

Research themes in the use of E-participation within E-government: A Citation-based Content Analysis

Abdul Khalique Shaikh^{1*}, Ahlam Almusharraf², Nisar Ahmed³, Nadia Khalique⁴

Abstract

This paper presents the current research themes and trends in the use of E-participation within e-government. The main objective of this research study is to review and conduct a detailed content analysis of the top 100 articles and identify the latest research themes and trends in the field of e-participation within e-government and the objective is outlined on a qualitative research question. The selection of the top 100 most influential papers is based on the number of citations per year. The content analysis includes the paper categorization; authors' keywords and growth; country of analysis; theme of studies; method of analysis; and technology type. The content analysis of the period 2003-2019 revealed that most of the studies (31%) used case studies, while 11% of the studies utilized a regression analysis technique to evaluate their datasets. In terms of technology, our analysis showed that the Internet and web-based tools are the most frequently used platforms for conducting e-participation. The contribution of this study is to provide a worm's eye view of current research in the field of e-participation within e-government. This study will be beneficial for current and future researchers and practitioners, particularly those requiring a reliable knowledge base that can help them to do further research in the field of e-participation within e-government.

Keywords: *content analysis; e-participation; bibliometric; systematic literature review; e-government.*

1. INTRODUCTION

The practice of public participation within e-government has become an important part of a sustainable democratic political government. Recently, Information and Communication Technology (ICT) has exhibited great potential to make connections between Government and citizens. Therefore, political parties use ICT as an instrument to get closer to citizens. According to The United Nations, "e-participation is the process of engaging citizens through ICTs [Information and Communication Technologies] in policy and decision-making in order to make public administration participatory, inclusive, collaborative and deliberative for intrinsic and instrumental ends" [1].

A research study [2] termed the link of e-government with the presence of democratic institutions and participation of its citizens. E-participation supports the government to enhance public engagement which increases citizens' confidence in the policy-making and government decisions [3]. Hence, e-participation seems to open up enormous benefits

¹ Department of Information Systems, Sultan Qaboos University, Muscat Oman, shaikh@squ.edu.om

² Department of Business Administration, College of Business and Administration, Princess Nourah Bint Abdulrahman University, Riyadh 11671, Saudi Arabia

³ Department of Economics and Finance, Sultan Qaboos University, Muscat Oman

⁴ Department of Information Systems, Sultan Qaboos University, Muscat Oman

and opportunities for citizens and provide better solutions as compared to the traditional way of participation. It is also noted that the citizen with more e-services experience are mostly involved in the use of e-participation tools [4]. According to the research study [5], it could be possible for a number of people over a world wide to engage in the democratic process via e-participation.

A recent study by [6] looked at the specific question of the collective advancement of urban sustainability and found that e-participation provided a tangible bridge between local authorities and citizens. Furthermore, the authors contemplated how e-participation should be a key consideration in establishing “Smart Governance” as ICT technology today forms a common and integral component of social movements. For instance, it is well known how the Internet was used as an effective tool for citizen mobilization during the Arab Spring in the Middle East [7]. Attention is now directed towards how to harness and enhance conventional and citizen engagement through e-participation from the perspective of citizens. In this regard, it could be expected that there would be a growing number of technological tools that can facilitate citizen participation in the decision-making processes of governments, and yet, widespread general uptake and application of e-participation technology have not always been forthcoming. An empirical case study from Estonia [8] identified potential reasons why e-participation systems have often failed to meet expectations in terms of adoption and outcomes. One of the important challenges highlighted was that of optimizing the potential of e-participation across different contexts and highly complex and diverse environments of democratic participation.

Due to the rising importance of public participation in electronic government services, it is necessary to explore the existing literature and evaluate and compare its application and overall performance at the national level in terms of qualitative measures which is the main research question for this research. Thus, the main objective of this study is to review and conduct a content analysis of the top 100 articles and identify the latest research themes and trends in the field of e-participation within e-government. The study also shows the impact of e-participation on citizen behavior and state policies in order to summarize the field of research, present the extant body of knowledge, and identify the remaining research challenges. The outcomes of the study could be beneficial to researchers and practitioners who require a reliable knowledge base that can be used to launch further research in the field of e-participation within e-government. The study analyzes the evolution of e-participation research to discover the most productive and most impactful subfields by considering the paper categorization, authors’ keywords and growth; country of analysis; themes of studies; method of analysis and technology type. Before conducting a content analysis of the top 100 articles in this research study, the researcher had previously carried out a citation analysis that is already in the public domain [9] and which explained how identification and selection of relevant literature were initially performed.

The rest of the paper is organized as below: Section 2 summarizes the earlier literature in the related field; Section 3 explains the research methodology; Section 4 presents the content analysis based on various criteria along with the results and discussion. The content analysis was done by categorizing trends in the conceptual framing of e-participation studies and analyzing the prevalent intellectual mindset within the academic field. Section 5 concludes the paper by presenting the findings and possible areas for future research.

2. Literature Review

Various types of literature review, including the Traditional Literature Review (TLR), Meta-Analysis Review (MAR), Systematic literature review (SLR), and Longitudinal

Analysis Review, are carried out to identify current themes and trends in the existing literature.

First, the TLR provides a critical review on methodologies and summarizes research areas that have already been discussed in the existing literature. However, one research study [10] stated that most of the time the TLR does not provide much benefit as the results are based on subjectivity and could vary based on the expertise of the researchers. Moreover, in the case of the TLR type literature review, there is no step-by-step systematic method for performing analysis and assessment. Second, the meta-analysis review (MAR) involves the application of statistical methods for conducting analysis, so it is essential that researchers conducting this type of review have a basic knowledge of statistics. Statistical analysis can be designed to integrate numerical results obtained from various independent studies but, according to [10], it is necessary to evade any attempt to integrate the data from dissimilar studies as the MARs are greatly dependent on the quality of data. Third, the systematic literature review (SLR) is an effective form of review that is very widely used nowadays. This type of review is carried out using scientific methodology to discuss protocol-driven methodology along with standards that can identify trends in relevant studies. The purpose of conducting an SLR is to reduce bias and maintain maximum transparency. A research study [11] has stated that this form of review uses proven complex models to address the goals of review questions.

In this research study, the main intention was to conduct content analysis to identify the current themes and impacts of content related to e-participation within e-government, using articles from the Scopus database to cover existing research studies. The study utilized R-based bibliometric functions and libraries [12] from our earlier research study [9] and based on the information collected, the Content analysis was conducted for this research study. Various kinds of functions of bibliometric libraries are applied to conduct data analysis and visualization which enable scientific mapping to identify the themes and impact of the current trends. A review now follows of earlier literature before presenting the content analysis on the e-participation topic.

The systematic literature review by [6] sheds new light on the current status of smart governance and its effects. The study established an association between smart governance and performed quantitative research by exploring 114 articles. The review recommended that more work that is empirical can be required to make the association between smart governance and its results.

In their SLR, [13] attempted to determine the causes for low participation and to deliver solutions to Government on how to promote and enhance public participation. The study reviewed 51 articles that were gathered from famous databases such as IEEE and Scopus. It was concluded that the reasons behind low participation were lack of digital literacy and prowling behavior from a citizen perspective.

Another review [14] suggested engaging citizens in collaboration with social media and crowdsourcing as a solution for promoting e-participation that would facilitate specification of relevant challenges by providing a common understanding of the current circumstances in relation to others. However, the study did not apply the content analysis technique.

[7] reviewed 32 selected articles using the prominent database Web of Science to determine the relationship among different online political engagement platforms. Covering the period from 1915 to 2015 (20 years), the authors linked the existing state of empirical studies and the use of online platforms and also measured the impact of these platforms on the decision-making and policymaking process. The study revealed that careful design of platforms in relation to citizen's needs and interests is essential in order to encourage digital-based political participation, the "digital divide" being one of the major concerns affecting active political participation. This study conducted an in-depth

analysis of selected articles; however, the results are not set out in either a visual or a tabular format.

A further systematic literature review [15] covered 74 articles from a total of 167 reviewed articles from the Web of Knowledge and EBSCO sources. Based on existing literature, the study devised an analytical framework for distinguishing three phases of diffusion of e-participation, namely adoption, implementation, and institutionalization. Although the study collected articles from all over the world, the analysis mainly highlights challenges related to Europe.

[16] conducted a meta-analysis review of 60 articles collected from various sources such as Web of Science, Science Direct, Google Scholar, ACM Digital Library. The study suggests government agencies need to develop truly positive assertiveness, perception of usefulness, and enhance the trust of citizens in the participation processes which can be long-term if an active e-participation platform is provided. The study adopted only quantitative research analysis without including any qualitative measures, for instance, in the analysis of the performance of the factors obtained from the assessment of the research models. Also, the main and most comprehensive database, Scopus, was not used in the collection and selection of articles.

[17], on the other hand, conducted a traditional literature review to assess the utilization of social media within e-government in terms of citizen perspective. After reviewing 139 articles that were collected from Google Scholar and Scopus sources, the authors found that mostly conceptual, theoretical, descriptive, or analytical studies are discussed. The main limitations identified regarding this study are the skewed and small sample size and the lack of validation of results, which impacted greatly the findings of the study.

Meanwhile, [18] conducted a systematic literature review to discuss citizen participation within e-government based on an assessment of 50 articles. The review examined how the process of e-Government could get advantage insight from the current research on e-participation. The authors revealed that the case study method is more influential to determine initial concerns, drivers and obstacles that impede active e-participation. Furthermore, the authors suggested that such as citizen profiling and relevance for participation are essential factors in promoting e-government service delivery. However, the study might have missed some prominent articles because of incomplete sets of keywords.

Another systematic literature review, conducted by [19], studied citizens' electronic participation, using 82 articles drawn from sources such as ACM, IEEE, and Springer databases. Based on the review of 15 years of publications, from 2000-2015, the authors identified the following three challenges: "there is a big difference between e-participation and traditional participation"; "the tools and methodologies mostly covered only government perspectives"; and "e-participation is most influenced by political science discipline". The review revealed that social media is the platform most used to implement an e-participation initiative.

A systematic literature review conducted by [20] studied various existing technologies applied for e-participation. The review presented a linkage between e-participation and such technologies. It focuses clearly on the use of tools for specific areas of participation, for example, the usage of software tools for supporting the building and visualization of arguments in various forms of graphs for better understanding. However, the sample size is not mentioned and the majority of the articles are sourced from the areas of e-participation and relevant tools and technologies.

The research study by [21] used a longitudinal analysis review of 122 articles on e-participation. The author classified the e-participation literature including e-participation actors, contextual factors, overall effects, methods and evaluation. It was identified that the successful usage of methodological tools for e-participation is highly dependent on

Information Technology platforms and the total number of participants. The results of the study revealed that the current research focus is moving from government to citizens and is more focused on contextual factors. In that scenario, the authors suggested that there is a real need to devise a framework for analyzing e-participation that incorporates the new categories identified.

Finally, [22] performed a scientometric analysis of more than a thousand articles on e-participation using the Web of Science database from the year 2001 to 2017. The software tool CiteSpace was used to identify the trends of journals and their citation. The study highlights that social media is a key driver to trigger public participation in Government administration. However, some key articles relating to e-government are missing from this analysis and no content analysis was conducted.

Based on the above e-participation literature, this research study addresses the identified gaps and shortcomings by adopting what is believed to be a significant new approach as, to the best of our knowledge, none of the existing literature has conducted a content analysis using bibliometric functions. However, the research study [23] has carried out the performance analysis to detect only the most valuable subfields within e-Participation using science mapping.

3. Research Methodology

To conduct the content analysis, the research methodology was adapted from our earlier work [9] that was based on citation analysis using bibliometric functions. Whilst the previous work conducted only citation analysis, this paper also incorporates content analysis that includes the paper categorization; authors' keywords and growth; country of analysis; themes of studies; method of analysis; and technology type. There are 235 samples collected from the Scopus database, the top 100 influential papers were selected from the period 2003- 2019 based on their h index and the number of citations per year. Before finalizing the sample size, the relevancy and quality of the articles were considered by reading the title, keywords and abstract. The R- Studio using bibliometric functions [12] was preferred as a method of analysis because of its ample features compared to other bibliometric software tools which have only limited functionality. Furthermore, bibliometric functions cover all steps of the research process, from data collection to analysis of results and visualization. It is worth noting that, to the best of our knowledge, the features of bibliometric functions that support by R-studio are not yet available with other bibliometric software. Moreover, these bibliometric functions are integrated with the most widely used databases such as Scopus, Web of Science. As this study uses only Scopus data, it was essential to be able to integrate Scopus data with the bibliometric functions. The main reason for using Scopus database is that it provides thorough coverage, multidisciplinary character, sophisticated search capabilities, credibility, and extra features like citation analysis and bibliometric insights with more integration features so the scopus database is reasonable for content analysis of scientific research. These elements work together to create a solid and reliable basis for the content analysis study. The details of the selection of articles and the search query are outlined in our previous work [9]. Figure 1 shows the steps and flows of how the identification and selection of articles for conducting content analysis are carried out. The top 100 published articles were selected for conducting content analysis based on the "h index" and the number of citations per year.

However, the article selection process is summarized in Figure 1: (a separate file)

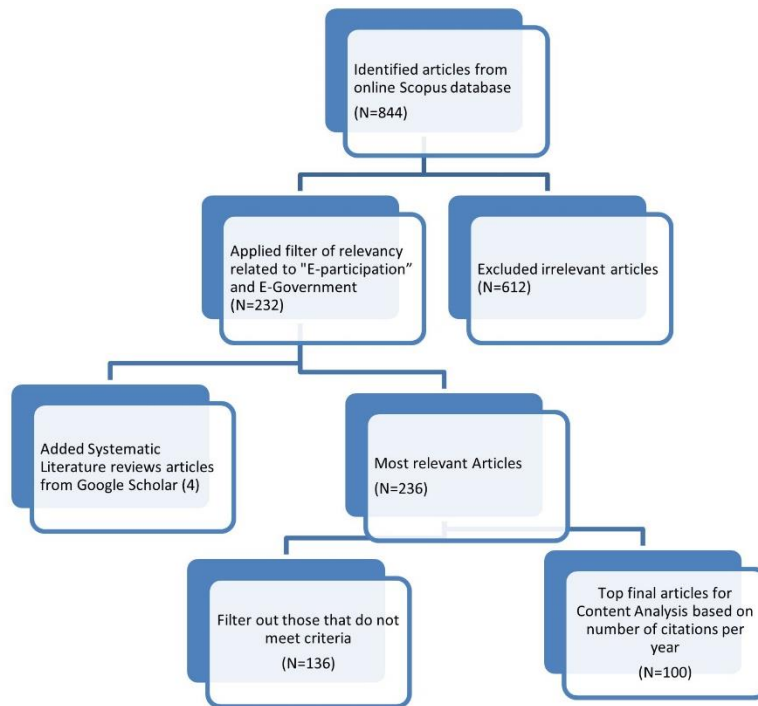


Figure 1 Process for the selection of articles (N = # of papers)

4. Content Analysis

There are three different approaches for conducting content analysis: conventional, directed, and summative. Content analysis is mostly used for qualitative research, but it can be applied in quantitative and sometimes mixed modes of the research framework [24]. Content analysis is a very popular methodology in interactive media research as described by [25], but it is now becoming common in physical and social sciences as well. Content analysis can incorporate a family of analytic approaches, and it is very helpful in carrying out systematic literature reviews. The research study by [26] mentioned that the main benefit of content analysis is that it summarizes the process into forms of categorization that help in better understanding and analysis of data. Moreover, it addresses the critical characteristics of the current issues within literature using prescribed measurement and visualization. In this research study of e-participation literature, the content analysis utilizes mixed approaches but mostly relies on a summative content analysis that includes determining and comparisons, keywords and content. The summative approach may start with an analysis of identified keywords [27]. With the help of the content analysis approach, the researcher can extract very useful information from the selected literature and attempt to determine the presence of certain words, themes, or concepts within some given qualitative data. For instance, the current study investigated categories including data period, country of analysis, the variables used, and main results from the published articles. The ultimate goal of content analysis in this research study is to analyze trends and concepts in the field of e-participation to come up with possible solutions and conclusions. This research study identified 236 articles for the citation analysis presented in [9] and selected only 100 top most influential papers which are based on the number of citations per year. The choice of these top articles is based on the belief that examining the most influential articles enables a more comprehensive understanding of the contents of this literature field. This small sample is still well representative of the literature as a whole and can serve as a suitable benchmark for future research contributions.

A content analysis of these top-ranked papers on e-participation will facilitate future researchers' investigation of current knowledge about the data and concepts used in the field. To achieve this goal, the 100 most influential papers in the field of e-participation would be examined in terms of the following content dimensions: paper categorization, authors' keywords and growth, authors' keywords cloud, country of analysis, themes of study, method of analysis and type of technology. Focusing on these content dimensions would ensure that inappropriate documents were not included in the content analysis. The selection of the top 100 papers was based on average citations per year. An explanation of each of the above dimensions is provided in the following sub-sections.

4.1. Paper Categorizations

Figure 2 illustrates the paper categorizations identified within the 100 most influential papers. Among these, 62% of the papers are associated with the empirical study, followed by conceptual papers (19%), whereas systematic literature reviews, traditional literature reviews, theoretical, mixed, longitudinal, meta-analysis and applied research papers were observed less frequently (6%, 5%, 2%, 2%, 2%, 1%, 1%, respectively). It is important to note that traditional literature reviews and systematic literature reviews are very common. On the other hand, longitudinal data analysis tends to be applied for assessing participant outcomes at multiple follow-up times and when examining customer satisfaction and quality issues [28]. It is indicated that far less research has been done on systematic literature review papers, so there is a real need for bibliometric analysis for the e-participation topic to facilitate review of the existing research through direct mapping of the body of knowledge.

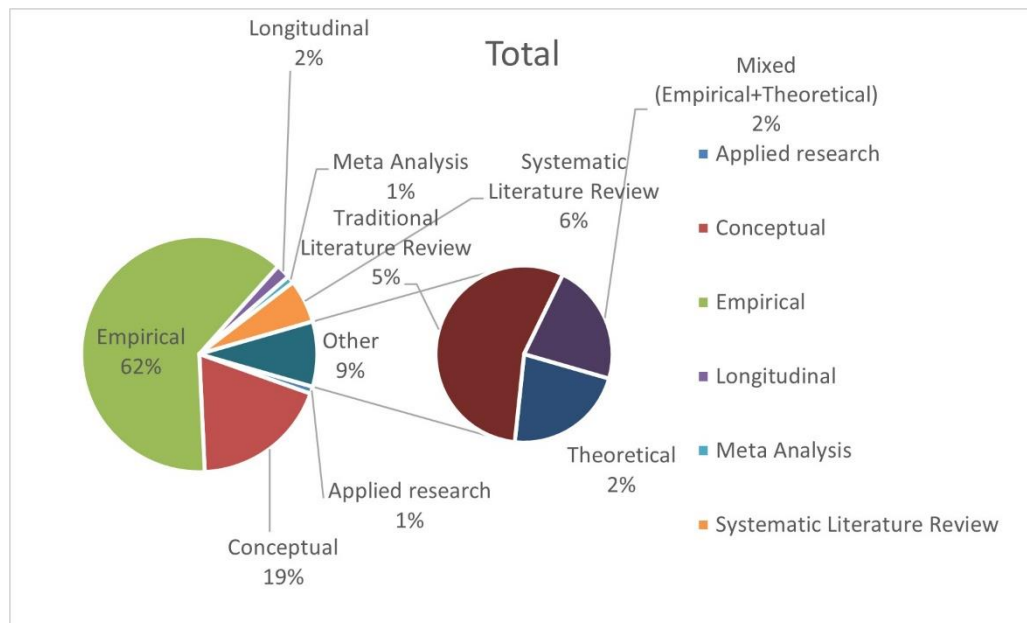


Figure 2 Paper categorization

4.2. Authors' Keywords and Growth

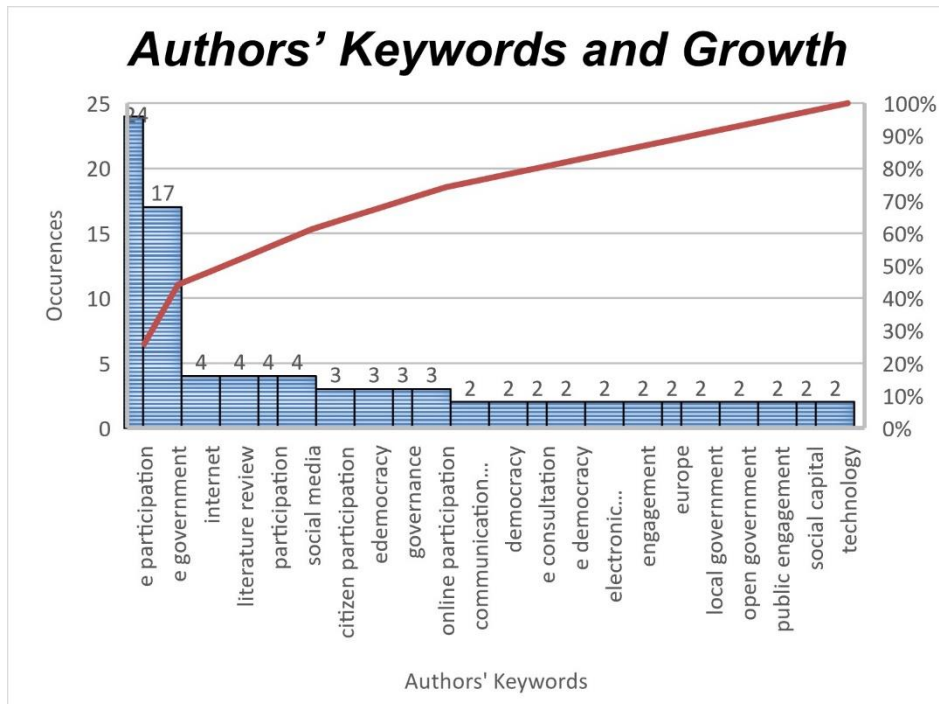


Figure 3 Authors' Keywords and Growth

The authors' keywords provide a concise summary of the research context and content in any research paper. The most relevant authors' keywords are illustrated in Figure 3; the two most frequent keywords being "e-participation" (24 times) and "e-government" (17 times), followed by the words "Internet" and "literature review", "participation" and "social media". It is worth mentioning that "e-participation" and "eparticipation" (unhyphenated) and "e-government" and "egovernment" (unhyphenated) are considered as the same keywords.

4.3. Country of Analysis

"Country of Analysis" refers to the geographic area where scientific research is being done and studied. In order to expand knowledge and contribute to the academic and scientific discourse, it designates the country or territory where researchers, scholars, and scientists are actively involved in a range of research activities, investigations, and studies. The nation of analysis is important because it affects the environmental variables, research infrastructure, funding sources, cultural influences, and legal frameworks that can affect the character, scope, and results of the research being conducted inside that particular geographic border.

The country-wise distribution for published articles is shown in Figure 4. Regarding country of analysis, Figure 4 indicates that 35% of studies within the 100 most influential papers used data from European countries. Meanwhile, 23% of the studies used International datasets, 9% of studies employed data associated with the USA, and 4% of studies used data from South Korea. The rest of the papers used data from other countries such as China, Indonesia and South America. It is observed via country analysis that the use of datasets from Asian countries is not very common in this field of e-participation research.

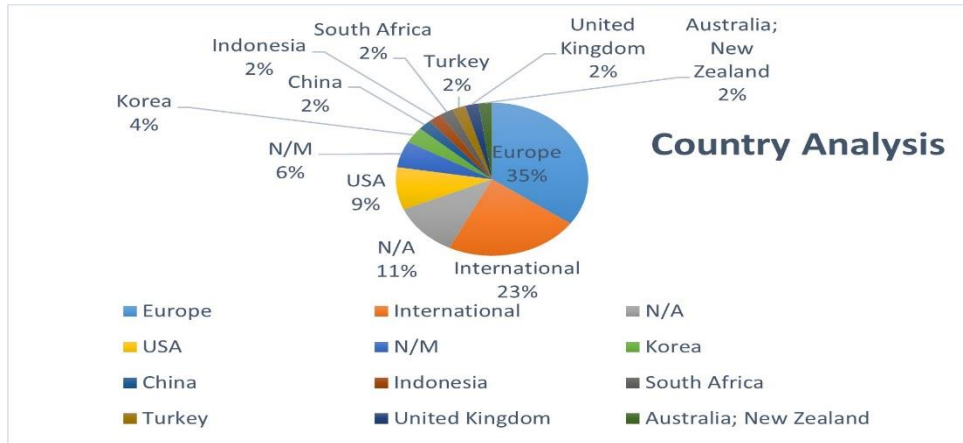


Figure 4 Analysis by country Themes of Studies

A qualitative approach by emphasizing context, subjective interpretation, and the richness of the data was applied to identify the trends in the studies' themes across the datasets in the e-participation research field. The themes were classified into three categories based on the content: E-participation, E-government, and Applications and Tools. These were then linked with common terms relating to those categories as shown in the following table 1.

Table 1 Themes of Studies

Common terms	Categories
e-participation/Citizen participation/ online participation/Public engagement	e-participation
Electronic Government/E-Governance/E-democracy/Local Government	e-government
Internet/Web technology/ICT/Social Media/GPS /Web 2.0	Applications & Tools

A graphical representation is presented below:

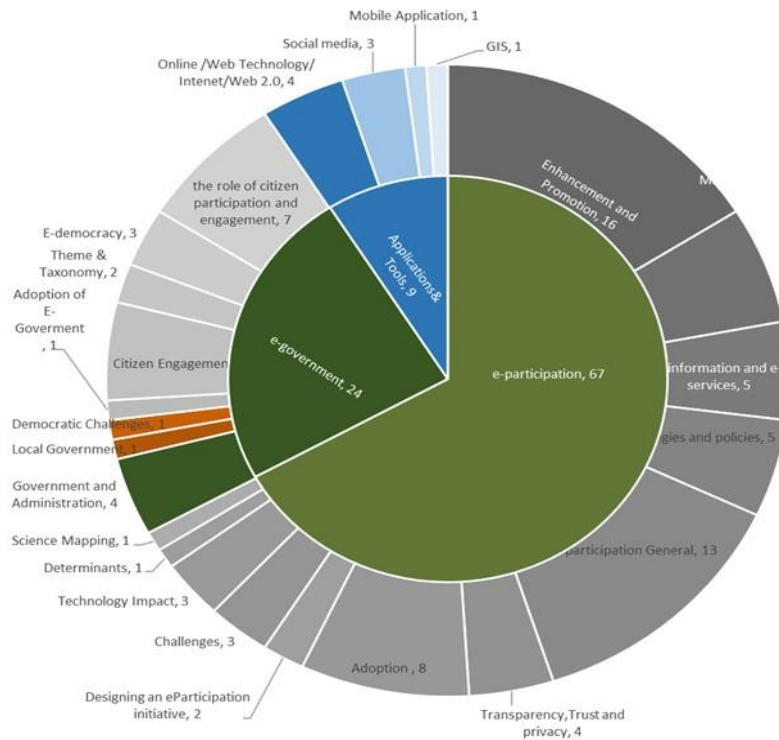


Figure 5 Themes of Studies

Among the three main categories, 67 out of 100 articles came under the E-participation category and were found to include the following sub-categories: Enhancement and Promotion (16), e-participation general (13), Adoption (8), the role of citizen participation and engagement (7), Decision Making (6), E-information and e-services (5), Strategies and Policies (5), Citizen Engagement (5), Transparency, Trust and Privacy (4), Government and Administration (4) Transparency, Trust and Privacy (3), Adoption (2), Designing an E-participation Initiative (1), and Determinants (1). The second category, government, included 24 out of 100 articles and the sub-categories Challenges (3), Technology Impact (3), e-democracy (3).

The numbers indicate that methods related to enhancing and promoting e-participation were the themes most frequently discussed in the 100 top papers. Within the third category, Applications and Tools (9), which describes the impact of technologies on e-participation, the sub-categories Online Technology (4), Social Media (3), Mobile Applications (1) and social media (1) were identified. The major sub-themes trending from 2017 to date include Enhancement and Promotion of E-participation, Decision Making, E-information and E-services. The analysis indicates that most of the studies focused more on citizen perspectives rather than E-governance.

4.4. Methods of Analysis

Regarding methods and techniques used in the top 100 papers, Figure 6 shows that 31% of studies used case studies, while 11% utilized a regression analysis technique to evaluate their datasets, a technique used to identify the trends of study. Moreover, the 100 most influential papers used various methods in data collection and data analysis, including Survey (9%), Multi-Method (8%), and Experimental Methods (4%). For example, Cegarra-Navarro, Garcia-Perez [29] used two techniques – Regression and TAM (Technology Acceptance Model) – to identify the importance and significance of perceived usefulness, perceived ease of use, and attitude between technical knowledge and citizenship engagement. Other studies used Structure Equation Modeling (5%), Descriptive method (5%), Science mapping (3%) and Interview methods (3%). Finally, 22% of the studies did not specify the methods used.

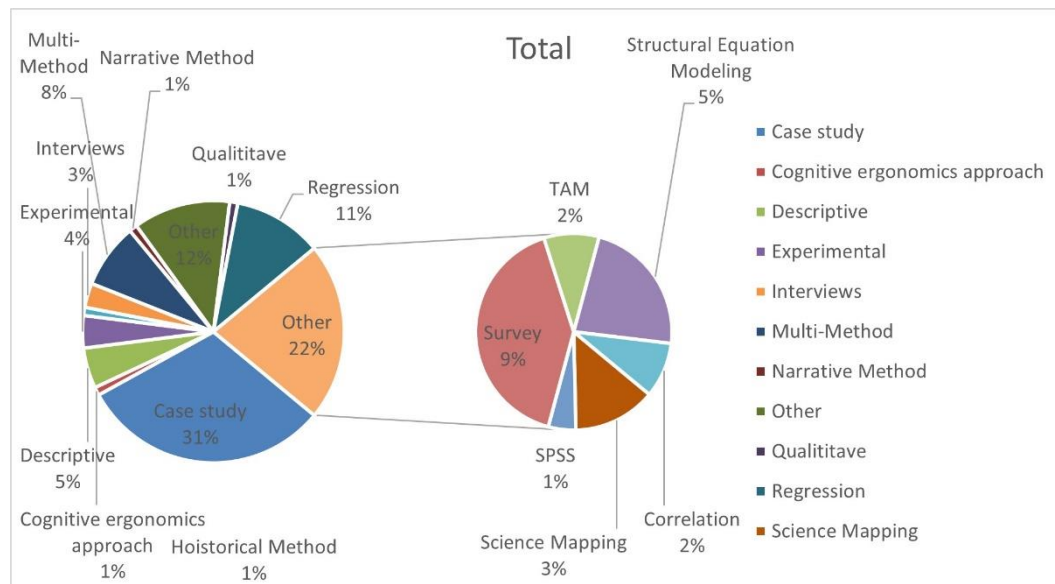


Figure 6 Methods and techniques

4.5. Type of Technology

Assessment of the research techniques used in the 100 most influential papers identified that technology impacts the overall results of the e-participation and decision-making process. This section discusses the types of technology used in the sample papers.

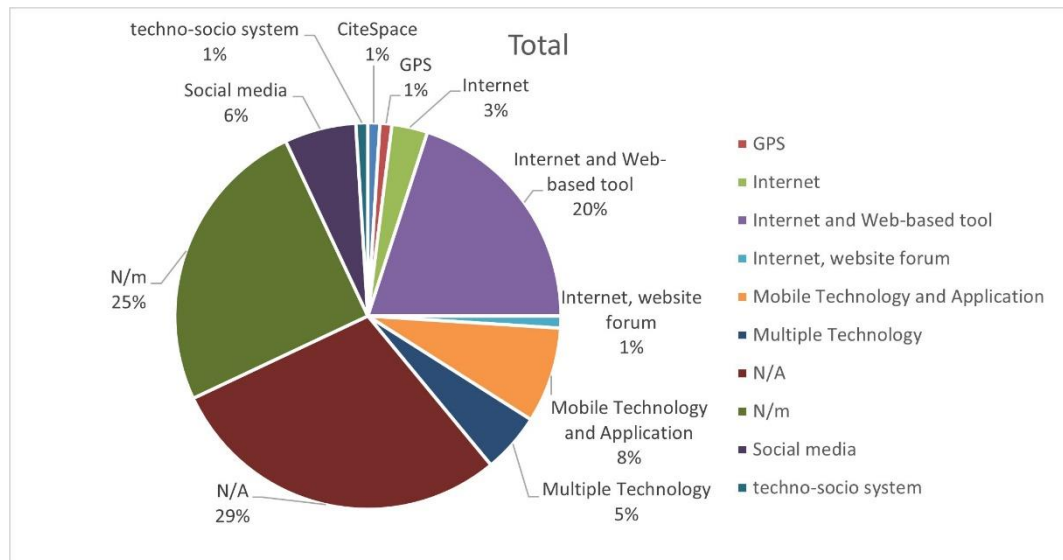


Figure 7 Type of technology

Notably, Figure 7 indicates that technology is not applied in 29% and 25% of the studies did not mention (N/m) the technology utilized in the enhancement of e-participation and e-government services. Meanwhile, 20% of the studies examined the use of the Internet and web-based tools, whereas 8% of the studies investigated the use of mobile technology and applications, as forms of quick and rapid response by citizens and stakeholders, and 5% of studies used multiple technologies to assess e-participation. The smartphone has become the most consumable device and, according to the survey conducted by [30], 90% of adults own a smartphone, with sales of smartphones, along with smartphone apps and accessories, being worth nearly US\$1 trillion in 2020. Based on these results, it is expected that mobile technology and applications will be the most prominent source of engagement with e-government services in the future.

5. Conclusion

E-participation initiatives by democratic Governments have become vital for e-decision making which is a very promising and active domain nowadays. The internet and social media have a great role to play in changing how citizens communicate with the Government and enhancing the social and political engagement of citizens. This research study undertook content analysis using bibliometric functions to identify the current research themes and trends regarding the use of e-participation within e-government. The motivation of this research study derived from the urge to provide a comprehensive understanding of this topic by conducting a content analysis on e-participation using bibliometric functions, which is a novel research approach, according to the best of our knowledge. The findings of this research study will address the current gap in areas such as methods of analysis, type of technology, etc. To accomplish the objective, a comprehensive selection of studies was identified using Scopus-indexed articles published between the years 2003 and 2019. A detailed content analysis was conducted of the 100 most influential articles. The various methods and technologies used in e-participation and e-government services were explored and discussed, as well as the key gaps in the existing literature that require attention. The content analysis included types of papers, authors' keywords, country of analysis, themes of studies, method of analysis, and type of technology. It is observed that the existing technology used for e-participation normally does not provide a transparent environment for public participation. To overcome this issue, the Blockchain technology can be explored in the future in terms of maintaining the privacy and security of e-participants against unauthorized involvement of intruders. Finally, we acknowledge that using only one large Scopus database is not

sufficient for our research study as it is possible that some important studies may not be covered in this database. Further research should be carried out to address further the gaps in the literature as well as any residual data from outside the Scopus sample.

Statements and Declarations

Competing interests: The authors have no relevant financial or non-financial interests to disclose. Hence the authors declare no competing interests.

Ethical approval: This article does not contain any studies with human participants performed by any of the authors

Informed consent: This article does not contain any studies with human participants performed by any of the authors

Acknowledgment: The authors extend their appreciation to the Deanship of Scientific Research at Princess Nourah bint Abdulrahman University for supporting this work.

Data availability: The datasets generated during and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Author contributions

The authors hereby confirm that we all have made a substantial contribution to finalizing the manuscript. The Primary author contributed to writing the paper, The 2nd and 3rd authors were engaged in Data collection designing and analysis sections. However, the 4th author provided his supervision and guidance. We read and approved the final manuscript.

6. References

- [1] United Nations. Global Launch of the 2020 United Nations E-Government Survey. 2020 [cited 2020 July 2020]; Available from: <https://publicadministration.un.org/en/research/un-e-government-surveys>.
- [2] Akman, I., et al., E-Government: A global view and an empirical evaluation of some attributes of citizens. *Government Information Quarterly*, 2005. 22(2): p. 239-257.
- [3] Komito, L., e-Participation and Governance: Widening the net. *Electronic Journal of E-government*, 2005. 3(1): p. 39-48.
- [4] Zheng, Y., Explaining citizens' E-participation usage: functionality of E-participation applications. *Administration & Society*, 2017. 49(3): p. 423-442.
- [5] Jaeger, P.T., Deliberative democracy and the conceptual foundations of electronic government. *Government Information Quarterly*, 2005. 22(4): p. 702-719.
- [6] Tomor, Z., et al., Smart governance for sustainable cities: findings from a systematic literature review. *Journal of Urban Technology*, 2019. 26(4): p. 3-27.
- [7] Santini, R.M. and H. Carvalho, The rise of participatory despotism: a systematic review of online platforms for political engagement. *Journal of Information, Communication and Ethics in Society*, 2019.
- [8] Toots, M., Why E-participation systems fail: The case of Estonia's Osale. *ee. Government Information Quarterly*, 2019. 36(3): p. 546-559.
- [9] Shaikh, A.K., et al., E-Participation Within E-Government: A Bibliometric-Based Systematic Literature Review. *International Journal of Electronic Government Research (IJEGR)*, 2021. 17(4): p. 15-39.
- [10] Jesson, J., L. Matheson, and F.M. Lacey, *Doing your literature review: Traditional and systematic techniques*. 2011: Sage.
- [11] Jesson, J. and F. Lacey, How to do (or not to do) a critical literature review. *Pharmacy education*, 2006. 6(2).

- [12] Aria, M. and C. Cuccurullo, bibliometrix: An R-tool for comprehensive science mapping analysis. *Journal of informetrics*, 2017. 11(4): p. 959-975.
- [13] Oliveira, C. and A.C. Garcia, Citizens' electronic participation: a systematic review of their challenges and how to overcome them. *International Journal of Web Based Communities*, 2019. 15(2): p. 123-150.
- [14] Caetano, B.P., et al. WeCollaborate: Citizen collaboration for government problem-solving. in *2017 IEEE 21st International Conference on Computer Supported Cooperative Work in Design (CSCWD)*. 2017.
- [15] Steinbach, M., J. Sieweke, and S. Süß, The diffusion of e-participation in public administrations: A systematic literature review. *Journal of Organizational Computing and Electronic Commerce*, 2019. 29(2): p. 61-95.
- [16] Zolotov, M.N., T. Oliveira, and S. Casteleyn, E-participation adoption models research in the last 17 years: A weight and meta-analytical review. *Computers in Human Behavior*, 2018. 81: p. 350-365.
- [17] Alryalat, M.A.A., et al., Use of social media in citizen-centric electronic government services: A literature analysis. *International Journal of Electronic Government Research (IJEGR)*, 2017. 13(3): p. 55-79.
- [18] Simonofski, A., et al. Reexamining e-participation: Systematic literature review on citizen participation in e-government service delivery. in *23rd Americas Conference on Information Systems*. 2017.
- [19] Boudjelida, A., S. Mellouli, and J. Lee. Electronic citizens participation: Systematic review. in *Proceedings of the 9th international conference on theory and practice of electronic governance*. 2016.
- [20] Ergazakis, K., K. Metaxiotis, and T. Tsitsanis, A state-of-the-art review of applied forms and areas, tools and technologies for e-participation. *International Journal of Electronic Government Research (IJEGR)*, 2011. 7(1): p. 1-19.
- [21] Medaglia, R., eParticipation research: Moving characterization forward (2006–2011). *Government Information Quarterly*, 2012. 29(3): p. 346-360.
- [22] Qi, T., et al., A scientometric analysis of e-participation research. *International Journal of Crowd Science*, 2018.
- [23] Rodríguez-Bolívar, M.P., L. Alcaide-Muñoz, and M.J. Cobo, Analyzing the scientific evolution and impact of e-Participation research in JCR journals using science mapping. *International Journal of Information Management*, 2018. 40: p. 111-119.
- [24] Hsieh, H.-F. and S.E. Shannon, Three approaches to qualitative content analysis. *Qualitative health research*, 2005. 15(9): p. 1277-1288.
- [25] Neuendorf, K.A. and A. Kumar, Content analysis. *The international encyclopedia of political communication*, 2015: p. 1-10.
- [26] Harwood, T.G. and T. Garry, An overview of content analysis. *The marketing review*, 2003. 3(4): p. 479-498.
- [27] Hsieh, H.-F. and S. Shannon, Three Approaches to Qualitative Content Analysis. *Qualitative health research*, 2005. 15: p. 1277-88.
- [28] Bernhardt, K.L., N. Donthu, and P.A. Kennett, A longitudinal analysis of satisfaction and profitability. *Journal of business research*, 2000. 47(2): p. 161-171.
- [29] Cegarra-Navarro, J.-G., A. Garcia-Perez, and J.L. Moreno-Cegarra, Technology knowledge and governance: Empowering citizen engagement and participation. *Government Information Quarterly*, 2014. 31(4): p. 660-668.
- [30] Paul Lee, M.C., Craig Wigginton, and Cornelia Calugar-Pop. Deloitte's 2019 global mobile consumer survey. 2020 [cited 2020 Aug]; Available from: <https://www2.deloitte.com/us/en/insights/industry/telecommunications/global-mobile-consumer-survey.html>.