., Dewi, A. A., Hasibuan, H. T., & Paramadani, R. B. (2022). The Success of Information Systems and Sustainable Information Society: Measuring the Implementation of a Village Financial System. *Sustainability (Switzerland)*, 14(7). <https://doi.org/10.3390/su14073851>
- Eriza, F., Nasution, N. F., & Thamrin, M. H. (2025). Natural resource management through digital transformation supporting forestry innovation 4.0 in North Sumatra. *IOP Conference Series: Earth and Environmental Science*, 1445(1). <https://doi.org/10.1088/1755-1315/1445/1/012110>
- Fang, Q., Yu, N., & Xu, H. (2023). Governance effects of digital transformation: from the perspective of accounting quality. *China Journal of Accounting Studies*, 11(1), 77–107. <https://doi.org/10.1080/21697213.2023.2148944>;WEBSITE:WEBSITE:TFOPB;PAGEGROUP:STRING:PUBLICATION
- Fikri, M. A., Huda, H., & Sutiyo. (2024). React Based Village Website Front-End Application. *2024 IEEE 22nd Student Conference on Research and Development, SCORed 2024*, 729–733. <https://doi.org/10.1109/SCORed64708.2024.10872683>
- Hanisch, M., Goldsby, C. M., Fabian, N. E., & Oehmichen, J. (2023). Digital governance: A conceptual framework and research agenda. *Journal of Business Research*, 162, 113777. <https://doi.org/10.1016/J.JBUSRES.2023.113777>
- Hidayat, R. (2025). DIGITAL GOVERNANCE AND TRANSPARENCY: HOW OPEN DATA INITIATIVES ENHANCE GOVERNMENT ACCOUNTABILITY. *Journal of Governance and Regulation*, 14(3), 194–204. <https://doi.org/10.22495/jgrv14i3art18>
- Isfihani, A. E., Izomiddin, Antasari, R. R., & Is, M. S. (2024). Political Law of Electronic System Implementation in Indonesia. *Nurani*, 24(1), 215–234. <https://doi.org/10.19109/nurani.v24i1.22672>
- Kaur, S., Singla, A., Garg, R., Govindaraj, Yadav, P., & Pathmu, B. (2025). Investigation of e-governance effectiveness and its role in enhancing governance transparency and trust. *Multidisciplinary Science Journal*, 7, e2025ss0311. <https://doi.org/10.31893/MULTISCIENCE.2025SS0311>
- Kaynanda, I. N. K., & Zarlis, M. (2024). Accelerating and Improving Public Services Through Village Digitalization. *2024 International Conference on Intelligent Cybernetics Technology and Applications, ICICYTA 2024*, 1210–1215. <https://doi.org/10.1109/ICICYTA64807.2024.10912947>
- Mujianto, M., Hartoyo, H., Nurmalina, R., & Yusuf, E. Z. (2023). The Unraveling Loyalty Model of Traditional Retail to Suppliers for Business Sustainability in the Digital Transformation Era: Insight from MSMEs in Indonesia. *Sustainability (Switzerland)*, 15(3). <https://doi.org/10.3390/su15032827>

- Mulyono, J. A., & Sfenrianto. (2022). Evaluation of Customer Satisfaction on Indonesian Banking Chatbot Services During the COVID-19 Pandemic. *CommIT Journal*, 16(1), 69–85. <https://doi.org/10.21512/commit.v16i1.7813>
- Murdhani, L. A. (2025). The Implementation of Digital Governance in Indonesia: A Systematic Review of Challenges and Opportunities. *International Journal of Scientific Research*, 2(01). <https://doi.org/10.62894/HW14CH33>
- Ngcaweni, B. (2025). *Digital government can benefit citizens: how South Africa can reduce the risks and get it right*. <https://doi.org/10.64628/AAJ.HTY3P3F4Q>
- Nulhusna, R., Sandhyaduhita, P. I., Hidayanto, A. N., & Phusavat, K. (2017). The relation of e-government quality on public trust and its impact on public participation. *Transforming Government: People, Process and Policy*, 11(3), 393–418. <https://doi.org/10.1108/TG-01-2017-0004>
- Nurman, Utomo, S., Gesmi, I., Othman, Z., & Zainal. (2025). Public Services Amid Infrastructure Inequities: A Case Study of Indonesia's Outer Islands. *International Journal of Sustainable Development and Planning*, 20(5), 2213–2223. <https://doi.org/10.18280/ijstdp.200536>
- Pham, L., Limbu, Y. B., Le, M. T. T., & Nguyen, N. L. (2023). E-government service quality, perceived value, satisfaction, and loyalty: evidence from a newly emerging country. *Journal of Public Policy*, 43(4), 812–833. <https://doi.org/10.1017/S0143814X23000296>
- Putri, M. E., Sensuse, D. I., Mishbah, M., & Prima, P. (2020). E-government inter-organizational integration: Types and success factors. *ACM International Conference Proceeding Series*, 216–221. <https://doi.org/10.1145/3378936.3378955>
- Rohayati, Y., & Abdillah, A. (2024). Digital Transformation for Era Society 5.0 and Resilience: Urgent Issues from Indonesia. *Societies*, 14(12). <https://doi.org/10.3390/soc14120266>
- Saura, J. R. (2021). Using Data Sciences in Digital Marketing: Framework, methods, and performance metrics. *Journal of Innovation & Knowledge*, 6(2), 92–102. <https://doi.org/10.1016/J.JIK.2020.08.001>
- Setyawan, Y., Erliyana, A., Makarim, E., Sjarif, F. A., Dewi, L. R., & Sukma, A. N. A. (2025a). Digital Government Post-Reform in Indonesia: Normative Developments and Implementation by State Organizing Institutions. *Law Reform: Jurnal Pembaharuan Hukum*, 21(1), 155–179. <https://doi.org/10.14710/lr.v21i1.68556>
- Setyawan, Y., Erliyana, A., Makarim, E., Sjarif, F. A., Dewi, L. R., & Sukma, A. N. A. (2025b). Digital Government Post-Reform in Indonesia: Normative Developments and Implementation by State Organizing Institutions. *Law Reform: Jurnal Pembaharuan Hukum*, 21(1), 155–179. <https://doi.org/10.14710/lr.v21i1.68556>
- Sofyani, H., Riyadh, H. A., & Fahlevi, H. (2020). Improving service quality, accountability and transparency of local government: The intervening role of information technology governance. *Cogent Business and Management*, 7(1). <https://doi.org/10.1080/23311975.2020.1735690>
- Solekan, D. S., Suparman, E., & Amirulloh, M. (2025a). Information security management system: Electronic apostille system security to ensure legal certainty across national borders. *International Journal of Data and Network Science*, 9(4), 881–890. <https://doi.org/10.5267/j.ijdns.2025.1.004>
- Solekan, D. S., Suparman, E., & Amirulloh, M. (2025b). Information security management system: Electronic apostille system security to ensure legal certainty across national borders. *International Journal of Data and Network Science*, 9(4), 881–890. <https://doi.org/10.5267/j.ijdns.2025.1.004>
- Son, T. H., Liem, N. T., & Khuong, N. V. (2020). Corruption, nonperforming loans, and economic growth: International evidence. *Cogent Business and Management*, 7(1), 1735691. <https://doi.org/10.1080/23311975.2020.1735691>;WGROUP:STRING:PUBLICATION

Tejedo-Romero, F., Araujo, J. F. F. E., Tejada, Á., & Ramírez, Y. (2022). E-government mechanisms to enhance the participation of citizens and society: Exploratory analysis through the dimension of municipalities. *Technology in Society*, 70, 101978. <https://doi.org/10.1016/J.TECHSOC.2022.101978>

Zhu, Y. Q., & Alamsyah, N. (2022). Citizen empowerment and satisfaction with smart city app: Findings from Jakarta. *Technological Forecasting and Social Change*, 174. <https://doi.org/10.1016/j.techfore.2021.121304>