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Bibliometric Analysis of E-Government Adoption in West Africa: A Review of Scholarly Trends and Perspectives from 2007 to 2023

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Abstract

E-government adoption in West Africa is a critical area of research due to the transformative potential of ICT in enhancing governance, improving service delivery, and fostering citizen engagement. Despite these opportunities, many West African countries face significant challenges, including infrastructure deficits, data security concerns, and digital literacy issues. To understand the scholarly trends and perspectives in this field, a comprehensive bibliometric analysis was conducted, covering publications from 2007 to 2023. The methodology involved using Scopus database to retrieve peer-reviewed articles, conference papers, and other relevant publications. Keyword searches related to E-government adoption and West Africa were employed for data retrieval. The analysis focused on publication trends, citation counts to identify influential articles, thematic analysis to explore popular themes, and the identification of influential authors and relevant publication sources. The major findings indicate a significant increase in publication rates in recent years, reflecting growing academic interest in E-government adoption in West Africa. The study identified the most influential articles based on citation counts, revealing key contributions to the field. Popular themes include developing countries, government data processing, and information services, highlighting the diverse areas of scholarly inquiry. Influential authors and relevant publication sources were also identified, providing insights into the key contributors and outlets in this research area. Further research is recommended to explore broader geographical regions and to make use of other databases, such as Web of Science and PubMed, to uncover more comprehensive trends and patterns. This research contributes to the existing literature by offering a bibliometric analysis of publications on E-government adoption in West Africa, highlighting key trends, influential works, and research priorities.

Keywords: E-Government Adoption (EGA), E-Government Implementation, Bibliometric Study, West Africa, Developing Countries.

Introduction

E-government adoption (EGA) in West Africa is becoming more relevant recently, driven by the recognition of ICT's transformative potential in governance. However, many countries, including those in West Africa, face challenges in embracing E-government (Endong, 2020; Khan et al., 2021). Several factors motivate EGA in West Africa, including the region's youthful population, increasing Internet penetration, and the need to enhance citizen engagement and administrative efficiency (Mensah, Cater-Steel, & Toleman, 2021). The global trend towards digitalization and mobile technology proliferation further motivates E-government initiatives, offering innovative service delivery models (Endong, 2020; Hasson & Mahmoud, 2021). Despite opportunities, EGA faces significant challenges such as infrastructure deficits, data security concerns, and digital literacy issues. Collaboration with regional organizations like ECOWAS and international partners is essential for prioritizing E-government strategies and effectively addressing these challenges (Endong, 2020). As West Africa progresses towards digital transformation, successful EGA becomes essential for inclusive development, democratic governance, and improved public service delivery across the region (Arwati & Latif, 2021; Kumar, Dev, & Saha, 2024).

Understanding research trends and patterns in EGA research plays a crucial role in informing policy and decision-making processes in E-government initiatives. By analysing these trends, policymakers can identify successful strategies, best practices, and areas needing improvement, leading to evidence-based policies that enhance governance, improve service delivery, and foster digital inclusion (Arwati & Latif, 2021). Moreover, EGA helps identify emerging technologies and innovations with the potential to transform governance processes and public service delivery (Cho, 2024). By tracking trends in EGA, policymakers can anticipate future challenges and opportunities, allowing for proactive planning and investment in relevant technologies (Hasson & Mahmoud, 2021; Meiyanti, Utomo, Sensuse, & Wahyuni, 2019). Similarly, stakeholders can evaluate the impact and effectiveness of existing E-government initiatives by analysing trends and patterns in the research. Key indicators such as citizen satisfaction, service efficiency, and cost savings provide insights for assessing outcomes and identifying areas for improvement (Endong, 2020; Meiyanti et al., 2019).

Understanding trends in EGA also supports capacity building and knowledge sharing among stakeholders. By disseminating research findings and facilitating collaborative learning platforms, policymakers, practitioners, and researchers can exchange knowledge, share experiences, and build capacity to address common challenges in E-government implementation (Bolívar, Muñoz, & López Hernández, 2010). Research trends and patterns also offer insights into collaborative opportunities and partnerships in EGA and implementation. By identifying key stakeholders, networks, and funding sources, researchers can collaborate to address complex challenges and achieve common goals (Ibrahim & Nurmandi, 2023).

Research Questions

The following research questions were formulated with regards to publications on E-government adoption in West Africa:

a. What is the current publication trend?
b. Which are the most influential articles?
c. Which themes are the most popular among scholars?

d. Who are the most influential authors?
e. What are the most relevant sources?

Objectives of the study

Based on the research questions, the following research objectives were considered:

a. To analyse the trends in publications related to E-government adoption in West Africa.
b. To identify the highly influential publications within the E-government adoption field based on citation count.
c. To analyse content of the scholarly publications within the E-government adoption domain by conducting a thematic analysis.
d. To identify most influential authors in the research field within the period under review based on number of publications.
e. To identify the most influential publication sources based on their publication count.

This study used bibliometric analysis to examine the literature on E-government adoption in West Africa. Bibliometrics provides a systematic and quantitative method for evaluating scholarly trends, citation patterns, and thematic clusters (Ibrahim & Nurmandi, 2023). The dataset includes peer-reviewed articles, conference papers, and other relevant publications obtained from Scopus database. Keyword searches related to E-government adoption and West Africa ensure a comprehensive retrieval of relevant literature.

Literature Review

E-government adoption (EGA) refers to the integration and utilization of digital technologies by government agencies to enhance the delivery of public services, improve governance processes, and foster citizen engagement. This transition entails digitizing government operations, communication channels, and service delivery mechanisms, thereby enhancing efficiency, transparency, and accessibility for citizens (Mensah et al., 2021). It involves the digital transformation of government processes and services. This includes migrating paper-based processes to digital platforms, automating administrative tasks, and implementing electronic workflows to streamline operations (Tikhomirova, 2020). One of the primary objectives of EGA is to improve the delivery of public services to citizens. Through online portals and mobile applications, citizens can access government services conveniently from anywhere and at any time. Common services offered through E-government platforms include applying for permits and licenses, paying taxes, and accessing healthcare information (Agbozo & Medvedev, 2020).

E-government initiatives aim to enhance transparency and accountability in government operations (Kariuki, Adeleke, & Ofusori, 2020). Furthermore, EGA facilitates greater citizen engagement in governance processes. Through online forums, social media channels, and interactive platforms, citizens can provide feedback, participate in discussions, and collaborate with government agencies on policy development and decision-making. This enhances public participation in democratic processes and fosters a sense of ownership and trust in government institutions (Tikhomirova, 2020). Digitalization of government processes results in increased efficiency and cost savings (Meiyanti et al., 2019). Also, EGA seeks to address digital divide issues by promoting digital inclusion and accessibility (Endong, 2020).
To illustrate the best practices and impact of EGA in West Africa, this paper reviews the implementation of E-government in Cape Verde. The country was selected due to its

consistent high ranking in the E-government Development Index (EGDI) across nine consecutive surveys (UN-DESA, 2003, 2004, 2005, 2008, 2010, 2012, 2014, 2016, 2018). Based on the country's E-government initiatives, over 600 public institutions and 12,000 civil servants are now connected through a single state network. More than 80 applications have been developed for various sectors such as health, education, business, environment, justice, public administration, and local administration, significantly improving public services in the country. Additionally, 32 Video Conferencing Rooms have been set up across the nation, and 9 islands are now interconnected and connected to the globe (Fernandes, 2018). Table 1 summarises the various E-government initiatives and their impacts to the citizens.

Table 1
List of E-government initiatives by Cape Verde

Initiative	Description/impact
KONECTA	Provides 112 digital squares with free Internet access and mobile E-government applications.
RNI	Digitalizes citizens' identification records for up to 100 years, supporting the entire state database.
SIGE	Manages schools and academic activities, enhancing communication between teachers, parents, and students.
SIGOF	An excellent tool for government budgetary and financial management.
SIM	Covers all areas of local administration.
SIS	Manages hospitals and healthcare centres, improving patient care, saving time, and promoting telemedicine.
Citizen's House	Established to showcase all E-government solutions in the country, including electronic payments, digital certificate applications, and electronic passports.

Despite the successes recorded in Cape Verde, many West African Countries face a lot of challenges in E-government adoption. These include infrastructure deficits, data security concerns, and digital literacy issues. Firstly, on Infrastructure Deficits, West African countries have limited Internet access, outdated equipment, and inconsistent power supply, which hinder technological deployment, particularly in rural and developing areas. The recommendation on this challenge is for the countries to invest in expanding high-speed Internet, regularly upgrade technology, and promote alternative power solutions like solar energy and backup generators (Brookings, 2015; W3Foundation, 2022). Secondly, on Data Security Concerns, the challenges include increasing cyberattacks, lack of awareness about data security, and the complexity of regulatory compliance. It is recommended that the West African countries should implement advanced cybersecurity measures, conduct regular training on best practices, and use compliance management tools to stay updated on regulations (WorldBank, 2024). Thirdly, on Digital Literacy Issues, the challenges include educational gaps, limited access to training, and resistance to adopting new technologies, which prevent full participation in the digital economy. It is recommended that the countries should develop inclusive education programs, create accessible training resource, and implement strategists to overcome cultural resistance by demonstrating benefits of technology and providing user-friendly interfaces (Deloitte).

Methodology

Bibliometric analysis is a powerful technique used to study publication trends within specific research domains, such as E-government adoption. This approach involves quantitatively evaluating scholarly literature to identify patterns, influential works, and emerging themes. By systematically analysing factors like publication rates, citation counts, and thematic clusters, researchers can gain valuable insights into the evolution of research in their field. Bibliometric analysis provides a comprehensive understanding of the scholarly landscape, informing evidence-based policymaking and guiding future research directions (Aidi Ahmi, 2019).

The dataset used for the analysis consists of peer-reviewed articles, conference proceedings, and other relevant publications sourced from the Scopus database. Keywords related to EGA and West Africa were used for record retrieval, ensuring comprehensive coverage of the relevant literature. Biblioshiny software was used for data analyses purpose. Using the software, the variables analysed were publication trends, influential articles, popular themes, and influential authors (Aria & Cuccurullo, 2017). The software has been used to generate tables and figures in the results section, except Figure 3, which was generated using Word Cloud (WordCloud, 2024).

The search fields that were used are Article Title, Abstract, and Keywords. The time frame was the year 2007 to 2023. Only those publications in English language were used, and source/document type was “All”. The keywords and search string focused on identifying relevant publications on EGA in West Africa and its constituent countries. The search string used Boolean operators to combine terms related to E-government, adoption, and West African countries. The data was extracted on April 23, 2024. Exclusion criteria was used to ensure extraction of relevant publications only. Language wise, any publication that is not in English language was excluded. Similarly, those publications before the year 2007 and those publications after the year 2023 were also excluded from the analyses (Figure 1).

Topic, Scope, and Eligibility	Topic	E-government Adoption in West Africa
	Scope & Coverage	Database: Scopus Search Field: Article Title, Abstract and Keywords Time Frame: 2007-2023 Language: English Source Type: All Document Type: All
	Keywords & Search String	TITLE-ABS-KEY (("E-government" OR "Electronic Government" OR "Digital Government") AND (adoption OR acceptance OR implementation) AND ("West Africa" OR "Western Africa" OR "Benin" OR "Burkina Faso" OR "Cape Verde" OR "Cote d'ivoire" OR "Gambia" OR "Ghana" OR "Guinea" OR "Guinea-Bissau" OR "Liberia" OR "Mali" OR "Mauritania" OR "Niger" OR "Nigeria" OR "Senegal" OR "Sierra Leone" OR "Togo")) AND PUBYEAR > 2006 AND PUBYEAR < 2024
Screening	Date Extracted	23rd April 2024
	Record Identified & Screened	n = 94
Included	Record Removed	n = 0
	Record Included for Bibliometric Analysis	n = 94

Figure 1. Flow diagram of the search strategy
(Adopted from (Aidi Ahmi, 2019))

Results and Discussions

Overview of publication trends from 2007 to 2023

The publication trends analysed the record based on number of publications recorded each year (Table 2).

Table 2
Annual publication trends

Year	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Publications	2	2	2	2	4	4	3	6	6	10	6	4	11	12	3	9	8

Table 2 showcases annual publication trends in the field of E-government adoption in West Africa, based on total number of publications per year. The period of 2007-2010 shows consistent low output with 2 publications per year. 2011-2015 was a growth phase, increasing from 4 to 6 publications annually, despite a slight depreciation in 2013. 2016-2019 had fluctuations, peaking at 10 in 2016, dropping to 6 in 2017 and to 4 in 2018, then surging to 11 publications in 2019. 2020-2023 recorded highest output with 12 in 2020; though there was a sharp decline in 2021 during which only 3 publications were recorded, then there was recovery in 2022 to 2023 with 9 and 8 publications respectively.

Identification of Most Influential Publications Based on Citation Counts

In this study, citation count was used as a criterion to identify the most influential publications. Accordingly, ten (10) most influential articles based on citation counts are presented in Table 3.

Table 3.
Most influential articles

Publication Title	Author(s)	Total Citations
Assessing Citizen Adoption of E-Government Initiatives in Gambia: A Validation of the Technology Acceptance Model in Information Systems Success	Lin, Fofanah, and Liang (2011)	287
Risk Factors in E-Justice Information Systems	Rosa, Teixeira, and Pinto (2013)	46
The Readiness of Universities in Managing Electronic Records: A Study of Three Federal Universities in Nigeria	Eze Asogwa (2013)	41
The Role of Institutions in ICT Innovation: Learning from Interventions in a Nigerian E-Government Initiative	McGrath and Maiye (2010)	29
Implementing E-government in Lagos State: Understanding the Impact of Cultural Perceptions and Working Practices	Choudrie, Zamani, Umeoji, and Emmanuel (2017)	18
Institutional Barriers to Digitalization of Government Budgeting in Developing Countries: A Case Study of Ghana	Effah and Nuhu (2017)	17
Empirical Study of the Readiness of Public Servants on the Adoption of E-Government	Olatubosun and Rao (2012)	16
Evaluation of the Implementation of Electronic Government in Ghana	Adu, Patrick, Park, and Adjei (2018)	16
An Empirical Investigation of Factors Influencing Integrated E-government Implementation in Nigeria: A Case of Housing and Urban Development Agency	Olumoye and Govender (2018)	16
The Dynamics of E-government Enactment in a Developing Country Public Sector Organisation: Evidence from Ghana	Amegavi, Bawole, and Buabeng (2018)	14

Table 3 presents most influential publications based on their citation counts. In addition to citation counts, the Table also shows the publications' names, authors, and year of publication. The publication by Lin et al. (2011) has the highest citations count at 282, followed by Rosa et al. (2013) with 46 citations, and Eze Asogwa (2013) with 41 citations. Another notable publication was by McGrath and Maiye (2010), with a citation count of 29. Other publications received less than 19 citations. Figure 2 represents the data in Table 3 diagramatically.

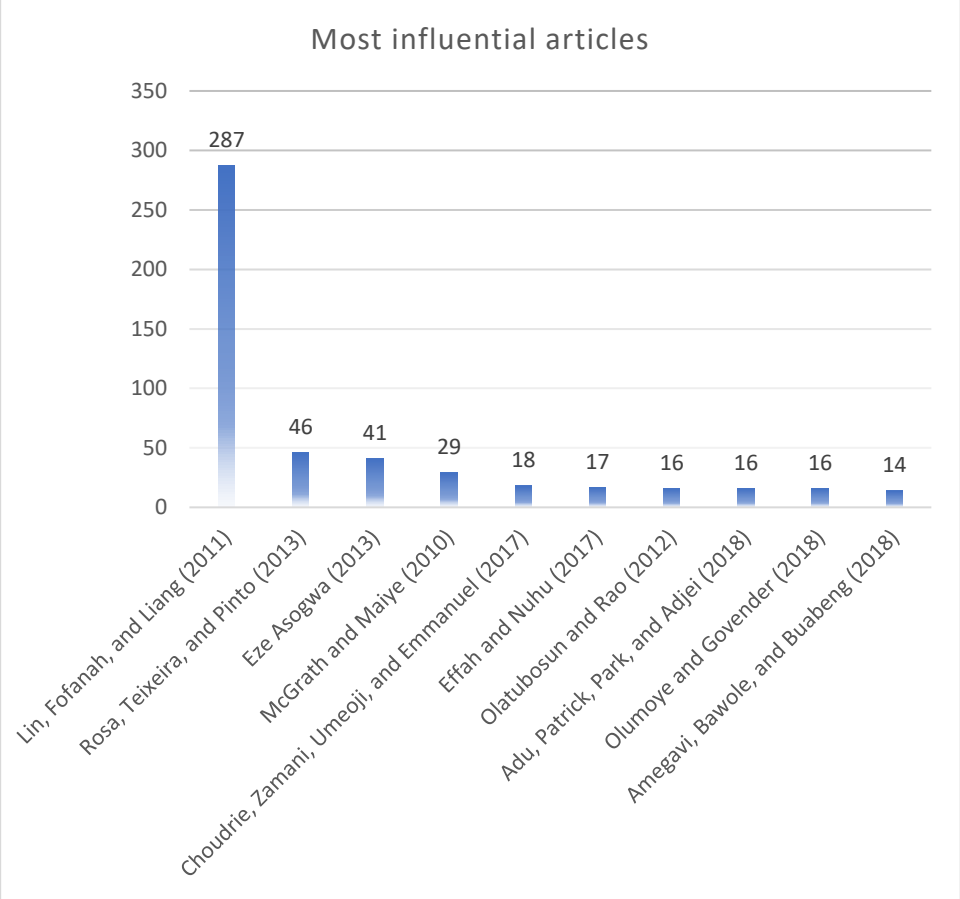

Figure 2. Most influential articles

Analysis of Popular Themes in E-Government Adoption Research

The result shows that ten (10) most popular themes in E-government adoption research in the context of this study were Developing countries, Government data processing, Nigeria, Information services, Ghana, E-Government adoptions, Websites, Information systems, E-Government services, Information and Communication Technologies. The theme 'Developing Countries' appeared 21 times, indicating a primary focus of the research. Government Data Processing had a frequency 21, which emphasizes the importance of efficient data handling in E-government. Nigeria and Ghana were the two major case studies in terms of themes, with frequencies of 20 and 9 respectively. Information Services had a frequency of 10, while Information Systems had 6, which signifies the role of infrastructure on the adoption of E-government. The themes of E-Government Adoptions (7), E-Government Services (5), and Websites (7) focus on the implementation and usage of E-government solutions. Information and Communication Technologies with a frequency of 5, highlights the foundational role of ICT in E-government. The most popular themes are presented using Word cloud in Figure 3.

Figure 3. Word cloud of most popular themes

Identification of Most Influential Authors Based on Publication Counts

Number of publications relevant to this study and indexed in the Scopus database was used as metric to identify the most influential authors. In this context, Ayo, Charles; and Effah, John topped the list with 5 publications each. Boateng, Richard and Faniran, Sanjo ranked second with 4 publications each. Other authors published 3 or less articles (Figure 4).

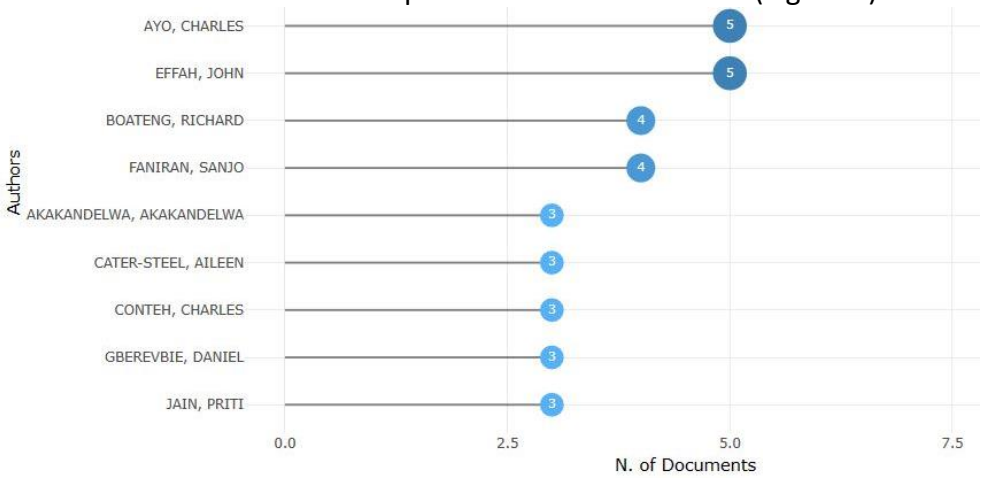

Figure 4. Most influential authors

Identification of Most Relevant Sources

Most relevant sources are extracted based on number of articles published in each source. Therefore, the more the number of articles published in a source, the more relevant it is (Figure 5).

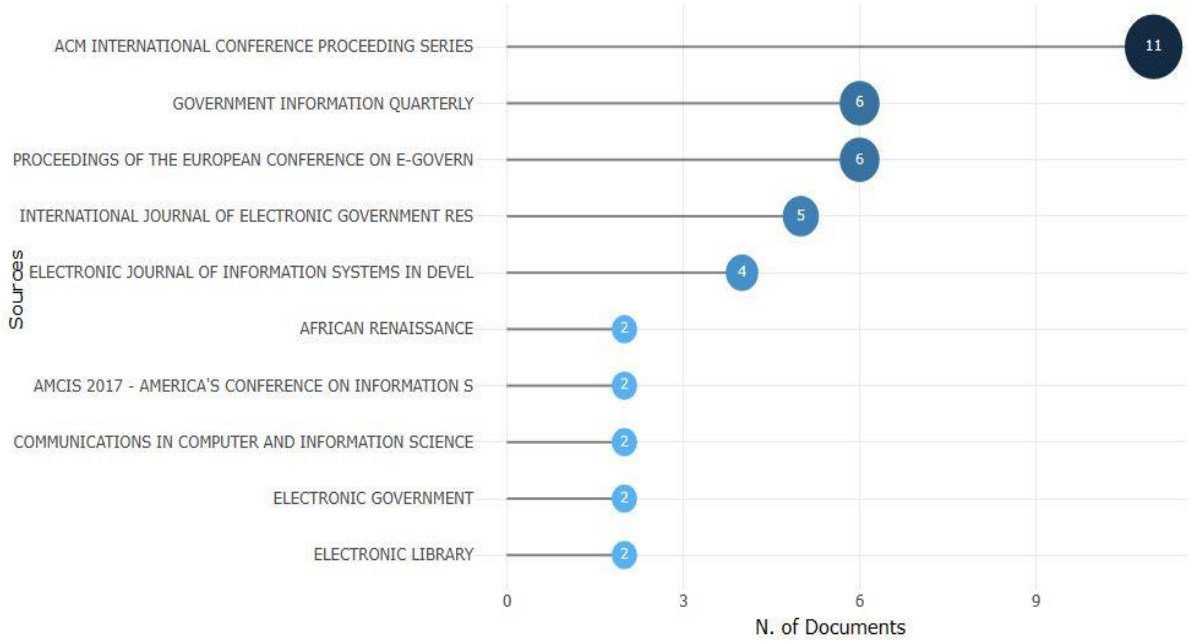

Figure 5. Most relevant sources

Figure 5 shows the most relevant sources of publications within the dataset. ACM International Conference Proceeding Series published 11 articles, which makes it most relevant, and this highlights its importance in E-government adoption research. Government Information Quarterly and Proceedings of the European Conference on E-government published 6 articles each. International Journal of Electronic Government Research published 5 articles, making it relevant for scholarly E-government adoption research and case studies. Electronic Journal of Information Systems in Developing Countries, which focuses on E-government issues in developing regions, had 4 articles. African Renaissance, which highlights African E-government initiatives, and AMCIS2017, which reflects innovations in information systems from the Americas published 2 articles each. Similarly, Communications in Computer and Information Science, Electronic Government and Electronic Library also published 2 articles each.

Conclusion

The analysis of publication trends on E-government adoption research from 2007 to 2023 indicates fluctuations in annual article outputs. Notably, year 2020 saw the highest number of publications, followed by 2019 and 2016, reflecting varying levels of research activity over time. Ten articles stand out as the most influential in the field, based on their citation counts. Works by authors such as Lin et al (2011), Rosa et al (2013), Eze Asogwa (2013), were among those recognized for their significant contributions to E-government adoption research in West Africa. Exploration of popular themes in the E-government adoption research reveals prevalent areas of interest, including Developing countries, Government data processing, Information services. These themes provide valuable insights into the interesting areas of scholarly inquiry within the field. Identifying influential authors based on publication counts highlights the contributions of researchers like Ayo, Charles, and Effah, John, who have made substantial impacts on the literature surrounding E-government adoption in the sub-region. The study also identified the most relevant sources of publications, with ACM International Conference Proceeding Series, Government Information Quarterly, and Proceedings of the

European Conference on E-government (ECEG) emerging as leading outlets for research dissemination in the field.

The paper contributes to academic discourse on E-government adoption research in West Africa by analysing existing literature and discovering relevant trends and patterns therein. Future studies should broaden the scope to explore E-government adoption literature across the entire African continent and other African sub-regions, offering a more comprehensive understanding of regional trends and challenges. The future studies should also consider other databases such as Web of Science and PubMed. By harnessing the insights generated through this bibliometric study, stakeholders can advance the agenda of inclusive and effective E-government adoption in West Africa.

References

Adu, K. K., Patrick, N., Park, E. G., & Adjei, E. (2018). Evaluation of the implementation of electronic government in Ghana. *Information polity, 23*(1), 81-94.

Agbozo, E., & Medvedev, A. N. (2020). Towards a multi-channel service delivery model in the data-driven public sector. *Business Informatics, 14*(1), 41-50. doi:10.17323/2587-814X.2020.1.41.50

Ahmi, R. M. (2019). Bibliometric analysis of global scientific literature on web accessibility. *Nternational Journal of Recent Technology and Engineering (IJRTE), 7*(6), 250-258.

Amegavi, G. B., Bawole, J. N., & Buabeng, T. (2018). The dynamics of e-government enactment in a developing country public sector organisation: evidence from Ghana. *International Journal of Electronic Governance, 10*(1), 74-92.

Aria, M., & Cuccurullo, C. (2017). bibliometrix: An R-tool for comprehensive science mapping analysis. *Journal of informetrics, 11*(4), 959-975.

Arwati, D., & Latif, D. V. (2021). To Investigate the Relationship Between Financial Transparency and Accountability Based on Students Perceptions in Implementation of E Government: A Study on Bandung City, Indonesia. *Review of International Geographical Education Online, 11*(1), 547-551. doi:10.33403/rigeo.800590

Bolívar, M. P. R., Muñoz, L. A., & López Hernández, A. M. (2010). Trends of e-Government research. Contextualization and research opportunities. *International Journal of Digital Accounting Research, 10*, 87-111. doi:10.4192/1577-8517-v10_4

Brookings. (2015). Digital Divide: Improving Internet Access in the Developing

World Through Affordable Services and Diverse Content. Retrieved from https://www.brookings.edu/wp-content/uploads/2016/06/West_Internet-Access.pdf#:~:text=URL%3A%20https%3A%2F%2Fwww.brookings.edu%2Fwp

Cho, A. (2024). The Role of E-Government, Political Will & Accountability in Reducing Corruption in Ghana. *International Journal of Academic Research in Business and Social Sciences, 14(1)*, 358–367. doi:10.6007/IJARBSS/v14-i1/20446

Choudrie, J., Zamani, E. D., Umeoji, E., & Emmanuel, A. (2017). Implementing E-government in Lagos State: Understanding the impact of cultural perceptions and working practices. *Government information quarterly, 34*(4), 646-657.

Deloitte. Addressing Africa's Infrastructure Challenges. Retrieved from https://www2.deloitte.com/content/dam/Deloitte/global/Documents/Energy-and-Resources/dttl-er-power-addressing-africas-infrastructure-challenges.pdf#:~:text=URL%3A%20https%3A%2F%2Fwww2.deloitte.com%2Fcontent%2Fdam%2FDeloitte%2Fglobal%2FDocuments%2FEnergy

Effah, J., & Nuhu, H. (2017). Institutional barriers to digitalization of government budgeting in developing countries: A case study of Ghana. *The Electronic Journal of Information Systems in Developing Countries, 82*(1), 1-17.

Endong, F. P. C. (2020). Prospects and challenges of e-government in Black Africa: A comparative study of Nigeria and Cameroon. In *African Studies: Breakthroughs in Research and Practice* (pp. 662-677).

Asogwa, B. (2013). The readiness of universities in managing electronic records: A study of three federal universities in Nigeria. *The electronic library, 31*(6), 792-807.

Fernandes, A. (Producer). (2018). 20 Years of Building e-Governance in Cape Verde, a presentation by Prof. Antonio Fernandes at e-Governance Academy. Retrieved from https://www.youtube.com/watch?v=ON8zUtJifn4

Hasson, A. R., & Mahmoud, M. A. (2021). Challenges and Opportunities of E-Government Implementation in the Iraqi Ministry of Oil. *Journal of Theoretical and Applied Information Technology, 99*(24), 5804-5823. Retrieved from https://www.scopus.com/inward/record.uri?eid=2-s2.0-85122344527&partnerID=40&md5=e53c06aaac35fe20f29378bea45d1e4c

Ibrahim, A. H., & Nurmandi, A. (2023). Range of Publications for E-Government Services: a Review and Bibliometric Analysis. *Journal of Information Technology Management, 15*(2), 164-182. doi:10.22059/jitm.2022.336969.3000

Kariuki, P., Adeleke, J. A., & Ofusori, L. O. (2020). *The role of open data in enabling fiscal transparency and accountability in municipalities in Africa: South Africa and Nigeria case studies.* Paper presented at the ACM International Conference Proceeding Series.

Khan, A. Z., Mahmood, F., Bokhari, R. H., Mushtaq, R., & Abbas, R. (2021). Challenges of e-government implementation in health sector: a step toward validating a conceptual framework. *Digital policy, regulation and governance, 23*(6), 574-597. doi:10.1108/DPRG-04-2021-0048

Kumar, M., Dev, M., & Saha, D. (2024). *E-Government Maturity, Gender Inequality and Role of Government Effectiveness: A Longitudinal Study Across Countries.* Paper presented at the IFIP Advances in Information and Communication Technology.

Lin, F., Fofanah, S. S., & Liang, D. (2011). Assessing citizen adoption of e-Government initiatives in Gambia: A validation of the technology acceptance model in information systems success. *Government information quarterly, 28*(2), 271-279.

McGrath, K., & Maiye, A. (2010). The role of institutions in ICT innovation: learning from interventions in a Nigerian e-government initiative. *Information Technology for Development, 16*(4), 260-278.

Meiyanti, R., Utomo, B., Sensuse, D. I., & Wahyuni, R. (2019). *E-Government Challenges in Developing Countries: A Literature Review.* Paper presented at the 2018 6th International Conference on Cyber and IT Service Management, CITSM 2018.

Mensah, R., Cater-Steel, A., & Toleman, M. (2021). Factors affecting e-government adoption in Liberia: A practitioner perspective. *Electronic Journal of Information Systems in Developing Countries, 87*(3). doi:10.1002/isd2.12161

Olatubosun, O., & Rao, K. S. M. (2012). Empirical study of the readiness of public servants on the adoption of e-government. *International Journal of Information Systems and Change Management, 6*(1), 17-37. doi:10.1504/IJISCM.2012.050337

Olumoye, M. Y., & Govender, I. (2018). An empirical investigation of factors influencing integrated e-G overnment implementation in Nigeria: A case of housing and urban

development agency. *The Electronic Journal of Information Systems in Developing Countries, 84*(1), e12012.

Rosa, J., Teixeira, C., & Pinto, J. S. (2013). Risk factors in e-justice information systems. *Government information quarterly, 30*(3), 241-256.

Tikhomirova, O. (2020). E-Governance and social inclusion of entrepreneurship and businesses: Toward the social inclusive digital society. *International Journal of E-Entrepreneurship and Innovation, 10*(2), 1-25. doi:10.4018/IJEEI.2020070101

UN-DESA. (2003). United Nations Global E-Government Survey 2003. URL: https://publicadministration.un.org/en/Research/UN-e-Government-Surveys

UN-DESA. (2004). United Nations Global E-Government Readiness Report 2004 - Towards Access for Opportunity. URL: https://publicadministration.un.org/en/Research/UN-e-Government-Surveys.

UN-DESA. (2005). United Nations Global E-Government Readiness Report 2005 – From E-Government to E-Inclusion. URL: https://publicadministration.un.org/en/Research/UN-e-Government-Surveys.

UN-DESA. (2008). United Nations E-Government Survey 2008 – From E-Government to Connected Governance. URL: https://publicadministration.un.org/en/Research/UN-e-Government-Surveys.

UN-DESA. (2010). United Nations E-Government Survey 2010 - Leveraging E-government at a Time of Financial and Economic Crisis. URL: https://publicadministration.un.org/en/Research/UN-e-Government-Surveys.

UN-DESA. (2012). United Nations E-Government Survey 2012 – E-Government for the People. URL: https://publicadministration.un.org/en/Research/UN-e-Government-Surveys.

UN-DESA. (2014). United Nations E-Government Survey 2014 - E-Government for the Future We Want. URL: https://publicadministration.un.org/en/Research/UN-e-Government-Surveys.

UN-DESA. (2016). United Nations E-Government Survey 2016 - E-Government in Support of Sustainable Development. URL: https://publicadministration.un.org/en/Research/UN-e-Government-Surveys.

UN-DESA. (2018). United Nations E-Government Survey 2018 - Gearing E-Government to Support Transformation Towards Sustainable and Resilient Societies. URL: https://publicadministration.un.org/en/Research/UN-e-Government-Surveys.

W3Foundation. (2022). No Connectivity Without Electricity: How a Lack of Power Keeps Millions Offline. Retrieved from https://webfoundation.org/2021/03/no-connectivity-without-electricity-how-a-lack-of-power-keeps-millions-offline/

WordCloud. (2024). Online Word Cloud Generator. Retrieved from https://classic.wordclouds.com/

WorldBank. (2024). Digital Transformation Drives Development in Africa Retrieved from https://www.worldbank.org/en/results/2024/01/18/digital-transformation-drives-development-in-afe-afw-africa