E-ISSN: 2708-4523
P-ISSN: 2708-4515
AJMC 2025; 6(1): 635-641

www.allcommercejournal.com
Received: 17-01-2025
Accepted: 22-02-2025

Shweta Hooda
Bhagat Bhool Singh Mahila Vishwavidalaya, khanpur Kalan, Soniapt, Haryana India

Priyanka
Research Scholar, Bhagat Bhool Singh Mahila Vishwavidalaya, Khanpur Kalan, Soniapt, Haryana India

Corresponding Author:
Shweta Hooda
Bhagat Bhool Singh Mahila Vishwavidalaya, khanpur Kalan, Soniapt, Haryana India

Evolution of E-Government: A visual bibliometric analysis from 2013 to 2023

Shweta Hooda and Priyanka

DOI: https://www.doi.org/10.22271/27084515.2025.v6.i1g.508

Abstract
With the widespread use of ICT in public sector organisations, the field of e-government research has become more prominent. It should be mentioned that e-government research is still in its early stages of development. Its impact on the sudden rise in the number of scholarly articles is substantial. However, bibliometric studies that particularly target e-government research have been few during the last decade. Present study aims to show how bibliometric analysis may be used to examine the literature on e-government thoroughly. We conducted a bibliometric study on 551 papers related to e-government after conducting a scientific search strategy on the Scopus database for the years 2013-2023. Biblioshiny, a web-based application implemented in the R programming language and a component of the Bibliometrix package, was used in the study (Ariaa and Cuccurullo, 2017). The software's process automation helped identify the most important journals, authors, locations, articles, and themes. Policymakers in the e-government sector may find this paper useful for its prospective insights. Because it is bibliometric research, the current inquiry has to adhere to the rules that are common to such investigations. In order to provide a firm conceptual groundwork for future researchers, it would be beneficial to do a thorough evaluation of the relevant literature. Only the Scopus database, with its comprehensive coverage of high-quality journals and structured formats compatible with Bibliometrix, may be used for scientific mapping in this study.

Keywords: E-government, e-government, e-govt., e-govt

Introduction
E-government is a subject of study that encompasses several disciplines and is analysed via various methodologies. The concept of e-government is very recent and continues to undergo development (Dwivedi, 2009) [9]. In a study conducted by Alcaide, Pedro, Bolívar, Jesús, and Herrera (2017), it was found that research on e-government has been seeing consistent development; nevertheless, it has not yet reached the level of maturity. However, the attribute of e-government as a resilient interdisciplinary approach has played a significant role in the proliferation of research in recent years. The body of literature on e-government has seen significant growth as a result of the widespread use of information and communication technology (ICT) in the public sector. This development has garnered considerable interest and attention from academics and researchers globally, leading to a rise in the number of studies published in different channels. Numerous scholars have conducted analyses and evaluations of literature on electronic government, each with distinct objectives. Some studies have examined the topic as a whole (Heeks & Bailur, 2007; Yildiz, 2007) [11, 18], while others have focused on specific areas such as public health (Tursunbayeva, Franco, & Pagliari, 2017) [17] or e-participation. Additionally, research has been conducted on electronic government within specific countries, such as the United States.The aforementioned assessments have the potential to provide a comprehensive analysis of the current state of the art (SOTA) and facilitate a reflective evaluation of the contributions made within a specific research domain (Pedro & Bolívar, 2010) [13]. Given the nascent nature of e-government research, it is essential to conduct a comprehensive longitudinal analysis of existing literature in order to identify research trends and anticipate future advancements in this field. The data may serve as a valuable resource for scholars and policy makers, particularly government institutions, to conduct additional analysis (Bayu, Nandiyanto, Biddinika, & Triawan, 2020) [4].

The domain of electronic government (e-government) derives from a wide range of academic fields and research approaches. The idea of electronic governance is still in its infant stages and is evolving rapidly (Dwivedi, 2009) [9]. According to research carried out by Alcaide, Pedro, Bolívar, Jesús, and Herrera (2017) [13], e-government studies have been gradually progressing; nonetheless, they are still not at maturity stage. Recent years have seen a growth of research on e-government, which is largely attributable to its resilience as an interdisciplinary approach. Because of the broad implementation of ICT in the public sector, the corpus of literature on e-government has grown substantially. Academics and researchers all across the world are very interested in this new development, which has increased the number of papers published on the topic via various channels. The literature on electronic governance has been extensively studied and evaluated by many researchers, all with specific objectives in mind. A few studies have taken a broad look at the subject (Heeks & Bailur, 2007; Yildiz, 2007) [11, 18], but others concentrated in on particular areas like public health (Tursunbayeva, Franco, & Pagliari, 2017) [17] or e-participation. The topic of electronic governance has also been studied in other nations, such the US.The evaluations described earlier might provide a thorough review of the present state of the art (SOTA) and help with a reflective appraisal of the achievements in a particular field of study (Pedro & Bolívar, 2010) [13]. Because e-government research is still in its infancy stages, a thorough longitudinal study of the current literature is necessary to spot patterns in the subject and foresee its potential developments. Academics and policymakers, especially those working for public agencies, may find the data useful for futurate research (Bayu, Nandiyanto, Biddinika, & Triawan, 2020) [4].

In 1969, Pritchard came up with the idea of bibliometrics. He defines bibliometrics as "the application of a variety of mathematical and statistical tools to books and other forms of visual and auditory communication." Bibliometrics offers a wide range of services, including analysis of citations, co-citations, content, text, co-authoring, and keyword co-occurrence (Dias, 2019) [8]. Instead of "bibliometric analysis," some authors referred to it as "info metric." Academicians discover the relationship among different areas, individuals' works, and disciplines using this scientific mapping approach. Bibliographic analysis basically uses classification and visualisation to build the framework of a scientific field. Scientific aspects of production, such the amount of articles produced and papers with many citations, were the primary focus of bibliometric analysis, often called "citation analysis." One traditional method of bibliometric analysis is citation analysis, which measures the impact of prior research and the work of specific institutions.

Literature review

Dwivedi (2009) [9] combed through 41 e-government articles published in 2007 and 2008 in the journal “Transforming Government: People, Process and Policy” (TGPPP). The findings that were derived from a profile strategy, showed that the most common study methodologies were descriptive, conceptual, theoretical, and analytical. It was additionally found that those with backgrounds in information systems, IT, computer science, and business contributed the most, followed by those with experience in information technology.

Erman and Todorovski (2010) [10] performed research using bibliographic data from 433 papers published in the proceedings of the International Conference on e-Government (EGOV) from 2002 to 2009. The researcher conducted a social network analysis to examine the level of collaboration within the EGOV group. The results showed that different regions with highly prominent authors and common study topics formed distinct sub-communities within the EGOV group.

Cheng and Ding (2012) [7] utilised the Web of Science database to evaluate a bibliometric study of 2232 articles from academic journals published between 2000 and 2012.The scholarly literature on e-government was combed through for trends and patterns, and key writers and papers were identified. According to their findings, the design of security infrastructure, performance evaluation, e-government development, and cross-sector cooperation, were the top four areas of e-government study.

Przeybilovicz *et al*. (2014) [14] carried out a bibliometric evaluation of 124 Brazilian studies spanning 2007-2012. The researcher identified e-governance, e-digital inclusion, e-administration, and e-participation, among other things. Brazilian academics have desired a need to see more collaboration, a stronger emphasis on citing theory in support of findings, and increased publication efforts in prestigious international journals.

Evaluated the 826 articles for bibliometric analysis published from 2000 to 2012. The researcher concluded that the most prevalent studies were those that focused on various aspects of e-government, especially the evaluation of e-government initiatives, online public services, new technologies and management procedures and information disclosure and accountability, and, using a variety of scientometric methods.

Muñoz *et al*. (2017) [12] in their study looked at the evolution of e-government research topics via a scientific mapping technique. A bibliometric study, which included a keyword analysis, was undertaken out on 8094 research papers opted for between 2000 and 2016. Researchers found that the domain of e-government, particularly in areas such as e-participation and citizen acceptance adoption, is in its early phase and has not yet achieved a stable, mature state.

Dias (2019) [8] executed a bibliometric study on 1129 papers published in the Scopus database from 2003 to 2017. The research found that e-government publications are becoming more popular in Ibero-American nations, and that by classifying them into four groups leading, expectant, evolving, and emerging differences between the various national groupings were revealed. One possible answer for this disparity is the present state of public policy, particularly in areas like research support and the growth of e-government

Ajibade & Mutula (2019) [1] combed through WOS, Scopus, and Harzing data to identify the e-government citation patterns in southern African states. After going through 4861 articles, the researcher came to the conclusion that two main things were completely ignored: the service-orientated design of portals of e-government and the integration of IT alignment, both of which are mandatory for e-government deployment. Results of the study also indicate that a people-centric and interactive public governing platform has not been properly evaluated in South African e-governance studies.

Research Methodology

The Scopus® database served as the main data source for the publications examined in this research. The researcher chose Scopus® over other sources because it facilitates a larger sample size by providing more items that meet the provided search parameters. The articles were retrieved from the database on January 21, 2023, via its online search engine. Any publication with the title, abstract, or keywords including "e-government," "e-gov", "egovernment", or "egov" was considered for inclusion in the search.

(Tital-ABS-Key ({e-government}) or Tital-ABS-Key ({e-gov)} or Tital-ABS-Key ({egovernment)} or Tital-ABS-KEY ({egov)} or Tital-Abs-Key and Pubyear>2013 Pubyear <2023

Researchers employed bibliometric methods to analyse 551 papers. The present state of knowledge progress in the field of e-government was investigated through descriptive analysis to identify patterns and trends.

Data analysis and findings

The main goal of descriptive analysis is to examine bibliometric data by considering fundamental characteristics of the dataset, including (1) sources/journals, (2) authors, and (3) documents.

Data Set

The bibliometric data set, which includes 551 articles chosen by a systematic search query on the Scopus database, is summarised in Table 1. The aforementioned articles had 2.79 co-authors per document and were published in 275 different sources, yielding an average citation score of 10.58. These figures suggest a significant level of study conducted in the past, with notable collaboration among scholars.

Table 1: Summarizes the bibliometric dataset of 551 articles, showing an average of 2.79 co-authors per document, published across 275 sources, with an average citation score of 10.58, indicating strong collaboration and research activity.

Description	Results
Main Information About Data	
Timespan	2013:2023
Sources (Journals, Books, etc)	275
Documents	551
Annual Growth Rate%	-29.61
Document Average Age	5.55
Average citations per doc	10.58
References	23921
Document contents	
Keywords Plus (ID)	1758
Author's Keywords (DE)	1503
Authors	
Authors	1265
Authors of single-authored docs	79
Authors collaboration	
Single-authored docs	90
Co-Authors per Doc	2.79
International co-authorships%	23.23
Document types	
article	292
conference paper	243
review	16

Three Field plot

This plot is also referred to as the Sankey plot. The relationship between three distinct domains is illustrated in these plots, where the magnitude of each segment in the plot is directly proportional to the value of the node. Figure 1 displays authors on the left, keywords in the central panel, and countries on the right. Figure 1 illustrates ten primary keywords, including "e-government", "electronic government", "trust," "digital government", "ICT", "adoption", "e-government services", and "digital divide", as well as the names of the authors and their respective countries.

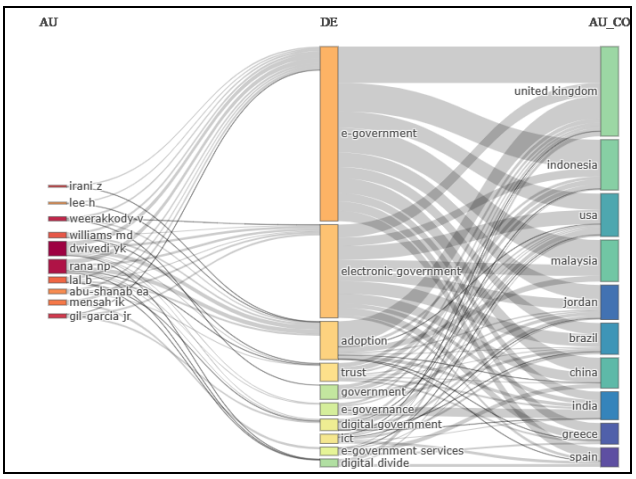

Fig 1: A Sankey plot illustrating the relationships among key authors, keywords, and countries in e-government research

Figure 2 displays the 10 most-cited journals, which are a good indicator of the quality of journals in the subject. According to figure 2, ACM International conference proceedings series has granted the highest number of citations, while electronic government as the most influential source. Upon closer examination of these journals, it becomes apparent that the bulk of the literature pertaining to e-government is predominantly situated within the fields of Public administration, computer science, as well as political science.

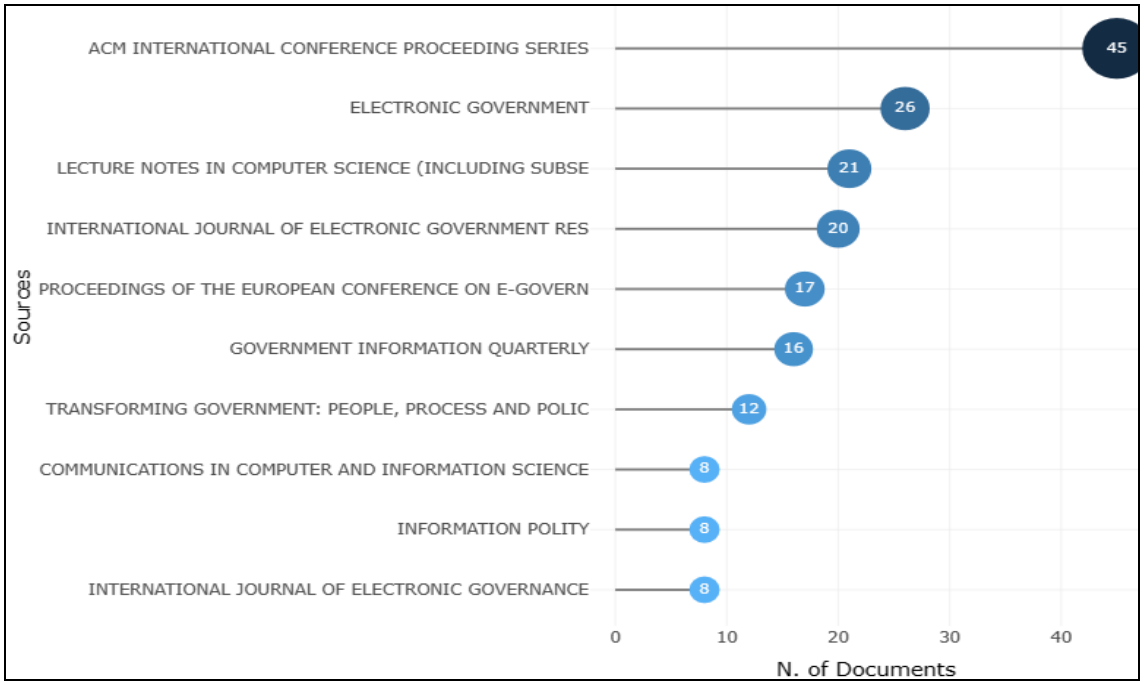

Fig 2: Displays the ten most-cited journals in e-government, highlighting the ACM international conference proceedings series as the most cited

Figure 3 depicts the 10 most influential academic publications in the subject, as measured by H-index. The maximum value of an H-index is "n", where n is the total number of papers with at least n citations published in journals. There is no one metric that can be used to judge a journal importance in a subject, not even the number of papers published or the number of citations it has received. The h-index may be a more accurate measure of a journal's significance and influence.

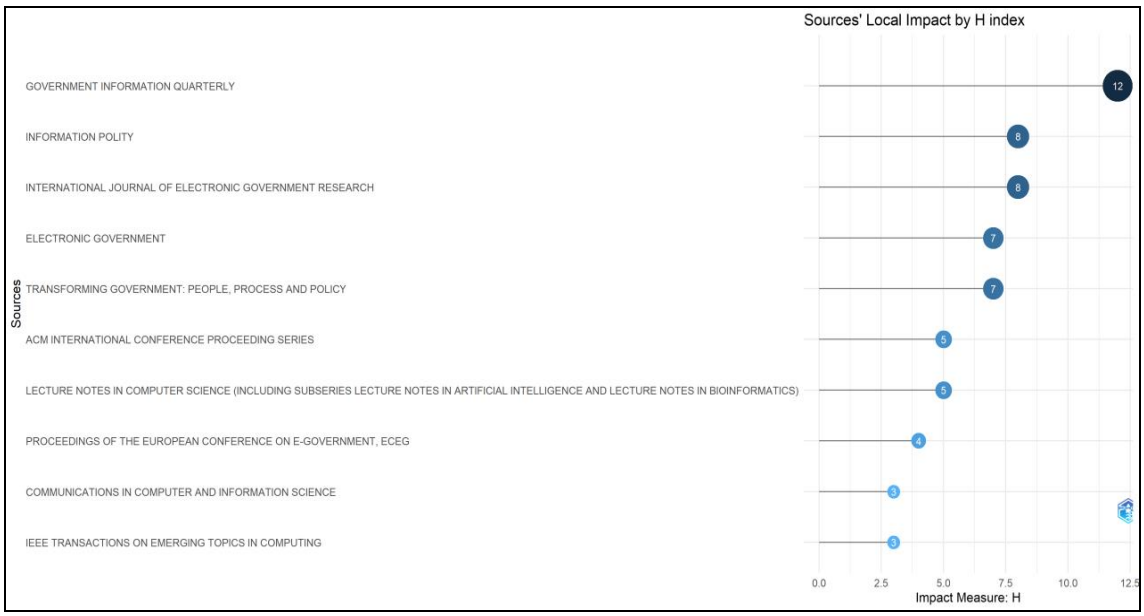

Fig 3: Shows the ten most influential academic publications ranked by H-index, indicating their impact in the field

Locally estimated scatter plot (Figure 4) smoothing was utilised to show the publication volume trends of the top five journals throughout time. The data shows that publication rates for the conference proceedings series and electronic journal have been rising, whereas publications rates for other journals have been constant since 2019.

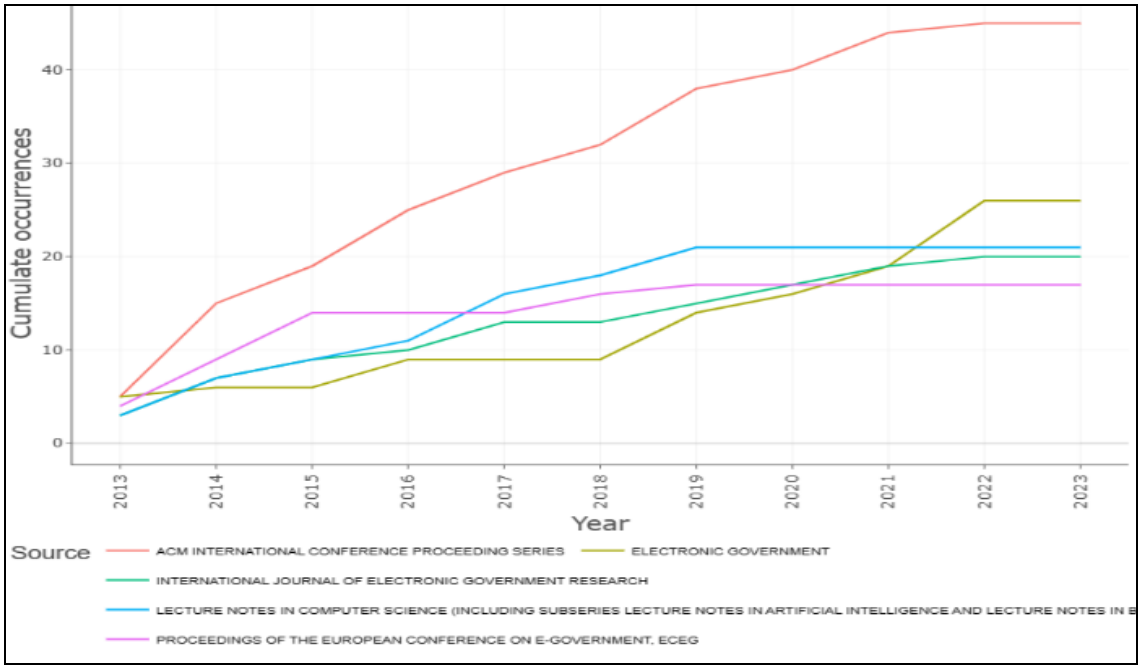

Fig 4: A scatter plot depicting publication volume trends for the top five journals over time, revealing rising rates for certain journals

Most of the publications (Figure 5) in this field were written by Rana np, Dwivedi.yk, weerakkodyv, Gil-garciaJR etc. in this field, 15 articles were written by Rana np, Dwivedi vk. Furthermore, the writers h index also indicated that Rana np, Dwivedi vk were the most influential author on this area. From the standpoint of future studying this area, these papers were crucial.

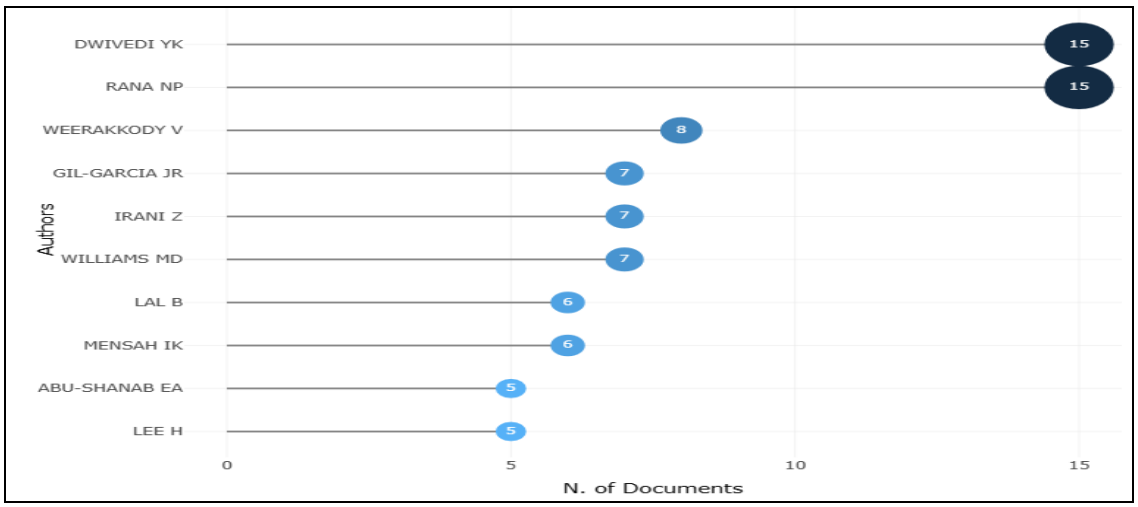

Fig 5: Highlights the most prolific authors in e-government research, with Rana NP and Dwivedi YK as key contributors

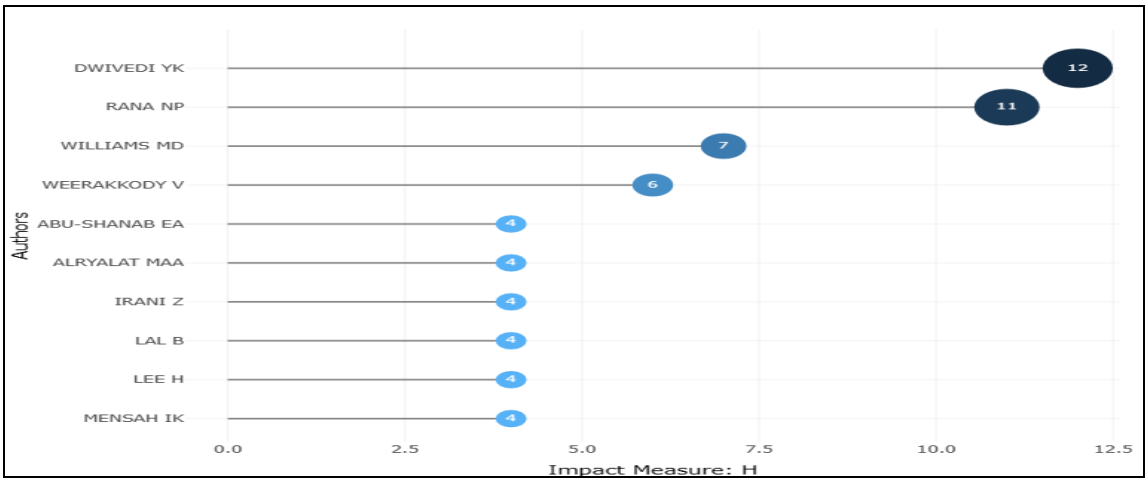

Fig 6: Description missing, please provide content for figure 6 if needed

Documents

Figure 7 exhibits the 10 most referenced publications in the subject. Each of these pieces has been cited more than a hundred times. Dwivedi YK has made a crucial contribution to the area. The two most-cited works in the discipline were by Dwivedi YK (2017, 551 citations) and by Janssen M (2013, 500 citations). These highly-cited pieces serve as essential resources for their respective fields.

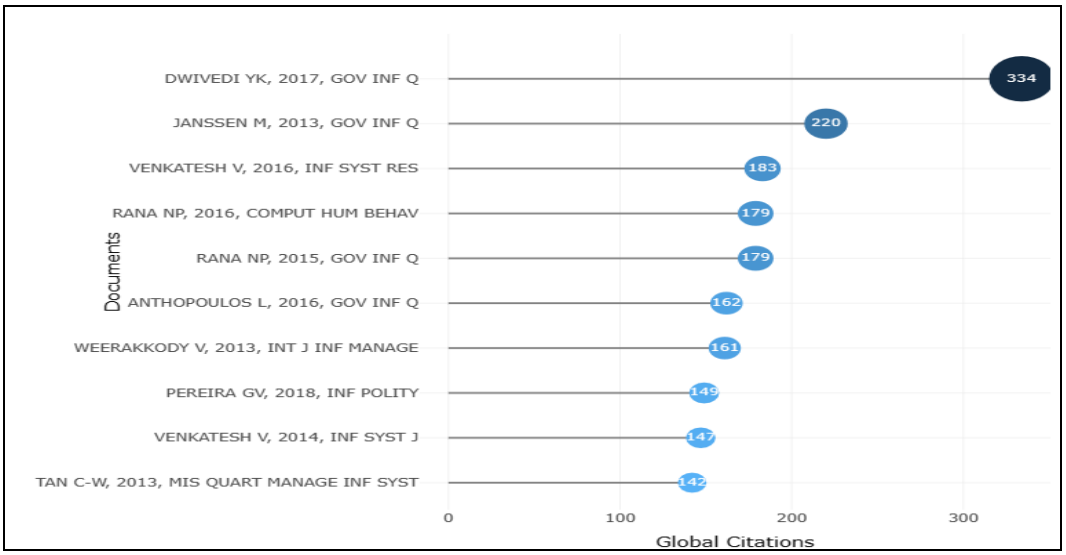

Fig 7: Lists the ten most referenced publications in e-government, emphasizing the works of Dwivedi YK and Janssen M

Country Wise Contribution.

Table 2 illustrates which nations have made the highest contributions to the literature in this discipline. The majority contributions were from advanced nations. The UK dominated the local publishing scene, with Indonesia coming as a distant second. The amount of papers published in a certain subject is inversely related to the number of citations the articles get. The United Kingdom seems to be the primary site of research, with 40% of all citations coming from that country. When it comes to meaningful production, India is towards the bottom due to their very low scores. This could be an indication that developing countries are making progress in doing elite research in this area. Furthermore, according to bibliometric data, the top five nations in terms of citations received were the UK, the Netherlands, Greece, USA, and Portugal.

Table 2: Summarizes the contributions of various countries to e-government literature, with the UK leading in both publication volume and citation count

Region	Freq	Country	TC
UK	149	United kingdom	1043
Indonesia	124	Netherlands	574
Malaysia	115	Greece	281
China	82	Usa	236
Usa	74	Portugal	159
Brazil	68	Austria	152
India	51	China	132
Jordan	45	India	131
Greece	43	Malaysia	125
Spain	35	Oman	106

Keywords

Words like "E-government," "electronic government," "trust," "adoption,"and "ict," were among the most often utilised terms in the publications' analyses. Figure 12 shows a word cloud, where the magnitude of each terms represents how often they appear in the source text. It's a stand-in for the word's literary importance. Other than these, it was observed that cloud computing, UTAUT, social media, open government, e-services, m-government, service quality were the most important. From 2015 forward, the frequency increases dramatically.

Conclusion

The field of e-government research is rapidly evolving, characterized by its interdisciplinary nature and increasing scholarly interest. Despite its relative infancy, significant growth in literature has been observed, driven by the integration of information and communication technology in public administration. Various studies have explored diverse aspects of e-government, from public health to citizen participation, highlighting the need for comprehensive longitudinal analyses to identify trends and future directions. The bibliometric analysis conducted in this research underscores the collaborative efforts among scholars and the prominence of specific journals and authors in shaping the discourse. As e-government continues to develop, it presents valuable opportunities for further exploration and policy enhancement, particularly in developing nations.

Reference

1. Ajibade P, Mutula SM. Bibliometric analysis of citation trends and publications on e-government in Southern

African countries: A human-computer interactions and IT alignment debate. Library Philosophy & Practice, 2019.
2. Alcaide L, Pedro M, Bolívar R, Jesús M, Herrera E. Analysing the scientific evolution of e-Government using a science mapping approach. Government Information Quarterly. 2017, (July 2016). DOI: 10.1016/j.giq.2017.05.002
3. Muñoz AL, Bolívar RMP, Cobo MJ, Viedma HE. Analysing the scientific evolution of e-government using a science mapping approach. Gov Inf Q. 2017;34:545-555.
4. Bayu A, Nandiyanto D, Biddinika MK, Triawan F. How bibliographic dataset portrays decreasing number of scientific publication from Indonesia. Indonesian J Sci Technol. 2020;5(1):154-175.
5. Bolívar RMP, Alcaide Muñoz L, López Hernández AM. Scientometric study of the progress and development of e-Government research during the period 2000-2012. Information Technology for Development. 2014;22(1):36-74. DOI: 10.1080/02681102.2014.927340
6. Bolívar RMP, Alcaide Muñoz L, Hernández LAM. Scientometric study of the progress and development of e-government research during the period 2000-2012. Information Technology for Development. 2016;22(1):36-74.
7. Cheng S, Ding L. A quantitative study on the research fronts of electronic government. In: 2012 Fifth International Conference on Business Intelligence and Financial Engineering. IEEE, 2012, p. 481-5.
8. Dias GP. Fifteen years of e-government research in Ibero-America: A bibliometric analysis. Government Information Quarterly. 2019;36(3):400-411.
9. Dwivedi YK. An analysis of e-government research published in Transforming Government: People, Process and Policy (TGPPP). Transform Gov People Process Policy. 2009;3(1):7-15.
10. Erman N, Todorovski L. Analyzing the structure of the EGOV conference community. In: International Conference on Electronic Government. Springer Berlin Heidelberg, 2010, p. 73-84.
11. Heeks R, Bailur S. Analyzing e-government research: Perspectives, philosophies, theories, methods, and practice. Government Information Quarterly. 2007;24(2):243-265. DOI: 10.1016/j.giq.2006.06.005
12. Muñoz AL, Bolívar RMP, Cobo MJ, Herrera-Viedma E. Analysing the scientific evolution of e-Government using a science mapping approach. Government Information Quarterly. 2017;34(3):545-55.
13. Pedro M, Bolívar R. Trends of e-Government research: Contextualization and research opportunities. Int. J Digit Account Res. 2010;10(July):87-111. DOI: 10.4192/1577-8517-v10
14. Przeybilovicz E, Cunha MA, Coelho TR. The development of studies on electronic government in Brazil: A bibliometric and sociometric study, 2014.
15. Rodríguez Bolívar MP, Muñoz AL, Hernández LAM. Scientometric study of the progress and development of e-government research during the period 2000-2012. Information Technology for Development. 2016;22(1):36-74.
16. Sæbø Ø, Rose J, Flak SL. The shape of e-Participation: Characterizing an emerging research area. Government Information Quarterly. 2008;25(3):400-428. DOI: 10.1016/j.giq.2007.04.007
17. Tursunbayeva A, Franco M, Pagliari C. Use of social media for e-Government in the public health sector: A systematic review of published studies. Government Information Quarterly. 2017;34(2):270-282. DOI: 10.1016/j.giq.2017.04.001
18. Yildiz M. E-government research: Reviewing the literature, limitations, and ways forward. Government Information Quarterly. 2007;24(3):646-665.
19. DOI: 10.1016/j.giq.2007.01.002