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Bibliometric Mapping of Technology Use in Public Services: Intellectual Structure and Thematic Evolution

Nurman Sahar[1], Asmarianti[1], Markus Lukas Sabarofek[1], Muh. Nuryamin[1]

[1]*Public Administration Study Program, Faculty of Social Sciences and Law, Universitas Negeri Makassar, Makassar, Indonesia*

**Corresponding Author: Asmarianti*
E-mail: asmarianti@student.unm.ac.id

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Abstract

This study maps the intellectual structure and thematic evolution of research on technology use in public services, a body of work that has so far been scattered across several separate streams. A bibliometric analysis was applied to 102 English-language social science journal articles indexed in Scopus (1997–2026; data retrieved on 20 September 2026), combining the concepts of technology, the public sector, and public services. Publication, citation, source, and country patterns were analyzed descriptively, while the conceptual structure was examined through keyword co-occurrence using VOSviewer's network, overlay, and density visualizations. Publications rose sharply from 2023 onward (54 articles, or 52.9%, appeared in 2023–2026). Citations were highly concentrated, with ten articles accounting for more than half of all citations, and output was dominated by authors affiliated with institutions in the United Kingdom, the United States, and Italy. The keyword network formed nine clusters around the public sector and public services. Over time, the themes moved away from outsourcing and privatization toward trust, transparency, accountability, artificial intelligence, blockchain, and cybersecurity. Evidence from developing countries, Indonesia included (two articles), remains very limited. The study proposes a research agenda on citizen acceptance, legal and ethical safeguards, and institutional readiness at the local level.

Introduction

Public services are where citizens and government meet most directly. How quickly, accessibly, and fairly services such as licensing, social protection, health care, and civil registration are delivered shapes how people judge the legitimacy of their government. For more than two decades, governments have turned to technology to improve these encounters, moving from websites and electronic forms to cloud platforms, data analytics, the *Internet of Things, blockchain*, and, most recently, generative artificial intelligence. (Liu & Yuan, 2015) traced this twenty-five-year trajectory and showed that information and communication technology has grown from a tool for structured administrative tasks into a force that shapes government operations, service delivery, citizen participation, policymaking, and governance reform. (Dunleavy et al., 2006) had argued earlier that this trajectory signaled the decline of *New Public Management* logic and the rise of *digital-era governance*.

In Indonesia, a similar agenda has been written into regulation. Law Number 25 of 2009 on Public Services requires service providers to set up public service information systems, and Presidential Regulation Number 95 of 2018 establishes the Electronic-Based Government System (Sistem Pemerintahan Berbasis Elektronik, SPBE) as the national framework for digital government (Republik Indonesia, 2009, 2018). Regulation alone, however, does not guarantee the intended outcomes. (Schedler et al., 2019) found that early smart government initiatives

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struggled with weak legitimacy, an inadequate legal basis, and limited policy coherence, while Faozanudin et al. (2023) examined how ready village governments in Banyumas Regency were for the digital transformation of public services, in a setting marked by the digital divide and other constraints common in developing countries.

The scholarly response to these developments has been rich but fragmented. One stream asks what value technology actually creates in government. (Pang et al., 2014), for example, linked information technology resources to organizational performance through organizational capabilities and public value management. A second stream draws on the technology acceptance tradition (Davis, 1989); (Venkatesh et al., 2019) to explain why employees and citizens adopt or resist digital services, including cloud computing services (Shin, 2013), *Internet of Things* services (Weerakkody et al., 2021), and artificial intelligence (Gesk & Leyer, 2022). A third stream examines the implementation of specific emerging technologies, above all artificial intelligence (Maragno et al., 2023); (van Noordt & Misuraca, 2022) and *blockchain* (Cagigas et al., 2023); (Roth et al., 2023); (Sousa, 2023). A fourth stream focuses on risks and safeguards, including the legitimacy of algorithmic decision-making (König & Wenzelburger, 2021), the trustworthiness of artificial intelligence in the public sector (Berman et al., 2024), and legal liability when such systems get things wrong. Each stream has developed its own vocabulary, which makes it hard to see how the field fits together as a whole and where it is heading.

Bibliometric mapping is well suited to this problem. It combines performance analysis with science mapping to reveal, in a transparent and replicable way, the intellectual structure and temporal evolution of a research field (Donthu et al., 2021); (Zupic & Čater, 2015). Keyword co-occurrence analysis visualized in VOSviewer (van Eck & Waltman, 2010) is particularly useful for identifying thematic clusters and emerging topics. Earlier reviews and mapping studies have mostly dealt with public sector digitalization in general or with smart public governance, for example a systematic review of *public sector* digitalization (Esposito et al., 2024), a bibliometric analysis of smart public governance (Vujkovi, 2022), and a Scopus-based mapping of public sector digitalization comparing the United Kingdom and the United States (Prabawa et al., 2024). Other studies focus on a single technology, such as generative artificial intelligence (Alamsyah & Aryfiyanto, 2025) or *blockchain* (Sousa, 2023). To the best of our knowledge, few studies have mapped both the conceptual structure and the temporal evolution of technology use in public services across the social sciences while also paying attention to where evidence from developing countries stands. This study therefore maps social science journal articles indexed in *Scopus* that connect technology, the public sector, and public services. It addresses three research questions (RQs): (RQ1) How have publication and citation patterns developed over time? (RQ2) Which journals, countries, and articles form the core of the field? (RQ3) What does the conceptual structure of the field look like, and how has it evolved? The study offers an evidence-based overview of the field, a reading of its shift from service restructuring and market mechanisms toward trust and accountability, and a research agenda relevant to public administration in Indonesia and other developing countries.

Methods

Research Design

This study uses a quantitative *bibliometric* design with two complementary parts: performance analysis, which describes publication, citation, source, and country patterns, and science mapping, which reveals the conceptual structure of the literature through keyword co-occurrence (Donthu et al., 2021). The research followed the general workflow of bibliometric

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studies, from problem formulation and data searching and screening through to analysis and interpretation (Donthu et al., 2021); (Zupic & Čater, 2015), as summarized in Figure 1 below.

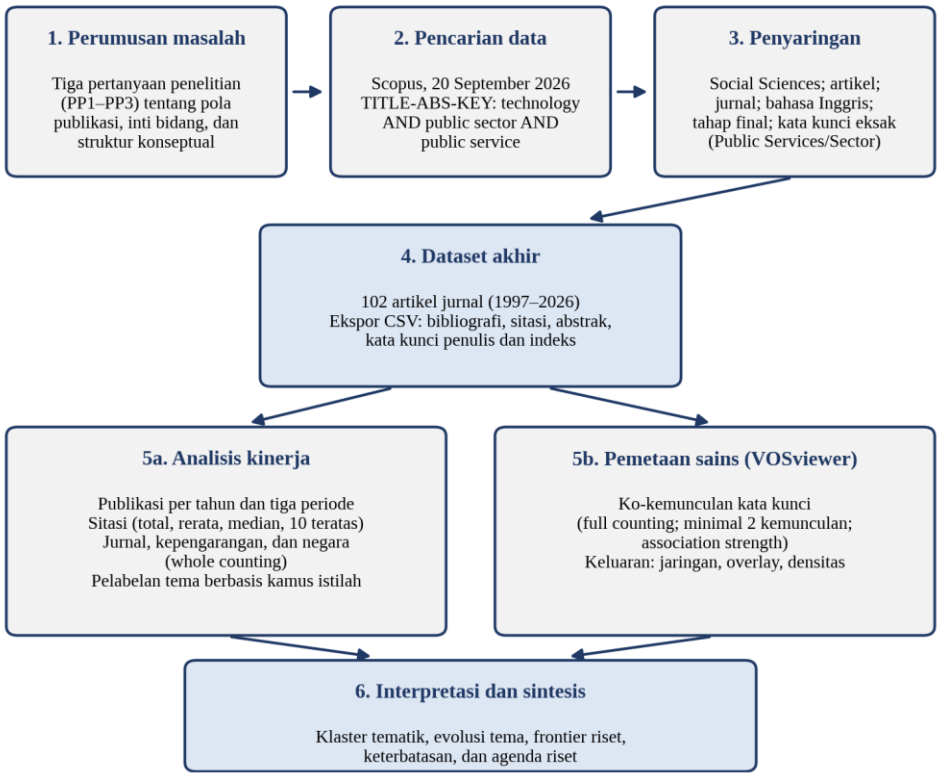


Figure 1. Stages of the Bibliometric Research

Source: Designed by the authors based on the research protocol (2026).

Data Source and Search Strategy

Data were retrieved from Scopus on 20 September 2026. Scopus was chosen because it covers a wide range of social science journals and provides bibliographic, citation, and keyword data that can be exported and read directly by VOSviewer. The search combined three core concepts (technology, the public sector, and public services) in titles, abstracts, and keywords, and was then narrowed using the filters listed in Table 1; no restriction on publication year was applied. An exact keyword filter (*Public Services* or *Public Sector*) kept the dataset focused on public sector applications, and the Social Sciences subject area was selected because the study is written for the social science and public administration community. One consequence of this design, namely that these two terms dominate the keyword map, is discussed in the results and limitations sections. The final dataset contains 102 journal articles published between 1997 and 2026. Bibliographic and citation information, abstracts, author keywords, and index keywords were exported in CSV format. Because the export was done in September 2026, the 2026 data cover only part of that year.

Table 1. Search Protocol and Inclusion Criteria

Element	Specification
Database	Scopus; accessed 20 September 2026
Search string	TITLE-ABS-KEY("technology") AND TITLE-ABS-KEY("public sector") AND TITLE-ABS-KEY("public service")
Subject area	Social Sciences
Document type	Article

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Language	English
Source type	Journal
Publication stage	Final
Exact keyword	"Public Services" OR "Public Sector"
Records analyzed	102 articles, 1997–2026

Source: Processed from Scopus (2026).

Data Analysis

Descriptive statistics on annual publication counts, citations, sources, authorship, and countries of affiliation were calculated from the exported file. Country counts are based on the number of articles with at least one author affiliated with a given country (whole counting). To trace technology themes over time, records were labeled using a dictionary of terms searched in titles, abstracts, and keywords (such as "*artificial intelligence", "blockchain", "digital transformation", "trust", and "outsourcing"*), and the share of labeled records was then compared across three periods: 1997–2018, 2019–2022, and 2023–2026. For science mapping, the co-occurrence of all keywords (author and index keywords) was analyzed in VOSviewer using *full counting* and a minimum threshold of two occurrences per keyword. Association strength normalization and the VOSviewer clustering technique were applied to position items and assign clusters (van Eck & Waltman, 2010). Three outputs were produced: a network visualization showing the clusters, an overlay visualization showing the average publication year of the documents in which each keyword appears, and a density visualization showing where items are concentrated. Cluster names were assigned interpretively, based on the items visible on the map and the content of representative articles. Because VOSviewer hides some labels to keep them from overlapping, the interpretation relies on labeled items.

Results and Discussion

Publication and Citation Performance (RQ1)

The dataset contains 102 articles (Figure 2). Only 25 of them (24.5%) were published between 1997 and 2018, and annual output never exceeded three articles in that period, except for seven articles in 2015. Output began to rise in 2019–2022 (23 articles, around six a year on average) and jumped from 2023 onward: 54 articles (52.9%) appeared in 2023–2026. Output peaked at 16 articles in 2023, fell to nine in 2024, and climbed back to 15 in 2025. The 14 articles already recorded for 2026 at the time of export suggest that scholarly interest remains high, even though the data for that year are incomplete.

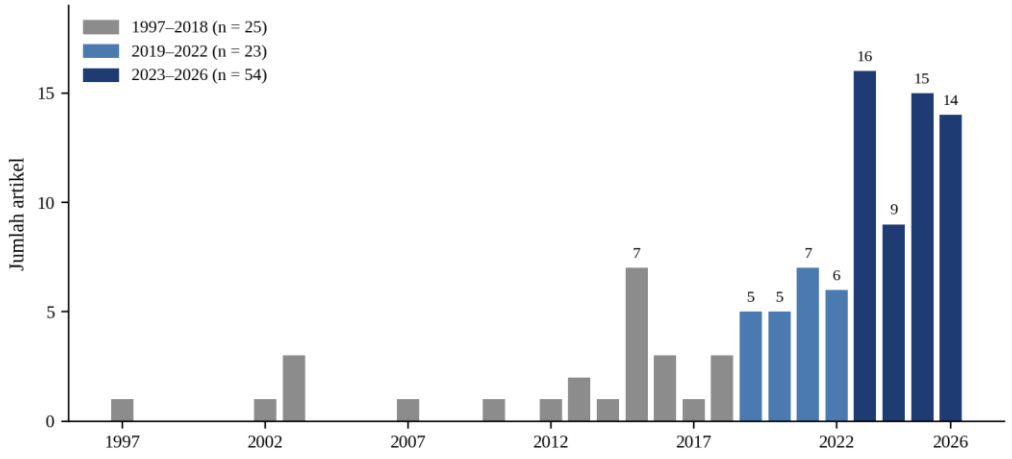


Figure 2. Number of Articles per Year, 1997–2026

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Source: Processed from Scopus (2026). Data for 2026 are incomplete (exported on 20 September 2026).

Altogether, the articles received 2,929 citations (mean 28.7; median 9), and the distribution is heavily skewed: the ten most-cited articles account for 1,549 citations, or 52.9% of the total (Table 2). Articles published in 2019–2022 have the highest mean citation count (55.6), while those from 2023–2026 average 13.1, which largely reflects the shorter time they have had to collect citations. Three of the ten most-cited articles deal with artificial intelligence (van Noordt & Misuraca, 2022); (Gesk & Leyer, 2022); (Maragno et al., 2023) and together account for 620 citations. The other influential articles cover information technology and public value (Pang et al., 2014), *big data* (Maciejewski, 2017), *Internet of Things* (Weerakkody et al., 2021), cloud computing services (Shin, 2013), stakeholders in *e-government* (Ashaye & Irani, 2019), the evolution of information and communication technology (Liu & Yuan, 2015), and barriers to *smart government* (Schedler et al., 2019). Six of the ten articles appeared in *Government Information Quarterly* or the International Journal of Information Management, which suggests that the intellectual center of gravity of the field lies largely in information systems and digital government outlets.

Table 2. The Ten Most-Cited Articles

Author (year)	Source	Main focus	Citations
van Noordt & Misuraca (2022)	Government Information Quarterly	Landscape of 250 artificial intelligence cases in EU governments	322
Pang et al. (2014)	Journal of Information Technology	IT resources, capabilities, and public value	208
Gesk & Leyer (2022)	Government Information Quarterly	Citizen acceptance of artificial intelligence in public services	178
Maciejewski (2017)	Int. Review of Administrative Sciences	*Big data* in public administration	151
El-Haddadeh et al. (2019)	Government Information Quarterly	Perceived value of IoT and citizen engagement	143
Shin (2013)	Government Information Quarterly	Acceptance of cloud computing services in government agencies	127
Maragno et al. (2023)	Int. Journal of Information Management	Factors, affordances, and constraints in implementing artificial intelligence	120
Ashaye & Irani (2019)	Int. Journal of Information Management	Stakeholders in *e-government* implementation in developing countries	116
Liu & Yuan (2015)	Public Administration and Development	Evolution of ICT in public administration	101
Schedler et al. (2019)	Information Polity	Barriers to adopting *smart government*	83

Source: Processed from Scopus (2026).

Sources, Authorship, and Countries (RQ2)

The articles are spread across many journals, but only a few stand out (Table 3). Seven journals together carry 32 articles (31.4%), with Digital Government: Research and Practice and

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Government Information Quarterly each publishing seven. Elsevier is the most frequent publisher, with 21 articles. Collaboration is moderate: articles have 2.6 authors on average, 24 articles (23.5%) are single-authored, and 27 (26.5%) involve authors from more than one country. Authors come from 57 countries, yet output is concentrated in the United Kingdom (15 articles), the United States (11), and Italy (10) (Table 4). The dominance of the United Kingdom and the United States matches the mapping by (Prabawa et al., 2024) of public sector digitalization, which also placed these two countries as the largest contributors. Italy's output is largely tied to the repeated collaboration of Tangi, Gastaldi, and Benedetti, each of whom appears on two or three articles. Developing and emerging economies are present but thinly represented: Brazil appears in four articles, India and Malaysia in three each, and Indonesia, Mexico, Morocco, and South Africa in two each.

Table 3. Journals with Three or More Articles

Journal	Articles
Digital Government: Research and Practice	7
Government Information Quarterly	7
International Journal of Public Sector Management	5
International Journal of Information Management	4
International Review of Administrative Sciences	3
NISPAcee Journal of Public Administration and Policy	3
Transforming Government: People, Process and Policy	3

Source: Processed from Scopus (2026).

Table 4. Countries with Four or More Articles

Country	Articles	Country	Articles
United Kingdom	15	Sweden	5
United States	11	Brazil	4
Italy	10	Canada	4
Germany	6	Slovakia	4
China	5		

Source: Processed from Scopus (2026). Counts are based on author affiliation (whole counting).

Conceptual Structure of the Field (RQ3)

Figure 3 presents the keyword co-occurrence network, illustrating the thematic relationships and intellectual structure of the reviewed literature. Nine distinct clusters emerge around a densely interconnected core dominated by the two largest nodes, *public sector* and *public services*. The prominence of these two keywords partly reflects the search strategy, as the dataset was constructed around these terms. Specifically, "public sector" appears in 81 of the 102 records (79.4%), while "public services" occurs in 38 records and the singular term "public service" appears in 20 records. Their central positions indicate strong connections across the literature, although their high frequency should not necessarily be interpreted as evidence of independent thematic dominance. Instead, the surrounding clusters provide more meaningful insights into the diversity of research topics, conceptual relationships, and emerging areas of scholarly attention. These clusters reveal how the broader discussion of public sector and public services is organized into interconnected thematic areas, highlighting both established research interests and potential directions for further investigation. A detailed summary of the nine clusters and their corresponding thematic characteristics is provided in Table 5.

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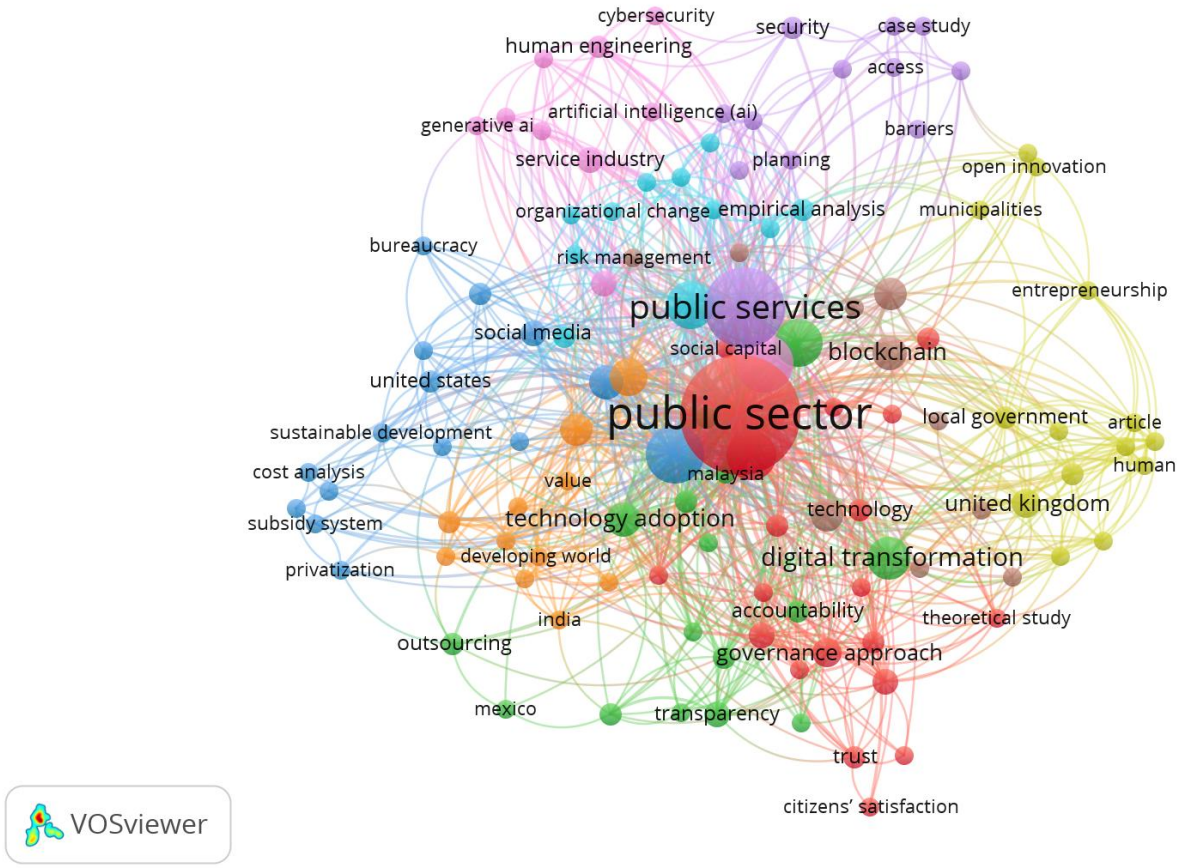


Figure 3. Keyword Co-occurrence Network (Network Visualization)

Source: VOSviewer output based on Scopus data (2026).

Table 5. Keyword Clusters and Interpretive Themes

Cluster	Representative items	Interpretive theme
Red	*public sector, governance approach, trust, citizens' satisfaction, theoretical study*	Governance, trust, and citizen satisfaction
Green	*digital transformation, technology adoption, transparency, accountability, outsourcing, Malaysia, Mexico*	Digital transformation and adoption in institutional contexts
Blue	*bureaucracy, United States, sustainable development, cost analysis, subsidy system, privatization*	Bureaucracy, cost, and market-oriented reform
Orange	*developing world, India, value*	Developing-country perspectives and public value
Yellow	*local government, municipalities, open innovation, entrepreneurship, United Kingdom, human*	Local government and open innovation
Purple	*public services, security, case study, access, barriers, planning*	Service access, security, and barriers
Pink	*cybersecurity, human engineering, generative AI, service industry*	Emerging artificial intelligence and cyber risk
Cyan	*organizational change, empirical analysis*	Organizational change and empirical assessment

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Brown	*blockchain, technology*	*Blockchain* and technology

Source: Processed from VOSviewer output (2026); cluster themes are interpretive.

The red and green clusters capture the normative and institutional core of the field. The red cluster brings together governance approaches, trust, and citizen satisfaction alongside the public sector node, and it asks whether technology can produce governance that people actually trust. (Berman et al., 2024) show that in Sweden's public employment services there is a considerable gap between the ambition of trustworthy artificial intelligence and what is achieved in practice; (Alqahtani et al., 2026) examine the role of cybersecurity, privacy, and trust in citizens' adoption of AI-enabled public services in Saudi Arabia; and (Gharbaoui, 2024) links recommender systems to citizen satisfaction in the Moroccan public sector. The green cluster connects digital transformation and technology adoption with transparency, accountability, outsourcing, Malaysia, and Mexico, indicating that adoption is closely tied to governance arrangements and institutional context. (Nielsen & Jordanoski, 2023) ask how strategic governance and intergovernmental cooperation shaped digital transformation in Australia, Denmark, and the Republic of Korea during the pandemic; (Treviño, 2023) examines twelve public service innovations in Mexico in terms of their capacity to prevent corruption; (Duhamel et al., 2018) study the determinants of collaboration in public–private IT outsourcing; and (Abdullah Sani & Jaafar, 2025) report, based on interviews with seventeen participants in Malaysia, how the adoption of the Internet of Things is perceived to affect service delivery, efficiency, and governance.

The blue and orange clusters hold the legacy of earlier reform agendas and the perspective of developing countries. The blue cluster (bureaucracy, cost analysis, subsidy system, privatization) reflects a period when technology was discussed together with costs, contracts, and market mechanisms. (Salmela & Turunen, 2003) illustrate this line of work by asking whether information systems in city governments promote market mechanisms or instead preserve monopolistic, hierarchical models of service delivery. The orange cluster (developing world, India, value) gathers studies from developing contexts, such as an analysis of implementation, value, and power in big data systems at two Indian public service organizations (Heeks et al., 2021) and a study of the role of stakeholders in *e-government* implementation in developing countries (Ashaye & Irani, 2019).

The yellow, cyan, and purple clusters show that technology use is at once local, organizational, and a matter of access. The yellow cluster (*local government*, *municipalities*, *open innovation*, *entrepreneurship*) points to the local level, for instance in the assessment of electronic maturity (*e-maturity*), defined as the extent to which an organization uses information and communication technology to deliver public services, across 2,219 Italian municipalities (Maragno et al., 2023), in technological innovation in Gaza Strip municipalities (Alastal, 2023), and in open innovation practices in Tanzania (Mkude, 2023). The cyan cluster (*organizational change*, *empirical analysis*) underlines that success depends on organizational capability as much as on technology, in line with the capability-based model (Pang et al., 2014) and the *technology-organization-environment* perspective applied in (Maragno et al., 2023). The purple cluster (*security*, *access*, *barriers*, *planning*) deals with barriers, from the groups of barriers identified by (Schedler et al., 2019) to the user-perspective analysis of barriers to and enablers of access to public services by (Paneva & Bencina, 2025).

Finally, the pink and brown clusters represent the technological frontier. The pink cluster (*generative AI*, *cybersecurity*, *human engineering*, a Scopus index term for human factors) combines adoption with risk. (Bright et al., 2024) report that 45% of surveyed UK public service professionals knew of colleagues using generative artificial intelligence and 22% used

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it themselves; (da Costa et al., 2026) apply gamification to raise privacy and information security awareness in public organizations; and (Alamsyah & Aryfiyanto, 2025) examine generative artificial intelligence for public service innovation in Indonesia. The brown cluster revolves around *blockchain*, with a proposed evaluation framework (Cagigas et al., 2023), a review of its transformative potential (Sousa, 2023), an explanation of its success in a federal setting through cross-organizational task–technology fit (Roth et al., 2023), an analysis of 167 public sector *blockchain* projects (Wamba et al., 2024) and of 165 European use cases classified by expected public value (Rodriguez Müller et al., 2025), and evidence on transparency, corruption, and trust in welfare programs in India (Singh et al., 2025).

Temporal Evolution of Themes (RQ3)

The overlay visualization (Figure 4) colors each keyword according to the average publication year of the documents in which it appears, on a scale running from 2014 to 2024. Three phases can be distinguished. Keywords such as outsourcing, privatization, developing world, organizational change, and case study appear in dark blue and purple, pointing to an early focus on restructuring service delivery and on organizational change. Cost analysis, bureaucracy, access, subsidy system, and Mexico appear in teal and green, marking a middle period. The most recent period, shown in yellow, includes generative AI, cybersecurity, human engineering, *blockchain*, digital transformation, technology, transparency, and citizen satisfaction.

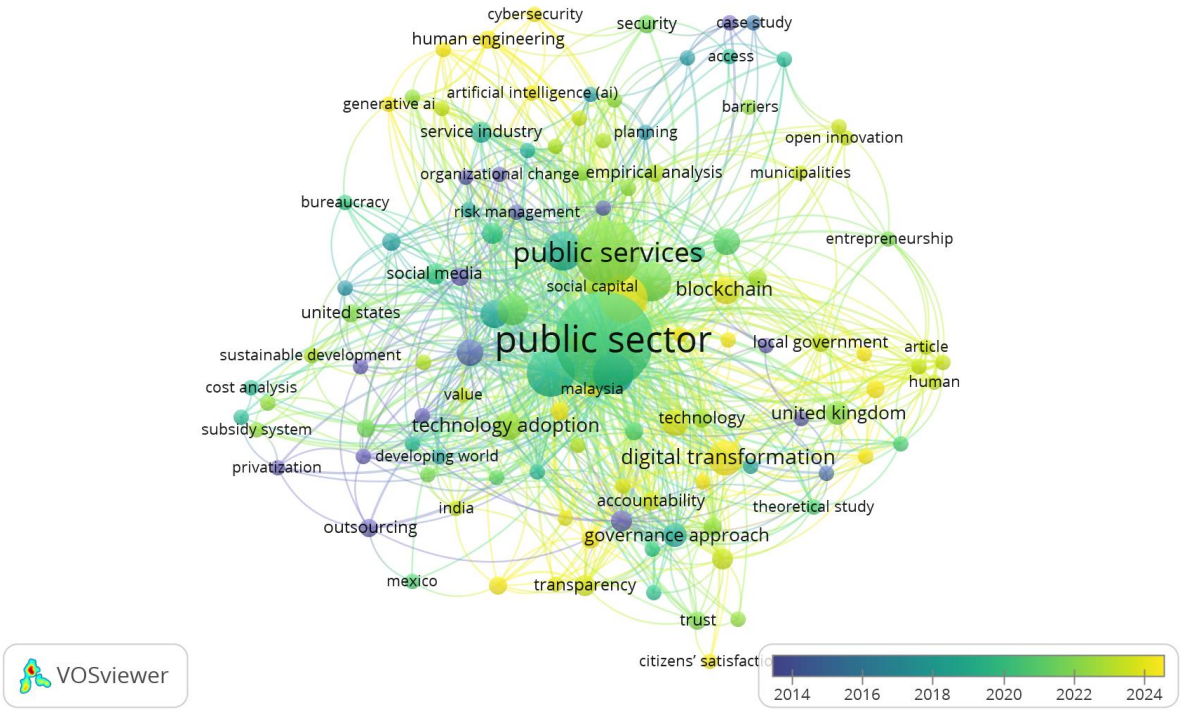


Figure 4. Overlay Visualization of Keyword Co-occurrence by Average Publication Year

Source: VOSviewer output based on Scopus data (2026).

This reading is supported by the dictionary-based labeling (Table 6). Before 2019, artificial intelligence does not appear at all (0 of 25 articles); in 2019–2022 it appears in 5 of 23 articles (21.7%), rising to 23 of 54 articles (42.6%) in 2023–2026. Blockchain goes from no articles to 1 and then to 8, while digital transformation grows from 1 to 2 and then to 19 articles (35.2% in the latest period). Attention to trust, transparency, and accountability rises to 46.3% of articles in 2023–2026, compared with 24.0% and 17.4% in the two earlier periods, whereas

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outsourcing, privatization, and procurement fall from 24.0% to 5.6%. E-government terms stay stable (20.0%, 21.7%, and 24.1%), suggesting that e-government has become the infrastructural background against which newer technologies are discussed.

Table 6. Share of Articles Mentioning Selected Themes by Period

Theme	1997–2018 (n = 25)	2019–2022 (n = 23)	2023–2026 (n = 54)
Artificial intelligence (including generative)	0 (0.0%)	5 (21.7%)	23 (42.6%)
Blockchain / distributed ledger	0 (0.0%)	1 (4.3%)	8 (14.8%)
Digital transformation / digitalization	1 (4.0%)	2 (8.7%)	19 (35.2%)
E-government / digital government	5 (20.0%)	5 (21.7%)	13 (24.1%)
Cybersecurity / privacy	0 (0.0%)	2 (8.7%)	7 (13.0%)
Trust / transparency / accountability	6 (24.0%)	4 (17.4%)	25 (46.3%)
Citizen acceptance / adoption / satisfaction	6 (24.0%)	10 (43.5%)	22 (40.7%)
Outsourcing / privatization / procurement	6 (24.0%)	2 (8.7%)	3 (5.6%)

Source: Authors' calculations from Scopus data (2026); an article may be assigned more than one theme.

Taken together, the maps show the discourse moving from themes of service delivery restructuring and market mechanisms (outsourcing, privatization, procurement) toward trust, transparency, and accountability. This shift is in step with growing concern over the legitimacy of algorithmic decision-making (König & Wenzelburger, 2021) and with the greater weight given to citizen acceptance and satisfaction in recent studies. This reading needs some qualification. Efficiency was not coded as a separate theme in Table 6, the trust theme actually dipped in the second period (17.4%) before jumping in the third (46.3%), and acceptance or adoption remained a major theme in all three periods (24.0%, 43.5%, 40.7%). The shift is therefore better understood as new layers of themes added on top of a still-strong adoption theme than as a wholesale replacement. The evidence base also differs by context. The newest technologies are often studied through large samples of use cases or projects, such as 250 cases in the European Union (van Noordt & Misuraca, 2022), or through national surveys (Bright et al., 2024), whereas studies from developing contexts are still mostly exploratory and case-based (Abdullah Sani & Jaafar, 2025); (Ashaye & Irani, 2019); (Mkude, 2023). One difference from earlier mapping work is also worth noting: Prabawa et al. (2024) reported a COVID-19 cluster in their map of public sector digitalization, whereas pandemic terms do not form a separate cluster in this map. The difference probably has to do with the different search strings and time spans, and it deserves further testing.

Research Density and Emerging Frontiers

The density visualization (Figure 5) shows that research is most concentrated around the public sector node, with secondary areas around public services, blockchain, digital transformation, technology adoption, and governance approaches. These are the most established and most connected topics. The sparse peripheral areas include cybersecurity, human engineering, generative AI, entrepreneurship, sustainable development, privatization, outsourcing, and citizen satisfaction. Read together with Figure 4, these topics fall into two groups. The newer

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peripheral topics (cybersecurity, generative AI, human factors, and citizen satisfaction) are emerging frontiers with few records so far, while the older peripheral topics (privatization and outsourcing) are fading from the field. Opportunities for new contributions lie mainly in the first group, especially in studies that link security and human factors to citizen satisfaction.

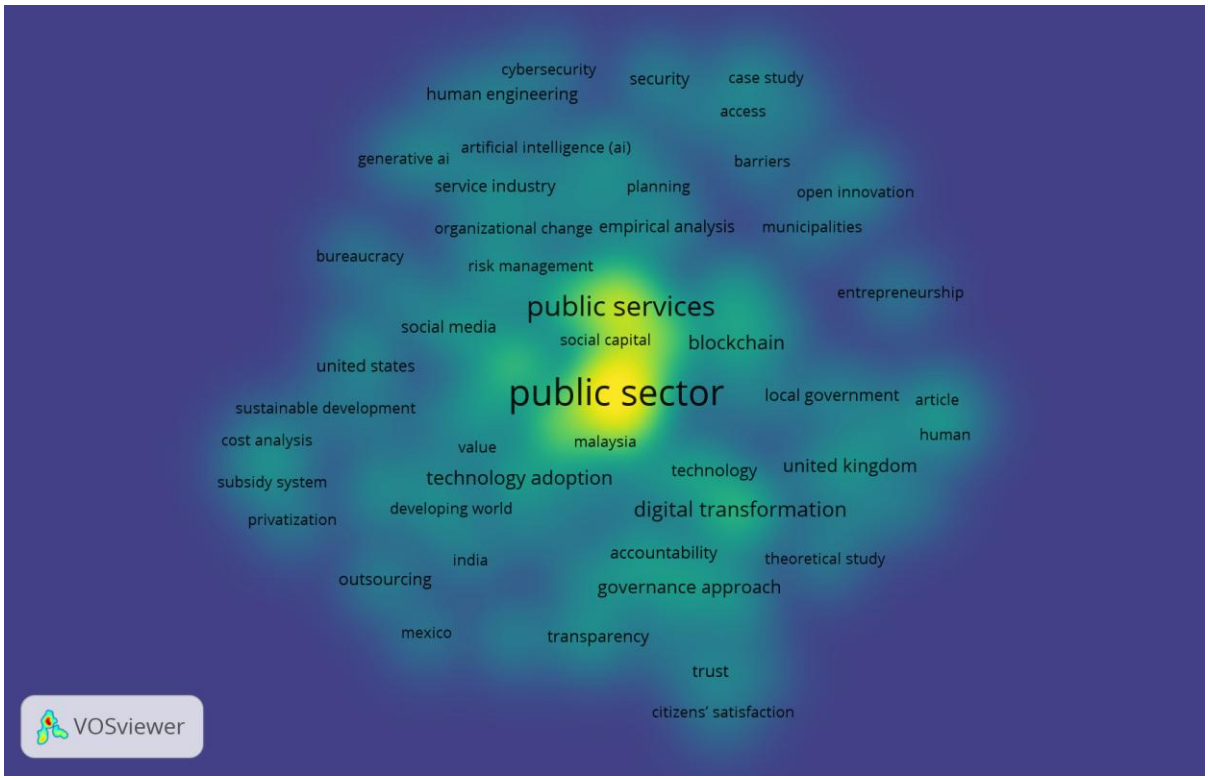


Figure 5. Density Visualization of Keyword Co-occurrence

Source: VOSviewer output based on Scopus data (2026).

Implications and Research Agenda

Three implications follow for public administration in Indonesia. First, the evidence base is thin. Indonesia appears in only two records, one on generative artificial intelligence (Alamsyah & Aryfiyanto, 2025) and one on village government readiness (Faozanudin et al., 2023), so most findings on citizen acceptance, trust, and implementation barriers come from other contexts and need to be tested locally before they are used as a basis for policy. Second, local-level readiness deserves priority. (Maciejewski, 2017) shows how electronic maturity can be measured through the actual use of digital services across thousands of municipalities; comparable measurement in Indonesian regencies, cities, and villages could complement existing SPBE evaluations. Third, the frontier of generative artificial intelligence, cybersecurity, and legal accountability is emerging while regulatory and organizational arrangements are still taking shape (Al-Dulaimi & Mohammed, 2026; (König & Wenzelburger, 2021).

On this basis, we propose a research agenda with five priorities: (1) citizen-side studies of acceptance, trust, and satisfaction with Indonesian public services using validated adoption models; (2) comparative studies of electronic maturity and local government readiness, including village governments; (3) studies of legal and ethical safeguards for algorithmic and generative systems in public services; (4) research linking cybersecurity and human factors to citizen satisfaction; and (5) mixed-methods and longitudinal designs that evaluate outcomes

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rather than intentions alone, together with studies of the organizational change that data-intensive technologies require (Margetts et al., 2024).

Limitations

Several limitations should be noted. First, the dataset is limited to Scopus, to English-language social science journal articles, and to records carrying the exact keywords Public Services or Public Sector. Relevant work indexed elsewhere, published in other languages (including Indonesian-language journals), or tagged with other keywords is therefore not covered. Second, because the exact keyword filter overlaps with two of the search concepts, those two terms dominate the network, leaving the informative structure in the surrounding clusters; the broad term "technology" also picked up a number of records on non-digital infrastructure, which adds noise. Third, keywords were not fully harmonized (for example, singular and plural forms, as well as generic Scopus index terms such as article and human that appear on the map), and the two-occurrence threshold makes the average years in the overlay visualization sensitive to low-frequency items. Fourth, the 2026 data are incomplete, recent articles have had little time to gather citations, and citations were not normalized by field or publication year. Fifth, cluster names are interpretive, and the dictionary-based labeling is indicative rather than exhaustive. Future studies could combine Scopus with Web of Science or Garuda-indexed journals, use a thesaurus file to merge synonyms, and complement the mapping with systematic content analysis.

Conclusion

This study examined 102 Scopus-indexed social science articles on technology in public services. In answer to RQ1, publications were relatively few until 2018 and then rose sharply from 2023, with 52.9% of the articles published in 2023–2026 and citations concentrated in a handful of articles on artificial intelligence, big data, the Internet of Things, and cloud computing. In answer to RQ2, the field is dominated by digital government and information systems journals and by authors affiliated with institutions in the United Kingdom, the United States, and Italy, while developing countries, Indonesia included, are underrepresented. In answer to RQ3, the keyword network forms nine clusters centered on the public sector and public services. Over time, the focus shifts from outsourcing, privatization, and organizational change toward artificial intelligence, blockchain, cybersecurity, and citizen satisfaction, while trust, transparency, and accountability grow in importance next to an adoption theme that remains strong.

For scholars and policymakers in Indonesia, these findings underline that technology use in public services should be judged not only on efficiency but also on acceptance, trust, legal accountability, and local readiness. Studies that generate Indonesian evidence on these dimensions, and that explore the frontiers identified here, are the most promising directions for future research.

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