

The Role of E-Government in Public Services: A Bibliometric Analysis

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Abstract

This research investigates the pivotal role of e-government in public services through the lens of bibliometric analysis, employing the Biblioshiny tool for comprehensive bibliometric evaluation. E-government, a transformative force in contemporary public administration, involves the use of electronic platforms to deliver government services to citizens. The study employs bibliometric analysis to systematically examine and quantify the scholarly output, trends, and patterns in research related to the role of e-government in public services. The research leverages Biblioshiny, a sophisticated bibliometric analysis tool, to conduct an in-depth examination of a diverse range of publications. This tool facilitates the extraction of valuable insights from academic literature, shedding light on key thematic areas, prolific authors, and publication trends over specified periods. By employing bibliometric analysis, the study aims to provide a comprehensive overview of the intellectual landscape surrounding e-government in public services. The findings of this research are expected to contribute significantly to the understanding of the scholarly discourse on the role of e-government in public services. By utilizing bibliometric analysis, the study aims to identify gaps in existing research, highlight areas of prolific academic activity, and provide insights that can inform future research directions and policy considerations in the realm of e-government. Ultimately, this research endeavours to offer a nuanced and data-driven perspective on the evolving landscape of e-government and its impact on shaping effective and citizen-centric public services, thereby enhancing the efficiency, transparency, and accessibility of government operations and interactions with the public.

Keywords: *Bibliometric Analysis; E-Government; Public Services*

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Introduction

In the rapidly evolving landscape of governance and public administration, the integration of Information and Communication Technology (ICT) has become pivotal, ushering in a new era of efficiency, transparency, and citizen-centric services (Wijatmoko & Siregar, 2020). The relentless march of technological advancements has compelled governments worldwide to reevaluate and redefine their approaches to public service delivery. The paradigm shift towards e-government, encapsulating a range of electronic applications and tools, reflects a commitment to leveraging technology for the betterment of governance (Duarte & Leal, 2021; Hung, 2012; Umbach & Tkalec, 2022).

One of the primary drivers behind the adoption of e-government is the imperative to enhance efficiency in administrative processes. Traditional bureaucratic systems often suffer from inefficiencies, red tape, and delays (Hodžić et al., 2021). The integration of ICT allows for streamlined workflows, automated processes, and the real-time exchange of information, significantly reducing the time and resources required for service delivery. This newfound efficiency not only optimizes government operations but also fosters a more responsive and agile public administration (Dekker et al., 2020; Khoirunnisak & Rodiyah, 2024; Kovač, 2015; Li & Ding, 2020; Pengsuwan & Choonhaklai, 2019).

Transparency, a cornerstone of democratic governance, is another critical facet addressed by the integration of ICT. E-government platforms enable the dissemination of information in a timely and accessible manner, empowering citizens with the knowledge they need to actively participate in civic life. Through online portals and databases, citizens can access government policies, decisions, and public records, fostering a culture of accountability and openness. This transparency not only builds trust between citizens and the government but also serves as a safeguard against corruption and malfeasance (Abdulkareem et al., 2022).

Moreover, the integration of e-government has redefined the relationship between the government and its constituents, placing the citizen at the centre of service provision. Online platforms facilitate easy and convenient access to a myriad of public services, ranging from healthcare and education to tax filings and licensing. This shift towards citizen-centric services ensures that the government is responsive to the evolving needs of its population. Digital interfaces provide citizens with the flexibility to interact with government services at their convenience, breaking down geographical barriers and reducing the burden on traditional brick-and-mortar service centres (Kontogeorgis & Varotsis, 2021).

However, the integration of e-government is not without its challenges. Issues such as digital literacy, cybersecurity, and the digital divide need to be addressed to ensure equitable access to digital services. Moreover, governments must navigate the complexities of data privacy and protection to maintain citizen trust in digital platforms (Wa & Zhang, 2023).

The term 'e-government' serves as an umbrella concept, encapsulating a diverse spectrum of technological applications designed to facilitate seamless interactions between citizens and government entities. This study embarks on an in-depth

exploration of the multifaceted dimensions of e-government, meticulously scrutinising its profound influence on the quality, accessibility, and responsiveness of public services (Singh et al., 2020).

E-government, at its essence, represents a transformative approach to governance by leveraging the capabilities of Information and Communication Technology (ICT). The spectrum of technological applications under this umbrella encompasses a wide array of initiatives, ranging from online service portals and digital communication channels to data analytics and automation tools (Hu et al., 2019). These tools collectively aim to enhance the efficiency of government operations, improve service delivery, and foster a more transparent and responsive administration.

Quality, as a pivotal aspect of public services, is significantly impacted by the integration of e-government initiatives. The adoption of digital technologies allows for the standardisation and optimisation of service processes, leading to improved accuracy and consistency. Whether it involves the issuance of official documents, processing applications, or managing public records, the digitalisation of these processes ensures a higher level of precision, reducing errors and enhancing the overall quality of services provided to citizens. Through advanced data analytics, governments can also gain valuable insights into service performance, enabling continuous improvement and refinement (Rodríguez Bolívar & Alcaide Muñoz, 2022).

Accessibility, another critical dimension under scrutiny, underscores the commitment of e-government to making public services readily available to all citizens. Digital platforms provide a convenient avenue for individuals to access a plethora of services without the constraints of time and physical location. This inclusivity is particularly crucial as it bridges gaps for those in remote areas, persons with disabilities, or those facing mobility challenges. By offering a user-friendly and accessible digital interface, e-government strives to ensure that citizens, regardless of their circumstances, can engage with and benefit from public services (Astawa, 2023; Linhartova, 2020; Marwell & Calabrese, 2015; Naher et al., 2020).

The responsiveness of public services is profoundly influenced by the integration of e-government tools. Traditional bureaucratic processes often suffer from delays and inefficiencies, hindering the timely delivery of services. With digital platforms in place, governments can respond swiftly to citizen needs, providing real-time updates, feedback mechanisms, and interactive communication channels (Pak et al., 2023). This responsiveness not only enhances citizen satisfaction but also contributes to building trust in the government's ability to address and meet the evolving demands of its constituents (Liu et al., 2020).

As this study unfolds, it aims to unravel the intricacies of how e-government, through its technological applications, shapes the landscape of public services. By scrutinising its impact on quality, accessibility, and responsiveness, the research endeavours to contribute nuanced insights to the ongoing discourse on modernising governance in the digital age. Through a comprehensive analysis of these dimensions, a clearer understanding emerges of how e-government can be optimised to create a more efficient, inclusive, and citizen-centric public service delivery system.

The role of e-government in public services has been a subject of extensive research and analysis. E-government is concerned with the delivery of government services to the public through an integrated and operable network of legacy systems, enhanced with the latest technology (Acharya et al., 2022; Gallegos et al., 2023; Rukanova et al., 2023; Umbach & Tkalec, 2022; Nguyen et al., 2024). The effectiveness of e-government resources in public services is influenced by the role of stakeholders (Hörcher et al., 2023; Lu et al., 2023; Uwizeyimana, 2022; Zhao, 2010). Additionally, the quality of e-government services plays a crucial role in creating public value from the citizen perspective (Anthopoulos et al., 2007; Berlilana et al., 2017; Iong & Phillips, 2023; Janita & Miranda, 2018). Furthermore, the public value of e-government is influenced by factors such as information quality, service parameters, user orientation, efficiency, openness, and responsiveness (Afieroho et al., 2023; Arduini et al., 2013; Lara-Rubio et al., 2022; Sterrenberg & L'Espoir Decosta, 2023).

Bibliometric analysis has been utilised to track research impact and select appropriate metrics. It has also been used to analyse the scope of research on various topics, including materials research and Islamic economics and finance (Ahmad et al., 2021; Ashaye & Irani, 2019; Yigitcanlar et al., 2023). Moreover, the use of bibliometrics has been extended to understand the drivers of the public value of e-government and to bridge the gap in understanding the adoption of machine learning-based technologies to fight the COVID-19 pandemic (Uwizeyimana, 2022).

Public libraries have increasingly assumed the role of service provider for users of e-government services, highlighting the need to revise government policy related to the role of public libraries in their support of e-government (Arduini et al., 2010; Reddick & Turner, 2012; Torres et al., 2005). Additionally, the analysis of knowledge management systems of electronic government has been conducted to support the development of reliable information systems in specific regions (Cordella & Tempini, 2015; Distel & Lindgren, 2023). Furthermore, the evolution of e-government initiatives in EU local governments has shown potential benefits in speed and accessibility, although they are still overlapped with the public administration style of each country (Sharma & Mishra, 2017).

The role of e-government in public services has been a subject of extensive research and analysis. E-government involves the delivery of government services to the public through an integrated and operable network of legacy systems, enhanced with the latest technology (Acharya et al., 2022; Gallegos et al., 2023; Rukanova et al., 2023; Umbach & Tkalec, 2022). The effectiveness of e-government resources in public services is influenced by the role of stakeholders (Hörcher et al., 2023; Lu et al., 2023; Uwizeyimana, 2022; Zhao, 2010). Additionally, the quality of e-government services plays a crucial role in creating public value from the citizen perspective (Anthopoulos et al., 2007; Berlilana et al., 2017; Iong & Phillips, 2023; Janita & Miranda, 2018). Furthermore, the public value of e-government is influenced by factors such as information quality, service parameters, user orientation, efficiency, openness, and responsiveness (Afieroho et al., 2023; Arduini et al., 2013; Lara-Rubio et al., 2022; Sterrenberg & L'Espoir Decosta, 2023).

Despite the extensive body of research, there are notable gaps in the literature regarding the comprehensive impact of e-government on public service quality, accessibility, and responsiveness. Many studies have focused on specific aspects of e-government or have been limited to certain geographic regions. There is a need for a more holistic understanding of how e-government initiatives can be optimised to create a more efficient, inclusive, and citizen-centric public service delivery system. Additionally, there is limited research on the experiences and perspectives of countries in the Global South regarding e-government implementation.

The integration of e-government is a global phenomenon with significant implications for public service delivery. Developed countries have made substantial strides in implementing e-government initiatives, often serving as benchmarks for best practices. For instance, countries in Europe and North America have leveraged e-government to enhance transparency, reduce administrative costs, and improve citizen engagement. These international insights provide valuable lessons that can be adapted and tailored to different contexts, including those in the Global South.

The experiences and perspectives of countries in the Global South are crucial to understanding the broader impact of e-government. Many of these countries face unique challenges, such as limited digital infrastructure, lower levels of digital literacy, and socio-economic disparities. Despite these challenges, several countries in the Global South have made remarkable progress in e-government implementation. For example, Rwanda's innovative use of ICT in public services has positioned it as a leader in digital governance in Africa. Similarly, India's Digital India initiative aims to transform the country into a digitally empowered society and knowledge economy. These experiences highlight the potential of e-government to drive significant improvements in public service delivery, even in resource-constrained environments.

This study aims to fill these gaps by providing a detailed analysis of the impact of e-government on the quality, accessibility, and responsiveness of public services. By utilising bibliometric analysis, the study seeks to identify research gaps, highlight areas of prolific academic activity, and provide insights that can inform future research directions and policy considerations in the realm of e-government. The research endeavours to offer a nuanced and data-driven perspective on the evolving landscape of e-government and its impact on shaping effective and citizen-centric public services.

Research Methods

In this research, bibliometric analysis is essential to systematically and quantitatively assess the existing body of literature on e-government and public services, providing a structured approach to identify trends, patterns, and gaps in the research which can inform and guide future studies. The advantages of bibliometric analysis include its ability to offer objective and quantitative insights, manage and analyse large volumes of data efficiently, highlight key contributors, provide visual representations, and identify emerging trends, which collectively aid in strategic planning and decision-making.

The data processing involves several key steps: initiating a systematic literature search using selected databases like PubMed, IEEE Xplore, Scopus, and Web of Science to gather relevant publications; employing a curated set of keywords to ensure comprehensive coverage; screening and selecting literature based on predefined criteria to enhance relevance and reliability; and finally, conducting the bibliometric analysis using specialised tools like Biblioshiny to create citation networks, analyse co-authorship patterns, and visualise keyword co-occurrence, thereby providing deep insights into the role of e-government in public services (Hariguna et al., 2023). The selected databases offer a wealth of information crucial for understanding the evolving landscape of digital governance and its impact on public service delivery.

Keywords played a pivotal role in shaping the literature search strategy. A carefully curated set of keywords, encompassing variations and synonyms associated with e-government, public services, bibliometric analysis, and related concepts, was employed. This meticulous selection aimed to guarantee a thorough exploration of the vast and interconnected literature landscape, capturing diverse perspectives on the intersection of e-government and public services. Bibliometric analysis relies heavily on specialised software tools to manage, analyse, and visualise extensive datasets. For this research, Biblioshiny was employed (A. Khan & Krishnan, 2021).

The methodological approach employed in this research is centred around the utilisation of bibliometric analysis to gain profound insights into the role of e-government in public services. Bibliometrics, a quantitative research method, is widely recognised for its effectiveness in analysing patterns of publication, citation, and collaboration within specific research domains. The following paragraphs outline the key methodological steps undertaken in this research (Niftiyev, 2022).

The research initiation involves a systematic literature search employing the identified keywords in selected databases. The search aims to retrieve scholarly articles, conference papers, and other relevant publications addressing the role of e-government in public services. This comprehensive literature search lays the foundation for the subsequent analytical stages.

The retrieved literature undergoes thorough screening and selection based on predefined inclusion and exclusion criteria. This meticulous step ensures that the selected studies align closely with the research focus, contributing valuable insights into the chosen theme of e-government in public services. The screening process enhances the relevance and reliability of the literature included in the analysis.

Subsequently, the selected literature undergoes bibliometric analysis using dedicated software tools. This phase involves creating citation networks, analysing co-authorship patterns, and visualising keyword co-occurrence. Key bibliometric indicators, such as citation counts, h-index, and impact factors, are considered to assess the significance and influence of individual publications and authors. The use of advanced tools enhances the precision and depth of the bibliometric analysis.

Results and Discussion

The findings of this research illuminate the intricate landscape of e-government's impact on public services through meticulous bibliometric analysis. Through an exhaustive literature search and careful screening, the selected studies provide a comprehensive overview of the field. The bibliometric analysis, utilising advanced tools, uncovers patterns, collaboration networks, and influential authors, shedding light on the intellectual structure of e-government in public services. The synthesis of these findings offers valuable insights into current trends, future directions, and the overarching significance of technological advancements in reshaping governance. This research contributes to the scholarly understanding of e-government's role, offering a nuanced perspective for policymakers, researchers, and practitioners alike.

Table 1. Literature Selected for In-Depth Research in This Study

Source: Processed by Authors (2024)

No	Authors	Journal Article/Miscellaneous
1	Wijatmoko & Siregar (2020)	Evaluation of e-Government Service Quality Using e-GovQual Dimensions Case Study Regional Office Ministry of Law and Human Rights DIY
2	Hung (2012)	Building Citizen-centred E-government in Taiwan: Problems and Prospects 1
3	Hodžić et.al. (2021)	E-Government Effectiveness and Efficiency in EU-28 and COVID-19
4	Li & Ding (2020)	Holistic governance for sustainable public services: Reshaping government–enterprise relationships in china’s digital government context
5	Abdulkareem et.al. (2022)	The influence of openness of public organizations and social media use on e-participation: the mediating effect of trust in e-government
6	Kontogeorgis & Varotsis (2021)	Reinstating greek e-governance: A framework for e-government benchmarking, improvement and government policies
7	Wa & Zhang (2023)	Research on E-Government Adoption in Environmental Governance from the Perspective of Public Participation: Empirical Analysis Based on 31 Provinces in China

No	Authors	Journal Article/Miscellaneous
8	Singh et al., (2020)	Smart Monitoring and Controlling of Government Policies Using Social Media and Cloud Computing
9	Hu et al., (2019)	The influence of public engaging intention on value co-creation of e-government services
10	Rodríguez Bolívar & Alcaide Muñoz (2022)	Identification of research trends in emerging technologies implementation on public services using text mining analysis
11	Astawa (2023)	E-Government: Integrated, Fast, Certain and Easy Public Service Quality Management in Bali
12	Pak et al., (2023)	The transformation from e-government to e-land administration in Türkiye: A SWOT-based assessment analysis
13	Liu et al., (2020)	Understanding the evolution of public-private partnerships in Chinese e-government: four stages of development
14	Hariguna et al., (2023)	The antecedent e-government quality for public behaviour intention, and extended expectation-confirmation theory
15	Khan & Krishnan (2021)	Citizen engagement in co-creation of e-government services: a process theory view from a meta-synthesis approach
16	Niftiyev (2022)	The Role of Public Spending and The Quality of Public Services in E-government Development
17	Abdulkareem & Ramli (2021)	Does digital literacy predict e-government performance? An extension of Delone and Mclean information system success model
18	Nengomasha & Shuumbili (2022)	Access to e-government services by citizens through public/community libraries in Namibia
19	Harpy et al., (2022)	The Klampid New Generation Application as a Support for the Quality of E-Government Based Public Services in the City of Surabaya
20	Sharma et al., (2021)	Determinants of satisfaction among social entrepreneurs in e-Government services
21	Distel & Lindgren (2023)	A matter of perspective: Conceptualizing the role of citizens in E-government based on value positions

No	Authors	Journal Article/Miscellaneous
22	Alhanatleh et al., (2022)	Electronic government public value of public institutions in Jordan
23	Al-Sadiq (2021)	The Role of E-Government in Promoting Foreign Direct Investment Inflows
24	Goloshchapova et al., (2023)	E-Government as a Key to the Economic Prosperity and Sustainable Development in the Post-COVID Era
25	Filgueiras et al., (2019)	Digital Transformation and Public Service Delivery in Brazil
26	Chen & Aklikokou (2021)	Relating e-government development to government effectiveness and control of corruption: a cluster analysis
27	Cordella & Tempini (2015)	E-government and organizational change: Reappraising the role of ICT and bureaucracy in public service delivery
28	MacLean & Titah (2022)	A Systematic Literature Review of Empirical Research on the Impacts of e-Government: A Public Value Perspective
29	Dhaoui (2022)	E-Government for Sustainable Development: Evidence from MENA Countries
30	Rukanova et al., (2023)	Public value creation through voluntary business to government information sharing enabled by digital infrastructure innovations: a framework for analysis

Table 1 presents a comprehensive selection of literature pertinent to the study of e-government and public services, highlighting diverse research themes and geographic contexts. The entries include works such as Wijatmoko & Siregar's (2020) evaluation of e-government service quality using e-GovQual dimensions in Indonesia, and Hung's (2012) exploration of citizen-centred e-government in Taiwan. Studies like Hodžić et al. (2021) investigate e-government efficiency in the EU, while Li & Ding (2020) examine sustainable public services in China's digital government context. Abdulkareem et al. (2022) analyse the impact of openness and social media on e-participation, and Kontogeorgis & Varotsis (2021) focus on Greek e-governance. Research by Wa & Zhang (2023) delves into e-government adoption in Chinese environmental governance, and Singh et al. (2020) discuss smart monitoring of government policies via social media and cloud computing. Additional studies such as Hu et al. (2019) address public engagement

in e-government services, while Rodríguez Bolívar & Alcaide Muñoz (2022) identify research trends using text mining. These works, among others listed, provide a rich foundation for understanding the multifaceted role of e-government in enhancing public service delivery, emphasizing the necessity of bibliometric analysis to map research trends, identify key contributions, and assess the impact and collaboration within this field.

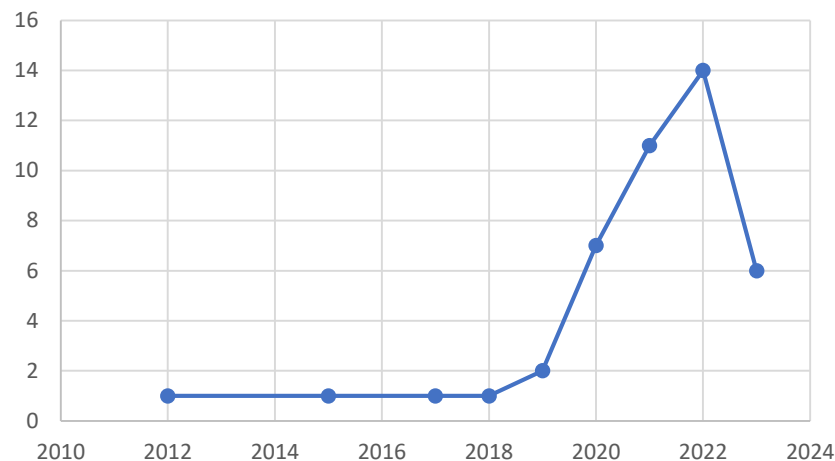


Figure 1. E-Government Research Trends
Source: Processed by Authors (2024)

Figure 1 presents the distribution of research articles across the specified years, revealing intriguing patterns in the exploration of the role of e-government in public services. In the earlier years, specifically in 2012, 2015, 2017, and 2018, there is a modest representation with one research article each, indicating a gradual emergence of interest in this research domain. The momentum gains traction in 2019, where the number of research articles doubles to two, signifying a notable increase in scholarly attention. Subsequently, a substantial surge is observed in 2020, with seven research articles, marking a turning point in the academic exploration of e-government's impact on public services. The trend continues to intensify in the subsequent years, with 11 research articles in 2021, 14 in 2022, and six in 2023, reflecting a sustained and growing interest in this subject. This progressive increase underscores the evolving significance of e-government in reshaping and influencing public service delivery, as evidenced by the expanding body of scholarly work dedicated to its analysis and understanding.

Figure 2 provides the distribution of research articles across various publications, painting a comprehensive picture of the diverse platforms contributing to the discourse on e-government and public services. Several publications, such as the International Journal on Informatics for Development, the Australian Journal of Public Administration, and the Central European Public Administration Review, each host a singular research article, indicating a broad spectrum of outlets engaging with this subject. Additionally, notable journals like Government Information Quarterly feature multiple research contributions, emphasizing their role as influential platforms in fostering academic

discussions on e-government. The journal Sustainability stands out with two research articles, underscoring its commitment to exploring sustainable practices in the context of digital governance. Overall, this diverse range of publications demonstrates the widespread interest and engagement of scholars across different platforms in advancing our understanding of e-government's role in shaping public services.

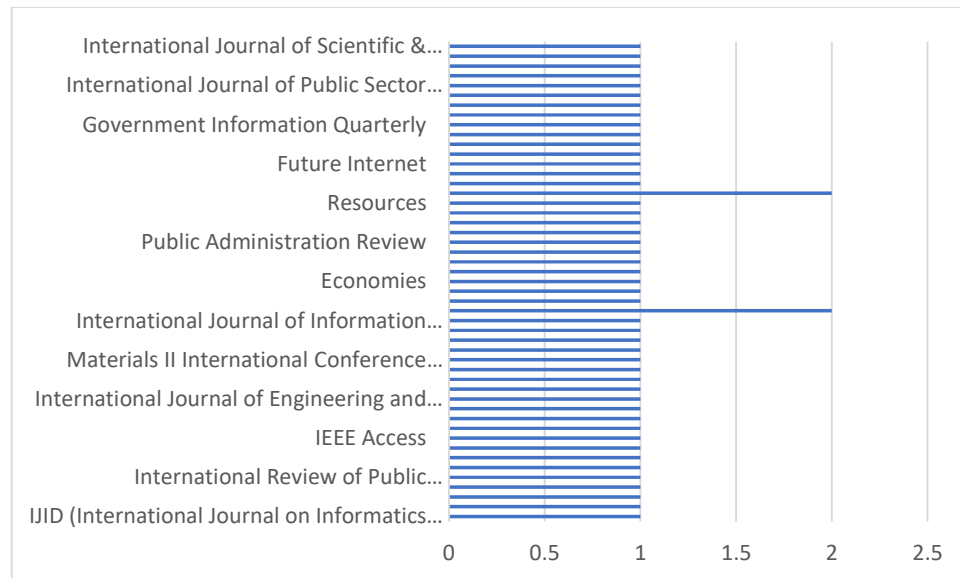


Figure 2. E-Government Implementation Research Publication Trends
Source: Processed by Authors (2024)



Figure 3. Country Article Producers on E-Government Issues
Source: Processed by Authors (2024)

In Figure 3, the analysis of e-government research distribution reveals significant variation in research activity levels across different countries. Taiwan, Switzerland, China, Oman, Greece, India, Brazil, South Korea, Pakistan, Namibia, Tanzania, and Nigeria each have one research study associated with e-government. Jordan stands out as a primary focus of research with three studies, indicating sustained interest in the development of e-government services in the country. Meanwhile, Indonesia also emerges as a significant research focus with two studies, signalling increasing attention to e-government development at the national level. In conclusion, this distribution reflects the diversity in the levels of engagement and research interest across different regions, portraying the complexity of challenges and opportunities faced by these countries in adopting and advancing e-government services.



Figure 4. Word Cloud Heatmap for E-Government
Source: Processed by Authors (2024)

Figure 4 presents a treemap visualization of the most relevant words in research related to e-government and public services. Each colour represents a specific category, and the size of each box indicates the frequency or importance of the corresponding term within the analysed literature. The term "e-government" has the largest box, signifying its dominance as a central topic. Other prominent terms include "public trust," "public service," "productivity," "service delivery," "digital transformation," and "public complaints," highlighting key areas of focus in e-government studies. Additional terms such as "Technology Acceptance Model," "theoretical framework," "library research," and "secondary sources" suggest common methodological approaches used in these studies. Overall, the image provides a comprehensive overview of the key themes and issues

explored in the field of e-government research, illustrating the diverse and interconnected nature of this academic domain.

The frequency distribution of keywords in the e-government research landscape provides insights into the key thematic areas and focuses of scholarly investigations. "E-government" emerges as the most frequently occurring keyword, suggesting a predominant emphasis on the overarching concept of electronic governance. Following closely are keywords such as "public service" and "public trust," indicating a substantial interest in the quality and trustworthiness of services provided by government entities. The prevalence of "productivity" as a keyword highlights a concurrent interest in enhancing the efficiency and output of public administration through e-government initiatives. Additionally, the presence of keywords like "service delivery," "digital transformation," and "ICT" underscores the importance of technological advancements and their impact on public sector services. Keywords such as "public complaints" and "administrative fraud" signify a focus on challenges and issues within e-government implementations. Moreover, the inclusion of "Technology Acceptance Model," "theoretical framework," "library research," and "secondary sources" reflects the methodological diversity and academic rigor applied in studying e-government phenomena. In essence, this keyword analysis provides a comprehensive overview of the multifaceted dimensions and research methodologies employed in the examination of e-government.

E-Government Evaluation

Electronic Government, commonly known as e-government, has emerged as a transformative force in the realm of public administration (Abdulkareem & Ramli, 2021). In recent years, the growing reliance on digital technologies has prompted governments worldwide to transition their services into the digital landscape, aiming to enhance accessibility, efficiency, and overall service quality. This paradigm shift necessitates an in-depth evaluation of e-government services, and this research endeavours to delve into precisely that (Nengomasha & Shuumbili, 2022).

The focal point of this study lies in the evaluation of e-government services, with a nuanced examination of the dimensions encapsulated by the e-GovQual framework. E-GovQual, an established model for evaluating e-government service quality, encompasses critical dimensions that serve as benchmarks for assessing the effectiveness and efficiency of electronic governance services. The dimensions include factors such as usability, information quality, system quality, service interaction, and overall user satisfaction (Harpy et al., 2022).

Understanding the perceived quality of e-government services is imperative for several reasons. First and foremost, it provides insights into citizens' experiences when interacting with digital government platforms. By comprehending how users perceive the usability, reliability, and accessibility of e-government services, policymakers and administrators can tailor their initiatives to meet the evolving needs and expectations of the public (Aladwan & Alshami, 2022; Arokiasamy & Tamah, 2021; Harpy et al., 2022; Mensah, 2020; Ziadi et al., 2016).

Effectiveness and efficiency are pivotal considerations in the evaluation of e-government services. Governments invest substantial resources in digital transformation, and assessing the impact of these investments is crucial for optimising resource allocation and ensuring that electronic governance aligns with its overarching goals. Through a meticulous evaluation, this research aims to unravel the intricate dynamics of e-government services, shedding light on their effectiveness in delivering public services and the efficiency with which these services are executed (Sharma et al., 2021).

The study employs a multifaceted approach to gather comprehensive data for the evaluation. Surveys, user feedback, and system performance metrics contribute to a holistic understanding of the strengths and weaknesses of e-government services. By tapping into the firsthand experiences of users, the research aims to capture the nuances of user satisfaction, identifying areas of improvement and potential areas of excellence (Distel & Lindgren, 2023).

Usability, a cornerstone of e-GovQual, emerges as a critical dimension in this evaluation. The intuitiveness and user-friendliness of digital platforms significantly impact user engagement. A user-friendly interface ensures that citizens, irrespective of their technological proficiency, can seamlessly navigate e-government services. Through an analysis of usability, the research endeavours to highlight areas where user experience can be enhanced, promoting inclusivity and accessibility (Alhanatleh et al., 2022).

Information quality, another dimension within the e-GovQual framework, pertains to the accuracy, relevance, and completeness of information disseminated through e-government channels. Accurate and up-to-date information is paramount for citizens relying on digital platforms for essential services. This research aims to scrutinise information quality, providing recommendations for refining content strategies and ensuring that citizens are well-informed when engaging with e-government services (Al-Sadiq, 2021).

System quality, encompassing the reliability, security, and responsiveness of e-government systems, stands as a linchpin in the evaluation process. Governments must guarantee the integrity and security of data, especially when dealing with sensitive information. By scrutinising system quality, this research aims to assess the robustness of digital infrastructures, identifying vulnerabilities and proposing strategies for fortification (Goloshchapova et al., 2023).

Service interaction, a dimension focusing on the interaction between users and e-government interfaces, is a focal point of evaluation. The ease with which citizens can interact with digital platforms influences their overall satisfaction. Through an in-depth analysis of service interaction, this research aims to elucidate areas where user engagement can be optimised, ultimately contributing to an enhanced user experience (Filgueiras et al., 2019).

User satisfaction serves as a paramount metric in gauging the success of e-government initiatives. By understanding the factors that contribute to user satisfaction, governments can refine their digital strategies, fostering a positive relationship between citizens and electronic governance. This research employs quantitative and qualitative

measures to capture the nuances of user satisfaction, offering a comprehensive perspective on the public's sentiments towards e-government services.

Social Media, Trust, and E-Participation

In the contemporary digital era, the intersection of social media, trust, and e-participation has become a focal point for researchers, policymakers, and governments worldwide. As societies increasingly embrace technology, the dynamics of citizen engagement are undergoing significant transformations, particularly in the context of electronic government (e-government). This study, situated in Nigeria, endeavours to unravel the intricate relationships between openness in public organisations, social media use, trust in e-government, and citizens' engagement in electronic participation (Chen & Aklikokou, 2021).

The phenomenon of e-participation, which refers to citizens' involvement in government activities through digital platforms, has witnessed a surge in relevance and importance. In the Nigerian context, where the digital landscape is rapidly evolving, understanding the drivers and inhibitors of e-participation becomes paramount. This study, therefore, embarks on a nuanced exploration of the factors that shape citizens' willingness to engage electronically with government initiatives (Cordella & Tempini, 2015).

One of the key dimensions under scrutiny is the openness of public organisations. Openness in this context pertains to the transparency, accessibility, and responsiveness of governmental entities. As governments strive to cultivate trust and collaboration with their citizens, the degree of openness becomes a critical factor. The study aims to investigate how the level of openness in public organisations influences citizens' proclivity to participate electronically. It delves into whether citizens are more likely to engage in e-participation when they perceive government entities as transparent, accountable, and accessible through digital channels (MacLean & Titah, 2022).

Social media, a transformative force in contemporary communication, stands as another pillar of this research. With platforms like Facebook, Twitter, and Instagram shaping the landscape of information dissemination, understanding the role of social media in e-participation is imperative. The study seeks to uncover how citizens' use of social media correlates with their engagement in electronic participation. It examines whether individuals who are active on social media platforms are more inclined to participate in e-government initiatives and how these platforms serve as conduits for civic dialogue and collaboration (Dhaoui, 2022).

Trust, as a mediating factor, assumes a central role in this study. Trust in e-government is a nuanced concept, encompassing citizens' confidence in the reliability, integrity, and benevolence of governmental digital initiatives. The research investigates how trust acts as a mediator between openness in public organisations, social media use, and citizens' engagement in e-participation. By exploring the intricate interplay between these variables, the study aims to unveil the mechanisms through which trust influences citizens' decisions to actively participate in electronic governance.

Nigeria, as the contextual backdrop of this study, offers a unique perspective on the challenges and opportunities associated with e-participation. The country, with its diverse population and evolving digital landscape, serves as a microcosm for understanding the broader implications of the intersection between social media, trust, and e-participation. The findings of this research can potentially inform governmental strategies, policies, and digital communication initiatives in Nigeria and beyond.

The research methodology employed encompasses a mix of quantitative and qualitative approaches. Surveys, interviews, and content analyses of social media interactions form the crux of data collection. The quantitative aspect involves the measurement of variables such as the level of openness, social media usage patterns, trust in e-government, and the extent of citizens' engagement in electronic participation. Simultaneously, qualitative insights derived from interviews and content analyses provide a deeper understanding of the motivations, perceptions, and experiences that underpin these quantitative findings.

E-Government Quality

In the contemporary landscape of public administration, the quality of e-government services plays a pivotal role in shaping citizens' interactions with governmental digital platforms. This study, set against the backdrop of Indonesia, endeavours to delve into the antecedents of e-government quality and their profound impact on public behaviour intention. At its core, the research is poised to employ the extended expectation-confirmation theory, a theoretical framework that elucidates the factors influencing citizens' perceptions and behaviours in the realm of e-government (Rukanova et al., 2023).

E-government, a transformative force in the digital era, refers to the use of electronic platforms and technologies to facilitate the delivery of government services to citizens. The quality of these services, encompassing aspects such as efficiency, accessibility, and user-friendliness, holds paramount importance in determining citizens' satisfaction and engagement. Understanding the antecedents that contribute to the quality of e-government becomes imperative for governments seeking to enhance their digital governance initiatives (Apleni & Smuts, 2022; Arayankalam et al., 2020; Jauhari et al., 2020; S. Khan et al., 2020; Mensah, 2020; Septiani et al., 2022; Tadrin & Sulmiah, 2022; Umbach & Tkalec, 2022; Yera et al., 2020).

The extended expectation-confirmation theory, an extension of the original expectation-confirmation theory, provides a robust framework for comprehending user satisfaction and subsequent behaviours in the context of e-services. At its essence, the theory posits that users' satisfaction is contingent upon the confirmation of their expectations and perceptions, which, in turn, influences their intention to continue using the service. Applied to e-government quality, this theory becomes a lens through which the factors shaping citizens' expectations, perceptions, and subsequent behaviours can be systematically examined.

One of the key facets explored in this study is the antecedent factors influencing e-government quality. Antecedents, in this context, refer to the precursors or determinants

that contribute to the overall quality of e-government services. This could encompass technological factors, organisational factors, and even sociodemographic factors that influence how citizens perceive and experience digital government services. Through an exhaustive exploration of these antecedents, the study seeks to unravel the intricacies of what makes e-government services effective, efficient, and user-centric.

Moreover, the research aims to dissect the impact of e-government quality on public behaviour intention. Public behaviour intention encompasses the myriad ways in which citizens interact with and utilise e-government services. It could include the intention to use digital platforms for accessing government information, engaging in online transactions, or participating in electronic governance initiatives. By scrutinising how e-government quality influences citizens' intention to engage in these behaviours, the study sheds light on the transformative potential of well-designed and well-implemented digital governance services.

Indonesia, with its diverse population and evolving digital infrastructure, serves as a rich context for this research. The findings derived from this study can potentially inform Indonesian policymakers, government agencies, and stakeholders about the critical determinants of e-government quality and their cascading effects on citizens' behaviours. The implications of this research extend beyond the Indonesian landscape, resonating with global efforts to harness the potential of e-government in fostering transparent, efficient, and citizen-centric governance.

The methodology adopted for this study integrates both quantitative and qualitative approaches. Surveys, interviews, and content analyses constitute the primary methods for data collection. The quantitative arm involves the measurement of variables such as citizens' expectations, perceptions of e-government quality, and their subsequent behaviours. Simultaneously, qualitative insights derived from interviews and content analyses offer a nuanced understanding of the contextual factors that underpin the quantitative findings.

Conclusion

The research has illuminated several key aspects of e-government, spanning the evaluation of e-government services, the influence of social media and trust on e-participation in Nigeria, and the exploration of e-government quality in Indonesia.

The temporal analysis, as depicted in Figure 2, illustrates a progressive increase in research articles over the years, signalling a growing scholarly interest in the role of e-government in public services. The surge in publications since 2019 suggests an evolving significance of e-government, reflecting a turning point in academic exploration. Figure 3 further emphasizes the diversity of research outlets contributing to this discourse, with varying levels of representation across different journals. The global distribution of research in Figure 4 underscores the unique focus of each country, reflecting the diverse challenges and opportunities faced in adopting and advancing e-government services. Lastly, the keyword analysis in Figure 5 provides a comprehensive overview of the

thematic areas and methodologies employed in e-government research, revealing a multifaceted landscape.

The first study, centred on e-government evaluation in Indonesia, aims to unravel the dimensions of e-government service quality using the e-GovQual framework. The research focuses on usability, information quality, system quality, service interaction, and overall user satisfaction. The evaluation is crucial for optimising resource allocation, enhancing user experiences, and understanding citizens' perceptions. The methodology, comprising surveys, user feedback, and system metrics, ensures a holistic understanding of e-government effectiveness and efficiency.

The second study, conducted in Nigeria, explores the intersection of social media, trust, and e-participation. The research investigates how openness in public organisations, social media use, and trust mediate citizens' engagement in e-participation. The study is grounded in Nigeria's evolving digital landscape, aiming to inform governmental strategies and policies. The methodology combines surveys, interviews, and content analysis to capture both quantitative and qualitative insights.

The third study, situated in Indonesia, delves into the antecedents of e-government quality and their impact on public behaviour intention. Employing the extended expectation-confirmation theory, the research examines the factors shaping citizens' expectations, perceptions, and behaviours in the e-government context. The study addresses technological, organisational, and sociodemographic antecedents, contributing to a nuanced understanding of effective, efficient, and user-centric e-government services. The methodology integrates surveys, interviews, and content analyses for a comprehensive exploration.

In essence, these studies collectively contribute to advancing the understanding of e-government dynamics, offering insights for policymakers, researchers, and practitioners. The findings are expected to guide the enhancement of e-government services, foster citizen engagement, and contribute to the global discourse on effective digital governance. The diverse methodologies employed across these studies ensure a robust and multifaceted exploration of e-government, reflecting the complexity of this evolving field.

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