

Digitalisation of Public Service Deliveries: A Bibliometric Analysis

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Abstract: The study focuses on the development of publications and emerging research trends in “Digitalisation”, and “Public Services” ranging from 2010 to 2025. Using SALSA method, the publications narrowed down to analyse is 483. From the analysis, it is clearly evident that the number of publications in the topic are tremendously increasing every year over a decade. VOSviewer is used in bibliometric analysis of the co-occurrence network, which resulted in co-occurrence networks of 42 items divided into 9 clusters based on the author keywords each featured by a different colour. The considerable connection between Digitalisation of Public Service is observed with networks, visualisation and overlays. The bibliometric analysis helps in identifying research gap, gain knowledge about current trends, and help in future explorations. The study also sheds light on themes emerging in public services, their digitalisation processes including the mechanism, workflow in government and public sector organisations. Further implications derived from the analysis such as citizen satisfaction, transparency, accountability helps in enhancing service delivery.

Keywords: Public Service; Delivery Mechanism; Accountability; Public Sector; Government

1. Introduction

The quality of public services and governance can affect a nation's economic development (Kulal et al., 2024). In low-income nations, the public provision of free or subsidized services is intended to provide social safety and reduce poverty (Halonen-Akatwijuka & Propper, 2024). Since poverty frequently shows up as poor food consumption, nutrition, and productivity, effective public program delivery can have a direct influence on growth by eliminating poverty (Dube, 2011). Supply of basic public services significantly reduce subjective poverty among urban and rural residents (Lu et al., 2023). In order to deliver services to communities, the Government service providers must work relentlessly and efficiently (Boyne, 2003). However, the lack of adequate front-line personnel in community health, education, and law enforcement may be the cause of India's poor service delivery. Filling vacancies is challenging due to budgetary constraints (Jirjees et al., 2024). In order to solve these personnel shortages, proponents call for higher budgets for recruiting more employees and starting additional initiatives such as digital interventions.

The digital revolution of service deliveries to public made a huge impact on providing people with basic necessities. Digitalisation of public sector integrated scalable software solutions enhancing service deliveries (Ugochukwu Francis Ikwuanusi et al., 2024). Transformation from manual to virtual world of services, public sector introduced substantial changes like Smart cities, E-Governance by using information and communication technologies (ICTs) (Setyawan, 2024). E-Governance streamlined accessibility and improved citizen engagement with the government with the use of tools like web portals, pre-filled forms (Gavrilă, 2024). The administrative changes and work flow is made easy and efficient with digital intervention (Weerakkody et al., 2019). With the advent of technology into administration, from service request initiation to their delivery is transparent and convenient for service receivers



(Mansoor & Williams, 2024). Human race entering the world of technology where robotics and artificial intelligence (AI) is taking over the world, generates hitherto unheard-of opportunities at the same time risks globally. Although there are challenges faced by both service providers and receivers which may include data security concerns, digital divide, information and communication, sustainability.

All public, private and corporate sectors paved a favouring environment to these technologies (Shvets et al., 2024). One study argued how the utilisation of digital technologies amplified the usage and efficiency of public organisations (Park & Kudo, 2024). Another study states that lowered cost of transactions, ease of accessibility to basic services results in good governance. Transparent and accountable service delivery from the providers help in increasing public trust (Parinusa et al., 2024). While there are benefits associated with digitalisation of public services, it can result in power struggles, concerns over privacy of data. Front-line workers of the digitalised mechanism play a pivotal role in efficient, secure deliveries of services (Villaseñor, 2024). The studies point out that marginalising sectors in areas without digital access creates a divide challenging inclusivity, resource management (Latupeirissa et al., 2024). Also, providing necessary tailored training sessions and adequate infrastructure to service providers enhance the efficiency of service deliveries across the sector (Sahur & Amiruddin, 2023).

2. Theoretical Framework

The digitalisation of public service and their delivery emerged as one of the main themes of public administration and governance studies. The early studies framed digital reforms by their efficiency, cost per transaction and modern administration. In contemporary literature, the digitalisation is acknowledged as a value-laden process with significant social and democratic consequences. The theoretical development of digital services in public sector became widely known because of Public Value Theory by **Mark H. Moore** in his book *Creating Public Value: Strategic Management in Government* (1995) which is a foundational theory on incorporating long-term value for public.

The theory redirects the evaluative emphasis of public administration from mere administrative performance to the overarching issue of creating value to society. In digitalisation of public service delivery, public value theory creates a lens in evaluating the extent to which digital changes yield socially beneficial consequences, including fairness, inclusion, transparency, trust, and accountability. In this study, public value theory is utilized not as a variable for empirical testing but as an interpretative and organizational framework for analysis. Bibliometric technique is employed to delineate the intellectual framework and academic networks. The theory establishes a foundation for critically discerning inadequacies and omissions in the literature. The notable lack of terms like legitimacy, social justice, or co-production in the prevailing bibliometric clusters may suggest the marginalization of normative public value issues in digital public service research. The increasing significance of inclusivity, ethics and accountability indicates a steady transition towards a more value - oriented digital governance.

3. Methodology

The main objective of this study is to bibliometrically analyse the trends and patterns in public service deliveries from Scopus database with the range of publications from 2010 to 2025. The Scopus database contains a significant number of reputable papers with trustworthy information, it was the only database used in this investigation. This study concentrated on international journals that were found using a search engine and taken from the Scopus database.

The keywords “Digitalisation” and “public services” were searched within article title, abstract and keywords in the document search option of Scopus database. The result yielded a total of 63819 documents for only “digitalisation”. The search is modified by adding ‘public services’ which resulted in 841 documents. The documents from the year 2010 to 2025 were included in the search that resulted in 822 documents. The search included Social Sciences, Computer science, Business Management and Accounting, Economics, Arts and Humanities, Multidisciplinary studies. The search excluded mathematics, chemical engineering, biological sciences. The count is descended to 754. Then it is refined based on source type as journal articles, books and book chapters. Conference papers are excluded to maintain quality which yielded 565 documents. Also, documents published in languages other than English are excluded from the analysis. The final count of documents used in bibliometric analysis is 483.

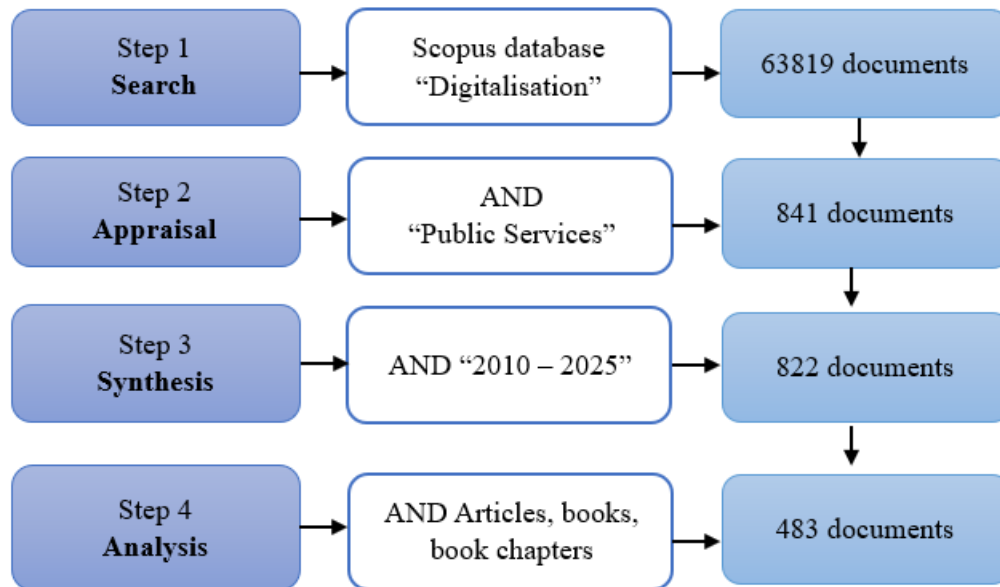


Figure 1. Research Method

VOSViewer is the software used in analysing the literature refined. All the documents resulted were analysed in Scopus and exported as .CSV (Comma Separated Values) file and imported into VOSViewer. Different analysis is performed such as co-occurrence based on occurrence of keywords, co-authorship based on authors, bibliographic coupling based on citations and countries. The search and refine process based on SALSA method (Search, Appraisal, Synthesis, Analysis) can be found in figure 1.

The objective of the bibliometric approach used in the study is for only evaluation of documents related to digitalisation of public services to find gaps in further research and provide implications for policy makers and future researchers.

4. Results

This section explores the data analysis performed using VOSViewer. It is a software tool specially used for bibliometric analysis with precision. The analysis comprises of citation outcomes in the initial stage followed by evaluation of co-occurrences, co-authorship, co-citations in the next steps based on the number of keywords, sources, affiliations, authors and their countries.

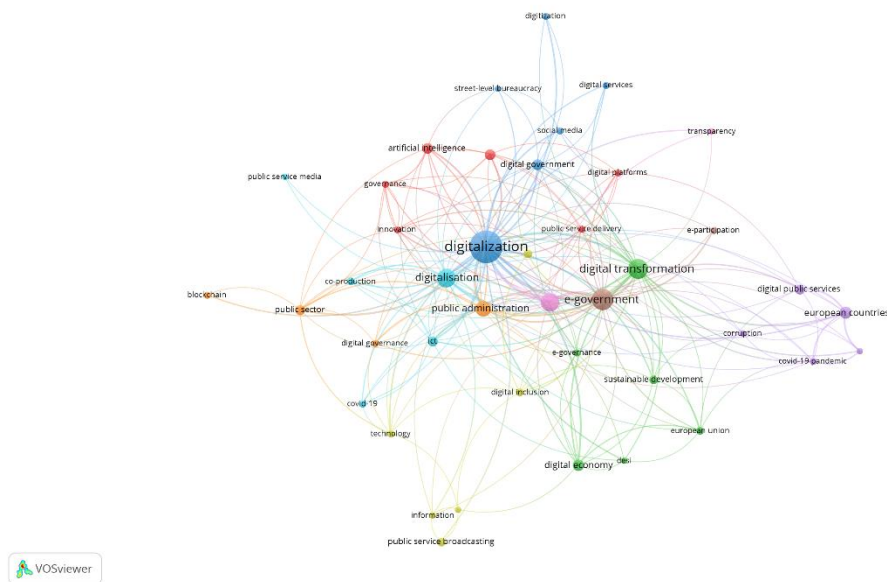
A. Publications Per Year

Fig. 2 given below shows the number of publications per year on the research area from the year 2010 to 2025. In the year 2010, the number of publications were 3. It gradually increased over the next few years until 2014. There was a fall in the year 2015 and 2017 and rose to higher level of more than 100 publications in 2025 which shows that the research is growing and need of the hour.

The line chart illustrates the growth in the number of publications over a 16-year period. The x-axis represents the years from 2010 to 2025, and the y-axis represents the count of publications, ranging from 0 to 140. The data points are connected by a dark teal line, showing a general upward trend with some minor fluctuations in the early years.

Year	Number of Publications
2010	1
2011	3
2012	3
2013	3
2014	7
2015	4
2016	9
2017	3
2018	11
2019	21
2020	24
2021	43
2022	59
2023	81
2024	100
2025	124

The Fig. 3 shows co-occurrence network visualisation of digitalisation of public services. The unit of analysis is author keywords. The number of times one keyword should repeat is selected to 5. Out of 1421 keywords, 42 met the threshold. The network shows keywords like digitalization with occurrence value (OV) of 127, followed by e-government with 56, digitalisation with 42, digital transformation with 49 are closely related to the digitalisation of public services. The documents consisted of 42 items divided into 9 categories/clusters having 212 links and the total link strength of 432.



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Figure 4 unveil the overlay visualisation of co-occurrence networks depending on keywords by author. The violet colour indicates research done in previous years such as 2021 and lighter colours of green and yellow indicate research done in recent years of 2024 and 2025. From the network it is evident that linking public services with digitalisation have become trend in research across different areas.

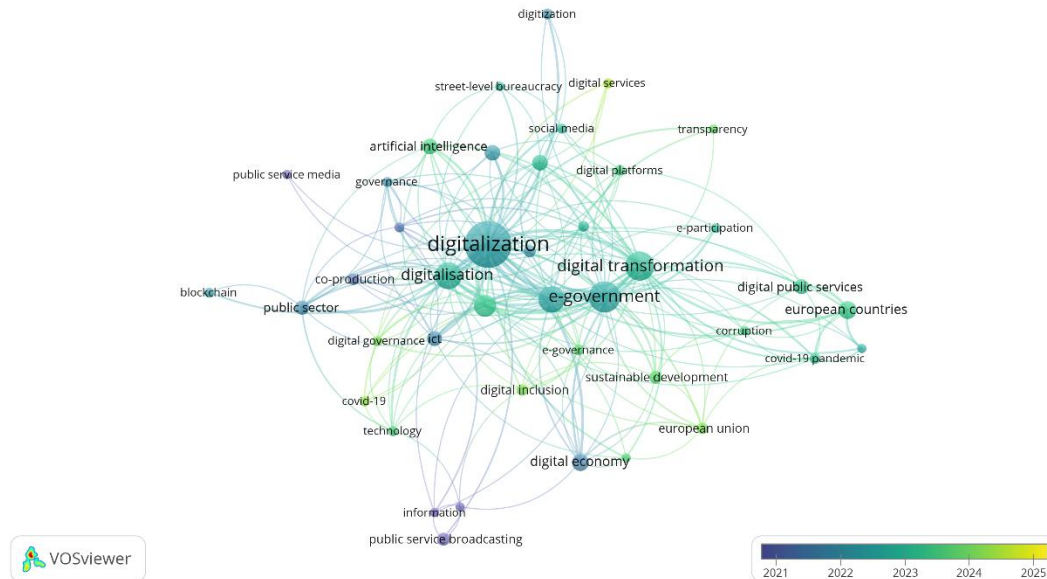


Figure 4 Overlay Visualisation of Co-Occurrences

C. Most Cited Publications

Table 1 List of Publications by Number of Citations

Author	Title	Year	Citation Count
Mergel et al.	Defining digital transformation: Results from expert interviews	2019	1098
Lindgren et al.	Close encounters of the digital kind: A research agenda for the digitalization of public services	2019	363
Lember et al.	The potential impacts of digital technologies on co-production and co-creation	2019	276
Costera Meijer	Understanding the Audience Turn in Journalism: From Quality Discourse to Innovation Discourse as Anchoring Practices 1995–2020	2020	152
Dabbous et al.	The impact of digitalization on entrepreneurial activity and sustainable competitiveness: A panel data analysis	2023	129

Kwilinski et al.	Unlocking Sustainable Value through Digital Transformation: An Examination of ESG Performance	2023	119
Trischler & Westman Trischler	Design for experience – a public service design approach in the age of digitalisation	2022	112
Kwilinski et al.	Environmental Sustainability within Attaining Sustainable Development Goals: The Role of Digitalisation and the Transport Sector	2023	104
Dhaoui	E-Government for Sustainable Development: Evidence from MENA Countries	2022	102
Heaton & Parlikad	A conceptual framework for the alignment of infrastructure assets to citizen requirements within a Smart Cities framework	2019	102

The Table 1 shows the documents with highest number of citations in the research area. The article titled “Defining digital transformation: Results from expert interviews” authored by Mergel, Ines A. et. al is on top of the list with 1098 citations published in the year 2019 from where rapid research occurred on the digitalisation of public services.

D. Co-Authorship based on Countries

Co-Authorship by Countries is employed to analyse the geographical distribution and international collaboration patterns in the research area. Countries are assigned the unit of analysis based on author affiliations and collaboration links are established with a maximum number of 5 countries per document. Out of 78, 36 met the threshold. Sweden is ranked on top of the list with 23 documents, 878 citations and a link strength of 21. The list followed by United Kingdom with 32 documents, 699 citations and a link strength of 20, Germany, Italy, Norway and Denmark. India is not listed among top 20 countries and hence there is a significant need for research in digital governance and international collaboration in the area of research.

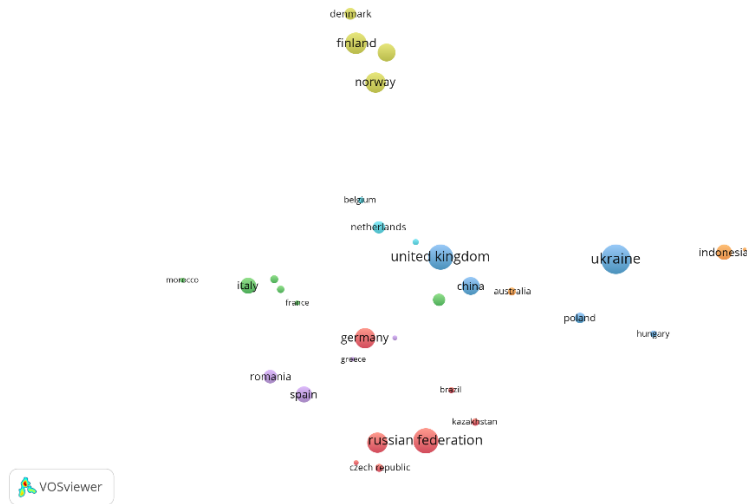


Figure 5 Co-Authorship based on Countries

E. Bibliographic Coupling

Fig 6 given shows the bibliographic coupling at author level. Authors were selected as unit of analysis, and coupling links were established based on shared cited references across their publications. The maximum number of authors per document is set to 5. Ha, Lethanh tops the list with 14 documents and 294 citations followed by Larsson, Karl Kristian with 4 documents and 138 citations and then Larsen, Hakon with 4 documents and 58 citations. Bibliographic coupling based on documents is performed which resulted in 483 documents meeting the threshold. Mergel, I., (2019) with 1098 citations occupies the major cluster.

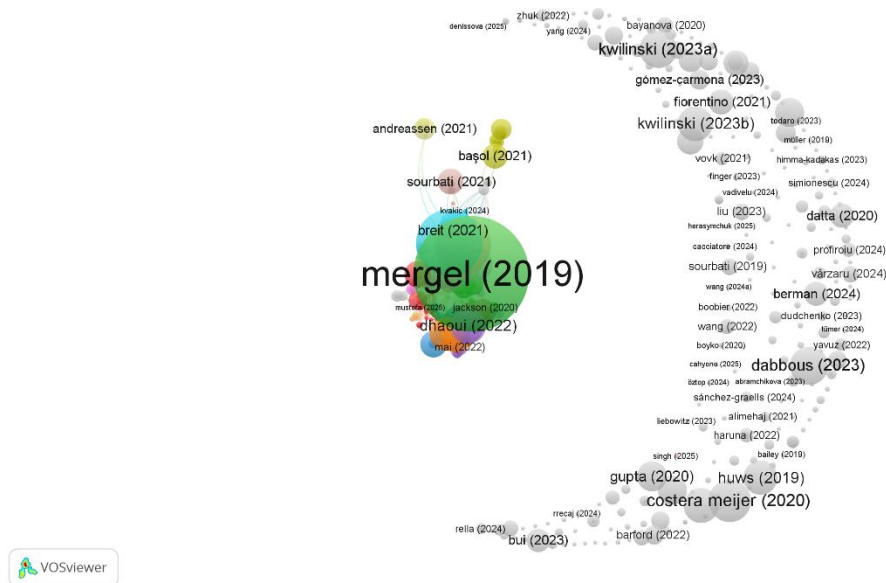


Figure 6 Bibliographic Coupling based on Documents

The distribution of publications within the most influential countries based on bibliographic coupling is also performed.

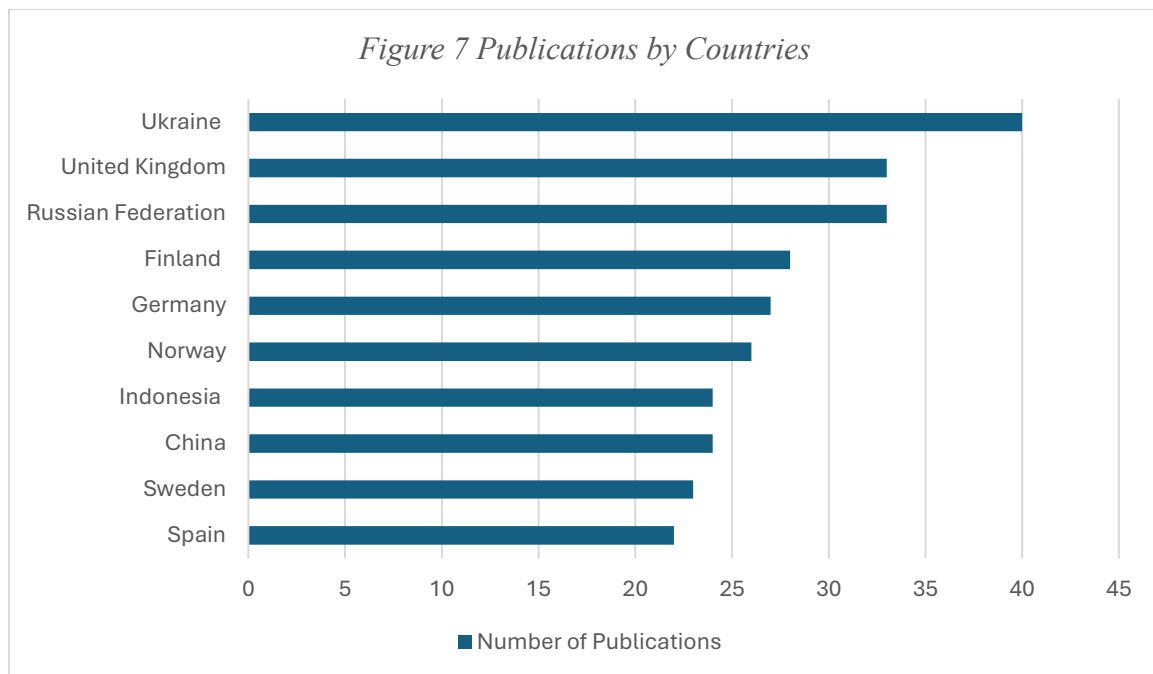


Fig 7 gives details of top publications by countries where Ukraine stands on top followed by United Kingdom, Russian Federation and Finland.

5. Discussion and Conclusion

Though there are widespread publications on digitalisation and public services across the globe, it is clear from the bibliometric analysis that there are not many publications linking digitalisation with public service delivery and their mechanisms. The concept of public service delivery mechanisms is implied from the co-occurrence of networks based on keywords such as digitalisation, e-government, public administration, sustainable development, digital transformation. The impact of these variables on the outcome due to digitalisation when studied, questions why the publications directly focus on digital revolution of public services. The findings clearly explain the potential for future exploration on the research area is necessary in various sub-domains and multi-disciplines. Also, most of the studies focus on management and political administration perspective exploring the mechanism and changing landscapes of digitalisation. This highlights the need for focus on the area in a sociological perspective where public play an important role in transformation since the services are meant for them. The individual factors like languages, cultures, digital literacy take a significant stand in improving public service deliveries while education, welfare, health and income of public are direct benefits from the transformation process. This is one of the influential implications of the study. Others include understanding of accountability, efficiency of service providers and changing social behaviours while adapting to technologies. The research area has studies which involve ethnographic techniques, high-level frameworks, computer models, diagnostic surveys, and whole-of-government governance which are examples of systems approaches in research. Because of this variation, these methods may appear vague and ambiguous, which restricts access to their insights and may impede future study and policymaking.

The study focuses on a single database which can be considered a drawback. Future studies can focus on other databases and interconnected research areas paving a way for complete conjugation of disciplines related to the specified area of research.

The digitalisation of public services has been analysed focusing on 483 documents from Scopus database. The data from analysis shows shifts in number of publications every year on digitalisation and public services. Majority of published articles are from renowned high-quality international journals. The most influential author is Ha Le Thanh with 15 documents. This study provides future researchers with valuable insights into literature on digitalisation of public services and attributes that arise from digital revolution of service deliveries. This investigation functions as a resource for future researchers to investigate and elucidate advancements in the current research domain. The results also suggest that practitioners and researchers in the social sciences sector should be informed about the

latest developments in the field. Collaborating with prominent authors in this field of study can also be facilitated by the findings.

Abbreviation: NIL

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