Journal of Governance and Local Politics (JGLP)
Vol. 7, No. 2, November 2025, pp. 202-218
Received July 04, 2025 Revised Aug 13, 2025 Accepted Aug 27, 2025

The Impact of E-Government on Social Inclusion: A Bibliometric Review of E-Inclusion Research

Gusti Naufal Rizky Perdana[1*], Ameylia Puspita Rosa Dyah Ayu Arintyas[2], Suci Fitrah Syari[3], Gilang Wilmantara[4]
[1,2,3,4]Universitas Mulawarman, Jl. Kuaro, Kota Samarinda
**Corresponding Author: gustinaufalrp@fisip.unmul.ac.id*

Keyword:
E-Government;
E-Inclusion;
Social Inclusion;
Bibliometric Analysis

Abstract: This study explores the intersection of e-government and social inclusion through a bibliometric analysis of e-inclusion research. Drawing on 97 publications indexed in Scopus, the analysis was conducted using VOS viewer and NVivo 12 Plus to identify research trends, dominant themes, and collaborative networks among scholars, institutions, and countries. The findings reveal that e-government plays a critical role in promoting inclusive governance by enhancing digital access, participation, and service delivery. However, challenges such as the digital divide and unequal digital skills continue to hinder broader social inclusion. Thematic clusters identified include empowerment, accessibility, digital literacy, and trust. Developed and developing countries alike contribute to this field, although research remains uneven. This study offers valuable insights into the evolving discourse on e-inclusion and highlights gaps for future exploration. The findings are intended to inform policymakers, scholars, and practitioners in designing more equitable and inclusive digital governance frameworks.

INTRODUCTION

Public sector digitalization is an inevitable phenomenon affecting the organizational structure of public institutions and communication patterns between the public and government agencies (Trubetskaya, 2020;Doran et al., 2023;Ciancarini et al., 2024). Along with the advancement of information and communication technology, e-government has gained rapid popularity (Karunia et al., 2023;Supardi et al., 2023;Kadewandana & Kaligis, 2024). E-government refers to the application of information and communication technology to enhance the quality of public services, as well as improve effectiveness, efficiency, transparency, and accountability in governance (Farida & Lestari, 2021;Arief, 2022;Astawa, 2023). E-Government also plays a role in strengthening public participation by providing access to public services through digital platforms (Mukminto et al., 2023;Asadon et al., 2024). Along with this development, digitalization also significantly impacts social inclusion, creating both opportunities and challenges for disadvantaged groups in society (Liotta, 2023;Serang, 2024). Although digitalization in social interventions can improve social inclusion, it also faces significant challenges, such as digital inequality (Reisdorf & Rhinesmith, 2020;Rafiq, 2023). Digitalization contributes to social inclusion by expanding access to services, facilitating faster service delivery, and enhancing the quality of social services for vulnerable groups, including people with disabilities and disadvantaged individuals. This, in turn, can enhance the quality of life and expand opportunities for participation in society (Banabakova, 2024). E-government increases social inclusion by providing digital access to public services (Reyna et al., 2020). However, without adequate policies and targeted interventions, digital transformation risks deepening the divide between digitally literate citizens and those excluded from online services, making e-inclusion a pressing public governance challenge today.

With the growing role of e-government, e-inclusion is becoming increasingly important in ensuring that all individuals, especially marginalized groups, can access digital technology and the Internet equally. E-inclusion refers to efforts to ensure all individuals, especially marginalized groups with learning difficulties, have equal access to digital technology and the Internet

(Chadwick et al., 2023). This concept also includes providing equitable access to digital technology and the Internet for everyone, especially those facing various challenges (Soriano et al., 2024). Furthermore, e-inclusion focuses on integrating digital technologies to facilitate participation and provide access to marginalized groups in society (Gallagher et al., 2023). Additionally, e-inclusion ensures that every citizen possesses sufficient digital skills to access and utilize e-government services effectively (Morte-Nadal & Esteban-Navarro, 2022). Ultimately, community e-inclusion encompasses the active participation of citizens in accessing electronic information, engaging in consultations, and contributing to the decision-making process (Retnowati et al., 2022). Despite this growing body of research, there is still limited systematic mapping of how e-government and e-inclusion are studied globally, which makes it difficult to identify emerging trends, thematic gaps, and collaborative networks in this domain.

Several previous studies have examined the relationship between e-government and social inclusion, demonstrating the significant role of e-government in enhancing social inclusion. During the COVID-19 pandemic, e-government played a crucial role in facilitating communication and information sharing, which are essential for protecting communities in epidemic situations (Yasir et al., 2020). In addition, e-governance strengthens social inclusion by expanding community participation, increasing access to public services, building trust in government, and encouraging accountability and empowerment of marginalized groups, which supports the creation of more inclusive governance (Asadon et al., 2024). E-Government also strengthens social inclusion by providing electronic social services, expanding access to information, and facilitating long-distance communication, especially for marginalized groups, as well as service diplomacy in remote areas, to meet the needs of communities under challenging conditions (Popovych et al., 2021). However, although e-government supports social inclusion by expanding access to services, encouraging online participation, and empowering communities through information and communication technologies, challenges remain, especially for people with low incomes and those with low digital skills, which hinder their full participation in governance (Galushi & Malatji, 2022). These challenges highlight the need for a timely and comprehensive bibliometric investigation to understand how the academic community is responding to issues of e-inclusion in e-government, and to identify where future research and policy attention should be directed.

Although previous studies have examined the relationship between e-government and social inclusion, this study offers a novelty by conducting a more in-depth bibliometric analysis of the development of e-inclusion research in the context of e-government. This study aims to map the trends in the global set, identify dominant topics, and explore collaborations between researchers in this field. By systematically analyzing the global knowledge structure, this research not only situates itself within the broader discourse but also fills a critical gap by highlighting underexplored themes and emerging areas of interest. A bibliometric approach is expected to reveal previously undetected patterns, provide a broader understanding of the impact of e-government on social inclusion, and provide insights that can direct future research and policies toward more inclusive governance. The timeliness of this study lies in the accelerating pace of digital transformation in public administration, coupled with heightened awareness of digital inequalities post-pandemic, making it imperative to have an evidence-based mapping of the field now. The contribution of this study is to provide a more comprehensive understanding of how e-government can encourage social inclusion and provide guidance for policymakers to design more effective and inclusive digital inclusion strategies in the future.

RESEARCH METHODS

This study employs a bibliometric analysis method to examine trends, collaborations, and thematic orientations in the scientific literature related to e-government and social inclusion. This bibliometric analysis provides insight into the evolution of existing topics and future research directions across disciplines (İri & Ünal, 2024). Through this method, this study aims to identify the development of global research trends, map dominant topics, and explore collaboration patterns between researchers. Thus, this analysis not only helps assess the extent to which

research on e-government and social inclusion has developed but also reveals research gaps that need further exploration to contribute to public policy and digital-based governance. The data for this study are sourced from the Scopus database, one of the most significant and trusted resources for scientific literature across disciplines (Sumpena et al., 2024). Using Scopus, this study can access various articles, journals, and international conferences relevant to e-government and social inclusion, as well as obtain accurate and up-to-date information on research trends and collaborations between researchers. The data for this study were obtained through a search in the Scopus database using the query: (TITLE-ABS-KEY ("E-Government") OR TITLE-ABS-KEY ("E-Inclusion") AND TITLE-ABS-KEY ("Social Inclusion")) AND (LIMIT-TO (DOCTYPE, "ar") OR LIMIT-TO (DOCTYPE, "cp") OR LIMIT-TO (DOCTYPE, "ch")) AND (LIMIT-TO (LANGUAGE, "English")). From this search, a total of 97 relevant documents were retrieved, consisting of 48 journal articles (JA), 38 conference proceedings (CP), and 11 book chapters (CH), all published in English. The inclusion criteria were deliberately limited to peer-reviewed journal articles, conference proceedings, and book chapters to ensure the reliability, academic rigor, and scholarly contribution of the analyzed literature. Other document types such as editorials, notes, and non-peer-reviewed sources were excluded because they often lack comprehensive methodological detail and may not contribute significantly to bibliometric mapping.

The data obtained will be analyzed using VOSviewer and NVivo 12 Plus software to gain deeper insight into the topic being studied. The systematic steps begin with preparing the bibliographic data, cleaning duplicates, and ensuring all metadata are accurate. VOSviewer will then import the cleaned dataset to visualize networks, map collaborations between authors, institutions, and countries, and illustrate relationships between dominant keywords in e-government and social inclusion research. Using VOSviewer, this study can identify patterns of scientific collaboration and trends in the most discussed topics in the literature, providing a clear visual overview of the dynamics of research developments in this field (Wulandari & Cahyonowati, 2024). Additionally, after completing the network visualization stage, NVivo 12 Plus will be utilized for a more in-depth thematic analysis. The steps in NVivo start with importing the selected articles, using the Autocode feature to automatically code based on frequently appearing keywords and concepts, and then refining the codes manually for accuracy. Using the Autocode feature, NVivo 12 Plus allows automatic coding to identify key themes in selected articles based on frequently appearing keywords and concepts (Salahudin et al., 2020). This analysis will help us understand how e-government and social inclusion have evolved and explore topics that may have been under-explored in previous research. Both software enable this study to provide a more comprehensive understanding of trends and gaps in the literature on e-government and social inclusion.

RESULTS AND DISCUSSION

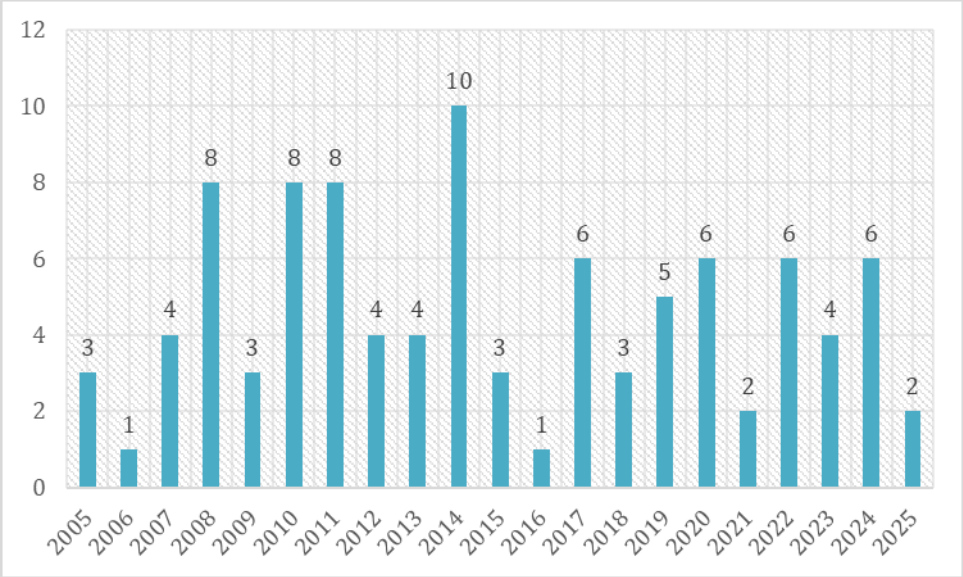
Research Trend and Top Citation of E-Government in Social Inclusion

Research on e-Government and social inclusion has seen rapid growth since 2005, with significant fluctuations in the number of publications over the years. In the early period, from 2005 to 2009, the number of publications was still limited, with the highest peak in 2008 recording 8 publications. This reflects the growing interest in the role of e-government in creating inclusive governance, particularly in facilitating access to services for marginalized communities. In the following period, from 2010 to 2014, the number of publications increased sharply, with 10 publications in 2014, showing an increasing focus on the impact of e-government in strengthening social inclusion. Research during this period focused more on how digital technology could improve access to public services for previously neglected groups. However, after 2015, the number of publications stabilized, ranging from 3 to 6 per year, with a significant decline in 2016 and 2021.

The surge in research publications on e-Government and social inclusion during 2010–2014 was partly driven by global and national initiatives to close the digital gap, such as the launch of the National Digital Inclusion Network in 2011 in the UK (Good Things Foundation, 2011). This

network connected thousands of local organizations as Digital Inclusion Hubs, providing free internet access, devices, and digital skills training for communities without connectivity. Such structured interventions significantly boosted local digital inclusion and attracted researchers' interest in exploring the link between e-Government and social inclusion, as reflected in the increase in academic publications during that period.

The increased interest in this topic was again evident in 2020, with 6 publications, likely influenced by the COVID-19 pandemic. The pandemic accelerated the adoption of digital services in public administration due to restrictions on physical interaction, forcing many countries to shift their government systems to digital platforms. However, the pandemic also worsened the digital divide, particularly for groups with limited access or skills in technology (Morte-Nadal & Esteban-Navarro, 2024). This highlights the importance of e-inclusion, ensuring that everyone can participate in the rapidly developing digital world. Furthermore, e-government also presents risks for society, particularly in exacerbating the digital divide, which could harm already marginalized groups. Dugdale et al., (2005) mention that while e-government has the potential to improve access to services, it can also worsen inequalities for those who lack equal access to technology. Therefore, it is crucial to link research on e-government with social inclusion to ensure that digital technologies and services are accessible to all, including vulnerable groups, without leaving anyone behind.



Picture. 1
Research Trend of E-Government in Social Inclusion
Source: (Scopus Database)

In research on E-Government and Social Inclusion, several articles have made significant contributions and are considered key references in the field. One of the most cited articles is "The impact of policies on government social media usage: Issues, challenges, and recommendations" by Bertot et al., (2012), with 639 citations. This article examines how policies influence government social media usage, as well as the challenges and recommendations related to the implementation of these policies in the context of digital government. The research has been influential in understanding how public policies can leverage social media to enhance transparency and social inclusion.

Next, "e-Government information systems: Evaluation-led design for public value and client trust" by Grimsley & Meehan (2007), with 249 citations, highlights the importance of designing e-government information systems with a focus on evaluation to create public value and build user trust. This article provides valuable insights into how information systems in e-government can deliver tangible benefits to society and support social inclusion through technology.

Another important study, "Digital inclusion and social inclusion: A tale of two cities" by Mervyn et al., (2014), with 67 citations, discusses the close relationship between digital inclusion and social inclusion through case studies in two different cities. The article offers perspectives on how digital policies can affect social and economic access for marginalized groups, highlighting the importance of social inclusion in digital transformation.

The article "Beyond anti-bias education: Changing conceptions of diversity and equity in European early childhood education" by Vandenbroeck (2007), which has 45 citations, although focused on early childhood education, contributes to understanding how diversity and equity principles can be applied in the broader context of social inclusion, particularly in public sector policies aimed at more inclusive governance.

Lastly, "Social media for digital and social inclusion: Challenges for information society 2.0 research & policies" by Verdegem (2011), with 37 citations, discusses the challenges faced in research and policies related to information society 2.0 and how social media can be used to support digital and social inclusion. This research provides an understanding of how digital platforms, particularly social media, can facilitate access to government services, especially for those with limited access.

Taken together, these works do not merely represent isolated findings but mark distinct phases in the evolution of scholarly discourse on e-government and social inclusion from early conceptual frameworks and system design considerations, to the integration of social media as participatory tools, and finally to the more nuanced understanding of digital inclusion as a driver of equitable governance.

This progression reflects how academic interest has shifted alongside global policy priorities, rapid technological advancements, and the increasing urgency of addressing the digital divide, especially in light of events such as the global push for open government and the digital transformation accelerated by the COVID-19 pandemic.

Table 1. Top Cited Research of E-Government in Social Inclusion

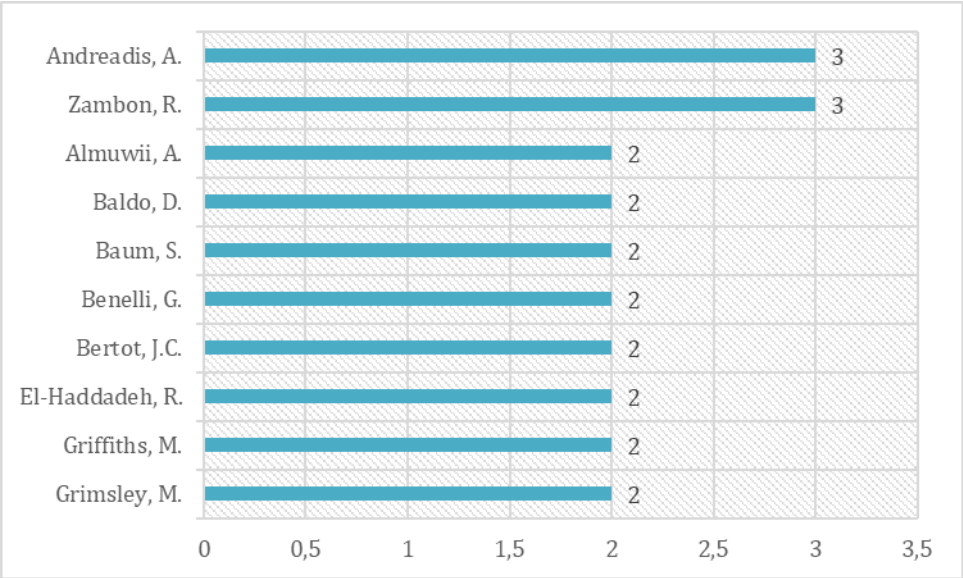
Number	Title	Author	Sources	Year	Citation
1	The impact of polices on government social media usage: Issues, challenges, and recommendations	Bertot, J.C., Jaeger, P.T., Hansen, D.	Government Information Quarterly, 29(1), pp. 30–40	2012	639
2	e-Government information systems: Evaluation-led design for public value and client trust	Grimsley, M., Meehan, A.	European Journal of Information Systems, 16(2), pp. 134–148	2007	249
3	Digital inclusion and social inclusion: a tale of two cities	Mervyn, K., Simon, A., Allen, D.K.	Information Communication and Society, 17(9), pp. 1086–1104	2014	67

4	Beyond anti-bias education: changing conceptions of diversity and equity in european early childhood education	Vandenbroeck, M.	European Early Childhood Education Research Journal, 15(1), pp. 21–35	2007	45
5	Social media for digital and social inclusion: Challenges for information society 2.0 research & policies	Verdegem, P.	Triplec, 9(1), pp. 28–38	2011	37

Source: (Scopus Database)

Top Authors, Affiliations, and Countries in the Research of E-Government in Social Inclusion

Research on E-Government and social inclusion involves several prominent authors who have made significant contributions to this field. Notable authors such as Grimsley, M., Griffiths, M., and El-Haddadeh, R., each with two publications, have extensively discussed the application of technology in government to support social inclusion. Other authors, such as Bertot, J.C., Benelli, G., Baum, S., and Baldo, D., have also contributed by examining the impact of e-government transparency on public service access and how technology can help reduce social inequalities. Some authors with more contributions, like Zambon, R., and Andreadis, A., each with three publications, highlight that there is still significant potential for further research development. These findings suggest that no researcher has consistently produced articles in the area of e-government for social inclusion, creating opportunities for more in-depth and consistent research in this area. Researchers play a crucial role in developing research themes through repeated and in-depth analysis, which leads to meaningful and credible findings (Vaismoradi et al., 2016).



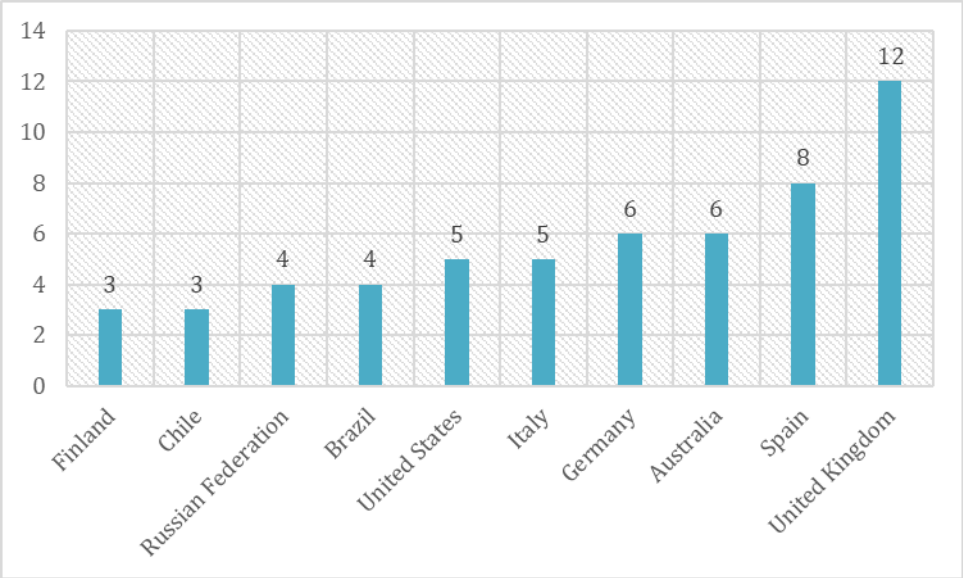
Picture. 2
Top Authors Research of E-Government in Social Inclusion
Source: (Scopus Database)

Research on e-Government and social inclusion also shows significant contributions from various countries. Countries with a considerable number of publications include the United

Kingdom with 12 publications, followed by Spain with 8. Countries like Germany and Australia each have 6 publications, indicating their active involvement in this research. Meanwhile, countries with smaller but still significant contributions include Finland and Chile, each with 3 publications, as well as Russia, Brazil, the United States, and Italy, with 4 to 5 publications each. These contributions demonstrate that e-government and social inclusion are global concerns, with research spread across various parts of the world.

Developed countries such as the United Kingdom, Spain, and Germany tend to dominate this research, given their more advanced digital technology. In developed countries, e-inclusion enhances social inclusion by facilitating access to e-government services, which in turn improves economic performance, job opportunities, and quality of life. It also helps meet the needs of disadvantaged groups, not only based on demographic factors but also by addressing existing social inequalities (Almuwil et al., 2011).

However, developing countries like Chile and Brazil are also actively exploring how e-government can support social inclusion, given the access challenges and digital divides they face. Although technology in these countries is still developing, they are striving to optimize e-government to create more inclusive governance. This indicates that the topic is not only relevant in developed countries but also in developing nations that are working to leverage technology to address the digital divide. E-government in developing countries has significant potential to improve social inclusion by easing access to public services and information, thereby empowering marginalized communities and encouraging greater participation in the governance process (Kondowe & Chigona, 2019).

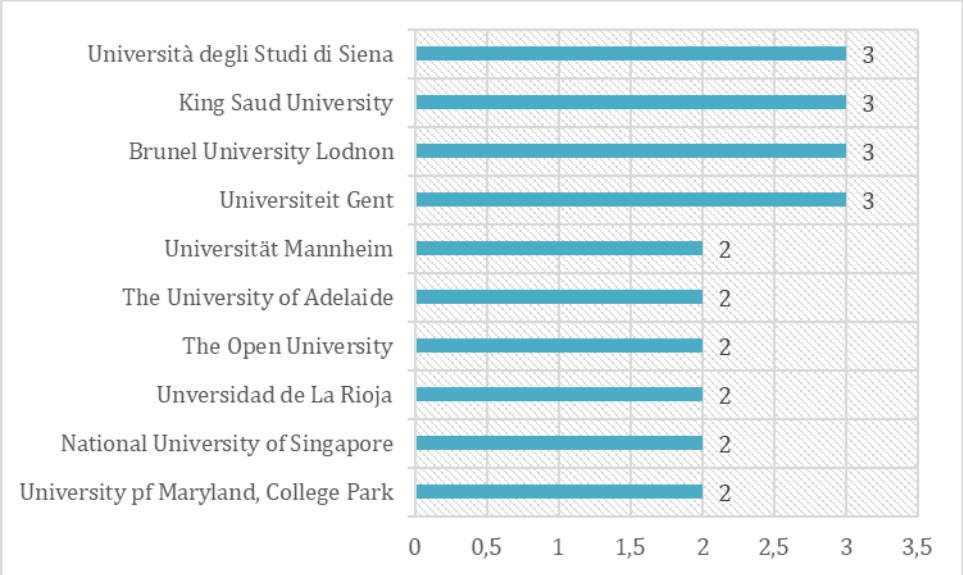


Picture. 3
Top Afilliations Research of E-Government in Social Inclusion
Source: (Scopus Database)

Research on e-Government and social inclusion also involves several leading academic affiliations that have made significant contributions to the development of this field. Some of the affiliations with notable publications include the University of Maryland, College Park, National University of Singapore, Universidad de La Rioja, The Open University, The University of Adelaide, and Universität Mannheim, each with two publications. These affiliations highlight that research in e-government and social inclusion involves universities from various parts of the world, with expertise in digital governance, information technology, and social studies.

Additionally, several universities with higher publication counts are also present in the data, such as Universiteit Gent, Brunel University London, King Saud University, and Università degli Studi di Siena, each with three publications. The presence of these prominent universities underscores global contributions to e-government research, with these institutions serving as

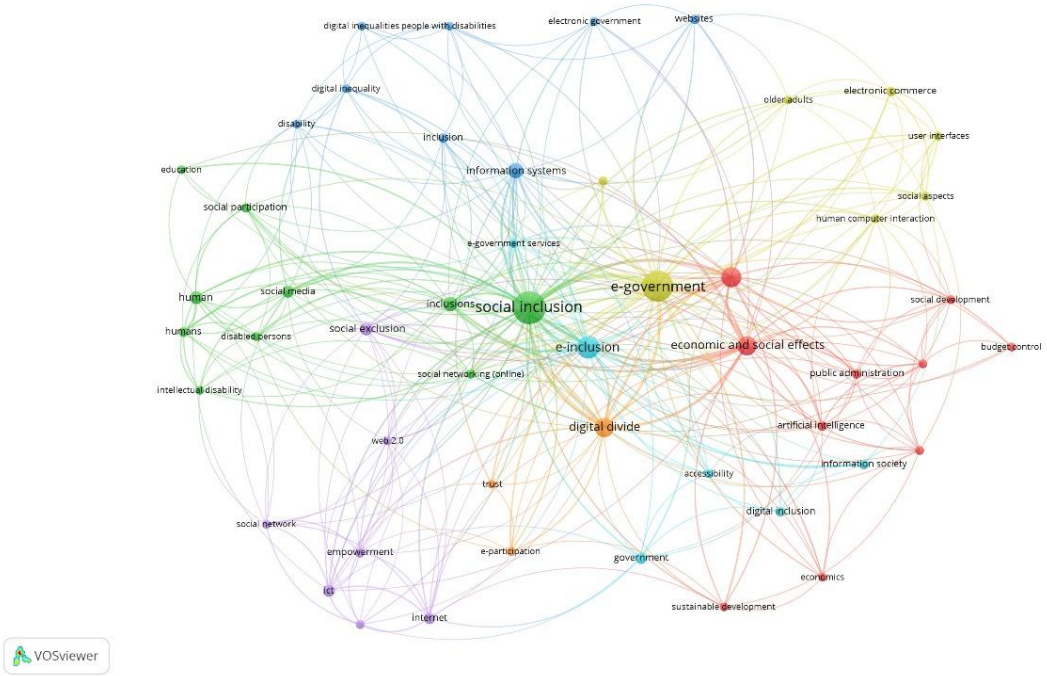
centers for the development of theories and policies related to digital governance and social inclusion.



Picture. 4
Top Countries Research of E-Government in Social Inclusion
Source: (Scopus Database)

Network, Overlay, and Density Visualization of E-Government in Social Inclusion

In research on e-government and social inclusion, it is important to understand how key concepts interact with one another to create an inclusive digital environment. This process can be better understood through network visualization analysis, which provides an overview of the relationships between the various concepts involved in this topic.



Picture. 5
Nework Visualization Research of E-Government in Social Inclusion
Source: (Scopus Database processed using Vosviewer)

In research on e-government and social inclusion, understanding how key concepts interact is crucial for creating an inclusive digital environment. This interaction can be explored through network visualization analysis, which offers a detailed view of relationships between concepts in this field. Using VOSviewer, the researcher conducted a co-occurrence analysis to identify main themes, dominant trends, and conceptual linkages. The visualization reveals six keyword clusters—red, green, blue, yellow, purple, and light blue—each representing specific thematic orientations. For instance, the green cluster centers on "social inclusion" and its connections to "digital inclusion" and "information systems," while the red cluster focuses on "e-government" alongside economic and political aspects. The size of each node reflects keyword frequency, with "social inclusion" and "e-government" emerging as central concepts, indicating their pivotal role in scholarly discussions. These interlinked clusters illustrate that the discourse in this field spans technical, social, and policy-related dimensions, reflecting an increasingly integrated approach to digital governance and inclusivity.

Based on the VOSviewer keyword network visualization, there are 6 clusters consisting of red, green, blue, yellow, purple, and light blue. Each cluster has keywords that are related to each other. Meanwhile, the node size indicates the level of occurrence of the keyword. The image above shows "Social inclusion" and "E-government" displaying larger node sizes than other keywords. This indicates that these keywords are among the most frequently used in scientific studies.

Table 2. Cluster Theme of E-Government in Social Inclusion

Cluster	**Concept Name**	**Number of Items (Color)**
Cluster 1	Application Programs, Artificial Intelligence, Budget Control, Economic and Social Effect, Economics, Government Data Processing, Public Administration, Public Policy, Social Developemnt, Sustainable Development	10 items (Red)
Cluster 2	Disabled Persons, Education, Human, Inclusions, Intellectual Disability, Social Inclusion, Social Media, Social Networking (online), Social Participation	9 items (Green)
Cluster 3	Digital inequalities, Disability, Electronic Government, Information Systems, People with Disabilities, Website	6 items (Blue)
Cluster 4	E-Government, Electronic Commerce, Human Computer Interaction, Information science, Older adults, Social Aspects, User Interface	7 items (Yellow)
Cluster 5	Empowerment, ICT, Information and Communication Technology, Internet, Social exclusion, Social network, Web 2.0	6 items (Purple)
Cluster 6	Accessbility, Digital Inclusion, E-Government Services, E-Inclusion, Government, Information Society	5 items (Light Blue)
Cluster 7	Digital divide, E-Participation, Trust	3 items (Orange)

Source: (Scopus Database processed using Vosviewer)

Based on the analysis using VOSviewer, researchers identified six clusters that illustrate the main concepts in the impact of e-government on social inclusion. First, Cluster 1 is marked in red and consists of 12 items covering application programs, artificial intelligence, budget control, e-government, economic and social effects, economics, government data processing, public administration, public policy, social development, surveys, and sustainable development. These concepts are related to the implementation of e-government on a macro and systemic level, through the use of technology and artificial intelligence, as well as budget and bureaucratic efficiency, to provide responsive public services. Digital transformation through e-government can increase transparency, efficiency, and public participation by providing access to public services, simplifying bureaucratic processes, and strengthening governance (Ahmad et al., 2025). Additionally, regarding policies, the implementation of e-government still faces various obstacles because e-government policies are not yet responsive to technological developments and societal needs in the digital era, which can create a digital divide and exacerbate social and economic inequality (Ranchordás, 2020).

Second, cluster 2 is marked with a green color, consisting of 9 items covering people with disabilities, e-inclusions, education, human inclusions, intellectual disability, social inclusion, social media, social networking (online), and social participation. The concept is related to social inclusion, empowerment, and community involvement through the use of e-government to open up spaces for participation. The government utilizes technology through online platforms, such as social media, websites, and mobile applications, to share information, provide public services, and increase community interaction. This enables it to reach and encourage broader public participation, including vulnerable groups (Wulur & Mulyanti, 2023).

Third, cluster 3 is marked in blue and consists of 8 items, including electronic commerce, human-computer interaction, information science, information systems, older adults, social aspects, user interfaces, and websites. These concepts highlight the technical aspects and user experience that focus on technology and digital interactions between the government and the public. The quality of public services and the acceleration of e-government can be enhanced by implementing a management information system to facilitate the management of information through digitalization, thereby supporting accountability, transparency, and responsiveness to community needs (Sira & Kuzior, 2025).

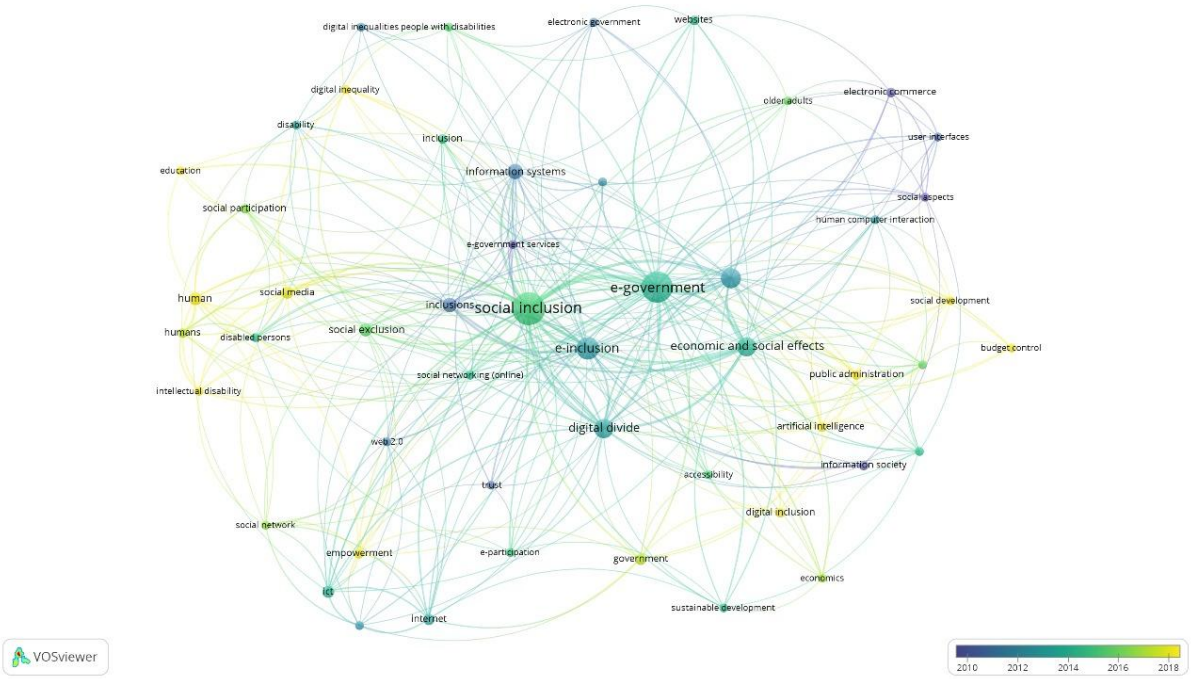
Fourth, cluster 4, marked in yellow, consists of 8 items including digital divide, e-participation, empowerment, ICT, information and communication, internet, social networks, and trust. These concepts can indicate e-government barriers to social aspects and community participation, which have implications for inequality, empowerment, and levels of public trust. Inclusion in e-government is closely tied to digital skills in utilizing e-government technology and services, often related to the digital divide (Esteban-Navarro et al., 2020;Morte-Nadal & Esteban-Navarro, 2022).

Fifth, Cluster 5 is marked in purple and consists of 6 items covering digital inequality, disability, e-government, inclusion, people with disabilities, and social exclusion. This concept highlights the risk of marginalization in non-adaptive digital systems, particularly for marginalized groups. Vulnerable and marginalized groups have low levels of digital skills (Haniko et al., 2023). This gap can hinder individuals' ability to access digital platforms, making it difficult for them to obtain opportunities, participate in activities, seek employment, and access educational resources (Erissa & Widinarsih, 2022).

Sixth, cluster 6 is marked with a light blue color, consisting of 5 items: accessibility, digital inclusion, e-government services, government, and information society. These concepts illustrate the state's role in providing equitable digital services through accessibility and information. The implementation of e-government can increase the transparency, efficiency, and inclusiveness of services; however, it also presents various challenges, including inclusive regulation, infrastructure development, digital literacy training, and coordination with stakeholders (Isma et al., 2025).

This study also utilizes overlay mapping representation to track keyword popularity over time, using the color of the overlay visualization mapping to identify terms that appear during a specific period. The image shows the latest research topics on the impact of e-government on

social inclusion. The color of each keyword indicates the average year of the emergence of scientific publications. Dark blue indicates old topics that appeared between 2010 and 2012. The keywords that appear are electronic commerce, user interfaces, human-computer interaction, older adults, public administration, and social aspects. These keywords suggest that publication studies focus more on system development, technology, and user experiences, as well as the social impact of e-government. The green color indicates topics that have developed from 2013 to 2015. The keywords that appear are information systems, e-government services, e-participation, social development, empowerment, and digital divide. These keywords illustrate that publication studies have shifted to digital justice and community participation. Finally, a yellow color indicates new topics that emerged between 2016 and 2018. The keywords include artificial intelligence, digital inclusion, digital trust, accessibility, information society, and budget control. These keywords indicate that the latest publication studies refer to the use of artificial intelligence, ethics and public trust, accessibility in social inclusion, and digital budget management.

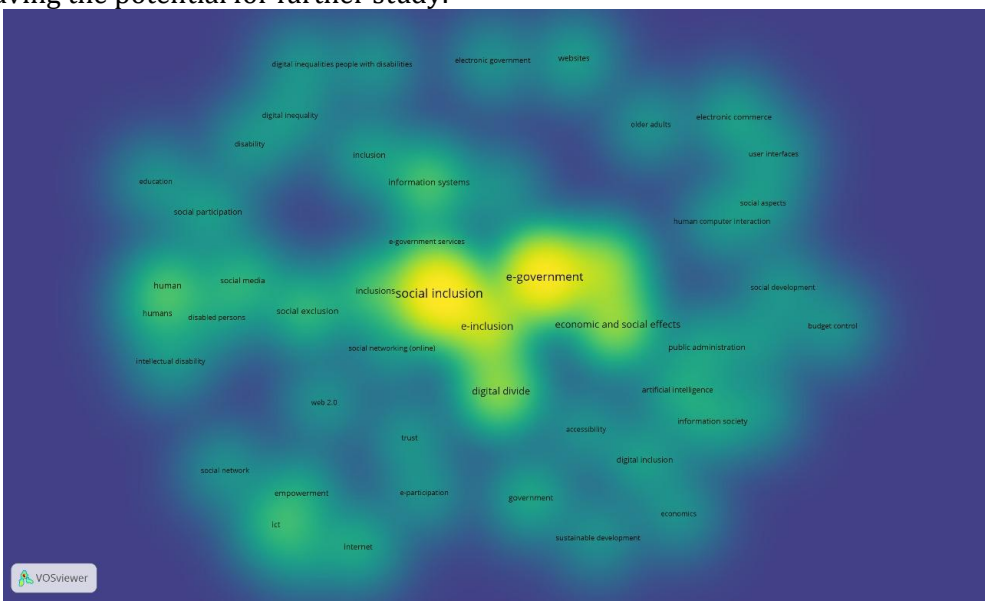


Picture. 6
Overlay Visualization Research of E-Government in Social Inclusion
Source: (Scopus Database processed using Vosviewer)

This study also uses another type of mapping using the VOSviewer program, namely, density visualization. The image above shows a density visualization of the research topic on the impact of e-government on social inclusion. The color in each topic shows the frequency of the keyword appearing in the research. Bright colors indicate an increasing frequency of the keyword in scientific publications. However, if the color tends to fade to the point of being unclear, it indicates that the keyword is used less by the academic community. The image above displays keywords with striking colors, including “Social inclusion”, “e-government”, and “e-inclusion”, which indicate that the keyword is used quite often and are the main topics that are often studied in scientific publications.

Meanwhile, the keywords “Economic and social effects”, “Digital divide”, and “inclusions” display a yellow color that is starting to fade, indicating that the use of these keywords is decreasing. However, they are still related to the main topic. Meanwhile, keywords such as “Budget control”, “Social Network”, and “sustainable development” display a dimming color,

indicating that these keywords are still rarely or less commonly used in scientific publications, despite having the potential for further study.



Picture. 7
Density Visualization Research of E-Government in Social Inclusion
Source: (Scopus Database processed using Vosviewer)

Wordcloud and Concept Mapping of E-Government in Social Inclusion

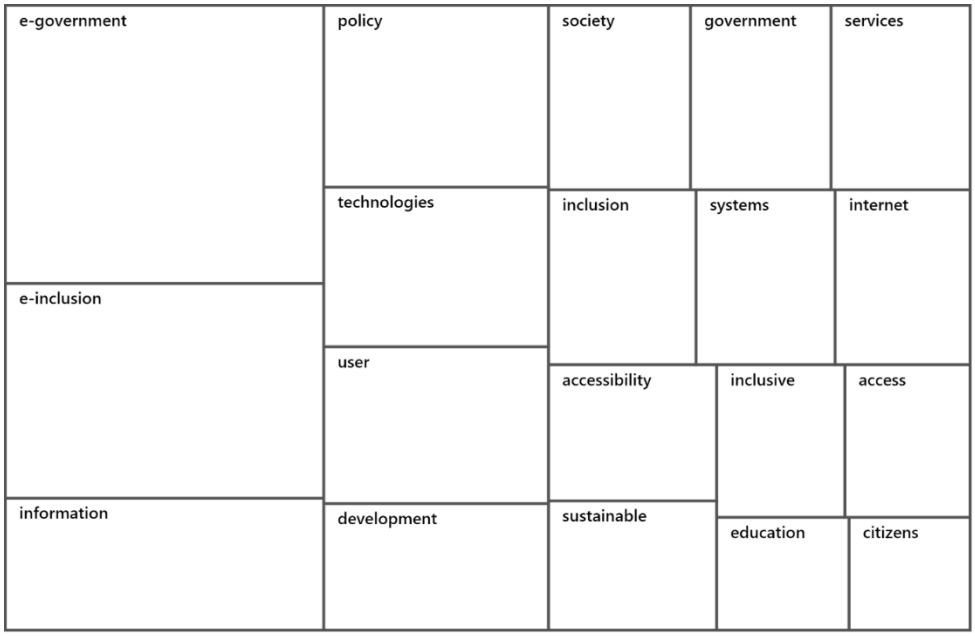
Wordcloud is a useful tool to highlight key terms that frequently appear in research on e-Government and social inclusion. In this context, words such as social, government, inclusion, digital, information, development, divide, and services are commonly found, reflecting the primary focus of this topic. The words social and inclusion represent the main objective of the research, which is how e-government can support social inclusion. Government highlights the important role of the government in providing digital services to the public (Astawa, 2023). Digital and information relate to the role of technology in facilitating access to information and public services (Sulasula & Moreno, 2023). Development signifies progress in creating more inclusive digital governance systems, while divide refers to the existing digital divide that hinders some people's access to government services. Finally, the word services emphasizes the importance of providing public services accessible to all segments of society through technology.

Overall, the words in this wordcloud reflect the main themes in e-government research related to social inclusion, focusing on efforts to bridge the digital divide, expand access to information and government services, and ensure that all individuals, regardless of social or economic background, can use technology to access the services they need.

Picture. 8
Wordcloud of E-Government in Social Inclusion
Source: (Scopus Database processed using Nvivo 12 Plus)

In research on e-Government and Social Inclusion, concept mapping can be used to illustrate the relationships between various interconnected key themes. In this case, core themes such as e-government, e-inclusion, information, policy, technologies, user, development, society, inclusion, accessibility, sustainable, government, systems, inclusive, education, services, internet, access, and citizens interact in the context of inclusive digital governance. For instance, e-government plays a vital role in introducing policies that support inclusive services for the broader public, which in turn rely on technology to ensure accessibility and access for all citizens (Castro & Lopes, 2023).

Moreover, technology is a key factor in developing more inclusive governance systems, ensuring that society is not excluded from accessing government services. Internet access is also crucial in enhancing e-inclusion, enabling citizens to easily access various digital services, closely related to education and the use of technology to improve quality of life (Chohan & Hu, 2022). Sustainable systems, created through the application of appropriate technology, can support e-government in providing efficient and inclusive services to all segments of society. Through concept mapping, these relationships can be clearly depicted, showing how different aspects of e-government support one another to achieve social inclusion and better governance.



Picture. 9
Dominant Concept of E-Government in Social Inclusion
Source: (Scopus Database processed using Nvivo 12 Plus)

CONCLUSSION

This study presents the main findings from a bibliometric analysis of the intersection between e-government and social inclusion, focusing on e-inclusion research. Using VOSviewer and NVivo software, the analysis identifies key trends, thematic clusters, and collaboration patterns across authors, institutions, and countries. Since 2005, research in this field has grown significantly, driven by global digital transformation and the demand for inclusive public services. The results highlight major themes such as digital access, empowerment, public policy, user experience, and trust, which reflect the complex relationship between technology and social equity. The mapping of dominant clusters demonstrates how current research addresses both technical and social aspects of digital governance, offering valuable insights for the advancement of inclusive digital policies.

However, the study also reveals limitations, particularly the relatively small number of consistent contributors and underexplored concepts such as sustainable development, budget control, and inclusive regulation. These gaps suggest the need for more focused and in-depth research. Future studies should continue to bridge theoretical and practical gaps by addressing digital inequality, enhancing cross-sector collaboration, and fostering innovation in inclusive digital governance. This research offers essential insights for scholars, practitioners, and policymakers aiming to design equitable and sustainable e-government frameworks that cater to the diverse needs of citizens in both developed and developing contexts.

REFERENCES

Ahmad, N., Alfira, S., & Paripurna, C. F. (2025). Corruption In Digital Transformation : A Case Study Of The Impact Of Misappropriation Of Kominfo 4g Bts Project Funds On E-Government Governance In Indonesia. *ARRUS Journal of Social Sciences and Humanities*, *5*(3), 1046–1057.

Almuwil, A., Weerakkody, V., & El-Haddadeh, R. (2011). A conceptaul study of the factors influencing e-inclusion. *Proceedings of the European, Mediterranean and Middle Eastern Conference on Information Systems - Informing Responsible Management: Sustainability in*

Emerging Economies, EMCIS 2011, *2011*(2008), 198–209.

Arief, M. F. (2022). Implementation Of Electronic Government At The Department On Integrated One Door Investment And Licensing Services, Deli Serdang Regency. *Inspirasi & Strategi (INSPIRAT): Jurnal Kebijakan Publik & Bisnis*, *12*(2), 59–68. https://doi.org/10.35335/inspirat.v12i2.60

Asadon, M. F. A., Brucal, A. P., Claveria, P. S. L., Lac-, J. T. N., Malang, B. P., & Malang, J. D. S. (2024). Enhancing Public Service Delivery and Citizen Participation : The Synergistic Effects of E-Governance and Social Media. *International Journal of Multidisciplinary: Applied Business and Education Research*, *5*(11), 4740–4758. https://doi.org/10.11594/ijmaber.05.11.35

Astawa, I. P. P. (2023). E-Government: Integrated, Fast, Certain and Easy Public Service Quality Management in Bali. *Management and Applied Social Studies Review*, *1*(1), 29–35. https://doi.org/10.32795/massiv.v1i1.3892

Banabakova, V. (2024). Digitalization Opportunities and Necessary Digital Skilss in Social Logistics (Specigically Logistics in Servicing the Unemployed, Disabled and Disadvantaged People). *SCIENCE International Journal*, *3*(4), 167–173. https://doi.org/10.35120/sciencej0304167b

Bertot, J. C., Jaeger, P. T., & Hansen, D. (2012). The impact of polices on government social media usage: Issues, challenges, and recommendations. *Government Information Quarterly*, *29*(1), 30–40. https://doi.org/10.1016/j.giq.2011.04.004

Castro, C., & Lopes, I. C. (2023). E-government as a tool in controlling corruption. *International Journal of Public Administration*. https://doi.org/10.1080/01900692.2022.2076695

Chadwick, D., Richards, C., Molin, M., & Strnadová, I. (2023). Digital inclusion and people with learning disabilities. *British Journal of Learning Disabilities*, *51*(2), 119–124. https://doi.org/10.1111/bld.12530

Chohan, S. R., & Hu, G. (2022). Strengthening digital inclusion through e-government: cohesive ICT training programs to intensify digital competency. *Information Technology for Development*, *28*(1), 16–38. https://doi.org/10.1080/02681102.2020.1841713

Ciancarini, P., Giancarlo, R., & Grimaudo, G. (2024). Digital Transformation in the Public Administrations: A Guided Tour for Computer Scientists. *IEEE Access*, *12*, 22841–22865. https://doi.org/10.1109/ACCESS.2024.3363075

Doran, N. M., Puiu, S., Bădîrcea, R. M., Pirtea, M. G., Doran, M. D., Ciobanu, G., & Mihit, L. D. (2023). E-Government Development—A Key Factor in Government Administration Effectiveness in the European Union. *Electronics (Switzerland)*, *12*(3). https://doi.org/10.3390/electronics12030641

Dugdale, A., Daly, A., Papandrea, F., & Maley, M. (2005). Accessing e-government: Challenges for citizens and organizations. *International Review of Administrative Sciences*, *71*(1), 109–118. https://doi.org/10.1177/0020852305051687

Erissa, D., & Widinarsih, D. (2022). Akses Penyandang Disabilitas Terhadap Pekerjaan: Kajian Literatur. *Jurnal Pembangunan Manusia*, *3*(1). https://doi.org/10.7454/jpm.v3i1.1027

Esteban-Navarro, M. Á., García-Madurga, M. Á., Morte-Nadal, T., & Nogales-Bocio, A. I. (2020). The Rural Digital Divide in the Face of the COVID-19 Pandemic in Europe—Recommendations from a Scoping Review. *Informatics*, *7*(4), 1–18. https://doi.org/10.3390/informatics7040054

Farida, I., & Lestari, A. (2021). Implementation of E-Government as a Public Service Innovation in Indonesia. *RUDN Journal of Public Administration*, *8*(1), 72–79. https://doi.org/10.22363/2312-8313-2021-8-1-72-79

Gallagher, M., Najjuma, R., & Nambi, R. (2023). Bidi Bidi Creativity: The Liminality of Digital Inclusion for Refugees in Ugandan Higher Education. *Social Inclusion*, *11*(3), 309–319. https://doi.org/10.17645/si.v11i3.6686

Galushi, L. T., & Malatji, T. L. (2022). Digital Public Administration and Inclusive Governance at the South African Local Government, in Depth Analysis of E-Government and Service Delivery in Musina Local Municipality. *Academic Journal of Interdisciplinary Studies*, *11*(6), 116–126. https://doi.org/10.36941/ajis-2022-0154

Good Things Foundation. (2011). *What is the National Digital Inclusion Network?* https://www.goodthingsfoundation.org/our-services/national-digital-inclusion-network.html

Grimsley, M., & Meehan, A. (2007). e-Government information systems: Evaluation-led design for public value and client trust. *European Journal of Information Systems*, *16*(2), 134–148. https://doi.org/10.1057/palgrave.ejis.3000674

Haniko, P., Sarumaha, Y. A., Satria, E., HS, N., & Anas. (2023). Building Students' Critical Thinking Skill through Problem-Based Learning Model. *Widya Accarya*, *14*(1), 92–98. https://doi.org/10.46650/wa.14.1.1409.92-98

İri, R., & Ünal, E. (2024). Bibliometric Analysis Bibliometric Analysis of Research (1980-2023). *Ahi Evran Üniversitesi Sosyal Bilimler Enstitüsü Dergisi*, *10*(2), 386–403. https://doi.org/10.31592/aeusbed.1446738

Isma, A., Hajar Dewantara, Andi Naila Quin Azisah Alisyahbana, & Salim Diarra. (2025). Digital Literacy, Environment, and E-Commerce Use Toward Digital Entrepreneurial Intentions via Social Media among Generation Z Students. *Quantitative Economics and Management Studies*, *6*(1), 57–68. https://doi.org/10.35877/454ri.qems3853

Kadewandana, D., & Kaligis, R. A. W. (2024). The Role of Information and Communication Technology (ICT) in E-Government: A Literature Review of Sustainable Development Aspects. *CoverAge: Journal of Strategic Communication*, *14*(2), 91–101. https://doi.org/10.35814/coverage.v14i2.6339

Karunia, R. L., Budiaji, R., Suzana, R., Dewi, K. S., & Prasetyo, J. H. (2023). Analysis of the Factors that Affect the Implementation of E-Government in Indonesia. *International Journal of Membrane Science and Technology*, *10*(3), 46–54. https://doi.org/10.15379/ijmst.v10i3.1216

Kondowe, C., & Chigona, W. (2019). *Social Inclusion in the Digital Era: Rethinking Debates and Narratives in the World Bank Report.* https://digitalcommons.kennesaw.edu/cgi/viewcontent.cgi?article=1019&context=acist

Liotta, L. A. (2023). Digitalization and Social Inclusion: Bridging the Digital Divide in Underprivileged Communities. *Global International Journal of Innovative Research*, *1*(1), 7–14. https://doi.org/10.59613/global.v1i1.2

Mervyn, K., Simon, A., & Allen, D. K. (2014). Digital inclusion and social inclusion: a tale of two cities. *Information Communication and Society*, *17*(9), 1086–1104. https://doi.org/10.1080/1369118X.2013.877952

Morte-Nadal, T., & Esteban-Navarro, M. A. (2022). Digital Competences for Improving Digital Inclusion in E-Government Services: A Mixed-Methods Systematic Review Protocol. *International Journal of Qualitative Methods*, *21*, 1–9. https://doi.org/10.1177/16094069211070935

Mukminto, E., Martitah, M., Damayanti, R., Wedhatami, B., & Mardhiyana, R. (2023). Public Services Versus Covid-19: Participation of Villagers in Public Service based on E-Government in Pandemic. *Jurnal Pengabdian Hukum Indonesia (Indonesian Journal of Legal Community Engagement) JPHI*, *6*(1), 1–16. https://doi.org/10.15294/jphi.v6i1.60650

Popovych, V., Shcherbyna, S., Barshatska, H., & Baluchtina, O. (2021). E-government Potential in Social Service Delivery: Regional Context. *SHS Web of Conferences*, *100*, 04003. https://doi.org/10.1051/shsconf/202110004003

Rafiq, M. I. (2023). Bridging the Digital Divide through Social Inclusion: A Cross- Country Analysis Study of Pakistan, India and Bangladesh. *Journal of Economic Impact*, *5*(1), 69–75. https://doi.org/10.52223/jei5012308

Ranchordás, S. (2020). The Digitization of Government and Digital Ecxlusion. In G. F. Mendes & C. B. Morais (Eds.), *Direito Publico E internet: Democraca, Redes Socials E Regulacao Do Ciberespaco* (pp. 3–7).

Reisdorf, B., & Rhinesmith, C. (2020). Digital inclusion as a core component of social inclusion. *Social Inclusion*, *8*(2), 132–137. https://doi.org/10.17645/si.v8i2.3184

Retnowati, R., Wahyudi, E. N., & Anis, Y. (2022). Mengukur E-Participation Masyarakat di Era Transformasi Digital dengan Metode Multi Factor Evaluation Process (MFEP). *JUSIFO (Jurnal*

Sistem Informasi), *8*(2), 51–60. https://doi.org/10.19109/jusifo.v8i2.13774

Reyna, J., Gabardo, E., & Santos, F. de S. (2020). Electronic Government, Digital Invisibility and Fundamental Social Rights. *Sequencia*, *41*(85), 30–50. https://doi.org/10.5007/2177-7055.2020v41n85p30

Salahudin, S., Nurmandi, A., & Loilatu, M. J. (2020). How to Design Qualitative Research with NVivo 12 Plus for Local Government Corruption Issues in Indonesia? *Jurnal Studi Pemerintahan*, *11*(3). https://doi.org/10.18196/jgp.113124

Serang, A. E. D. (2024). Banking Digitalization in the Era of Revolution 5 . 0 : Opportunities and Risks for Financial Inclusion. *Nomico Journal*, *1*(9), 13–23.

Sira, M., & Kuzior, A. (2025). Digitalization of Government Management Processes in the Context of Sustainable Development. *Management Systems in Production Engineering*, *33*(2), 289–310. https://doi.org/10.2478/mspe-2025-0029

Soriano, A. J. Z. G. de, Montoro, M. A., & Colón, A. M. O. (2024). Digital Teaching Competence and Educational Inclusion in Higher Education. A Systematic Review. *Electronic Journal of E-Learning*, *22*(1), 31–45. https://doi.org/10.34190/ejel.22.1.3139

Sulasula, J., & Moreno, F. (2023). Public Service Delivery System in State Universities and Colleges: Controversies and Best Practices Across Frontline Services. *SSRN Electronic Journal*, 1–22. https://doi.org/10.2139/ssrn.4521207

Sumpena, A., Pratiwi, G., Nurul, I., Arum, T., Farodiyah, N. N., Apriliyanti, N. A., Ilmu, M., & Universitas, K. (2024). Tren Penelitian dengan Teori Unified Theory of Acceptance and Use of Technology (UTAUT) dalam Jurnal Scopus Berdasarkan Analisis Bibliometrik. *Dewatuna: Jornal of Cummunication and Islamic Broadcasting*, *4*(6), 2128–2144. https://doi.org/10.47467/dawatuna.v4i6.5619

Supardi, S., Agustinova, D. E., Putro, S. T. J., & Septiantoko, R. (2023). E-Services: Implementation of Digital-Based Public Services in The 4.0 Era. *Athena: Journal of Social, Culture and Society*, *1*(3), 87–92. https://doi.org/10.58905/athena.v1i3.40

Trubetskaya, O. V. (2020). Digitalization Of The State Sector: Foreign Experience And The Russian Future. *European Proceedings of Social and Behavioural Sciences*, 275–279. https://doi.org/10.15405/epsbs.2020.04.35

Vaismoradi, M., Jones, J., Turunen, H., & Snelgrove, S. (2016). Theme development in qualitative content analysis and thematic analysis. *Journal of Nursing Education and Practice*, *6*(5). https://doi.org/10.5430/jnep.v6n5p100

Vandenbroeck, M. (2007). Beyond anti-bias education: Changing conceptions of diversity and equity in European early childhood education. *European Early Childhood Education Research Journal*, *15*(1), 21–35.

Verdegem, P. (2011). Social media for digital and social inclusion: Challenges for information society 2.0 research & policies. *TripleC*, *9*(1), 28–38. https://doi.org/10.31269/triplec.v9i1.225

Wulandari, D. S., & Cahyonowati, N. (2024). A Bibliometric Examination of Studies on Corporate Tax Avoidance Utilizing Vosviewer Software. *Jurnal Proaksi*, *11*(2), 265–281. https://doi.org/10.32534/jpk.v11i2.5587

Wulur, F. C., & Mulyanti, D. (2023). Analisis Pengaruh Pemanfaatan Media Sosial Dalam Penyebaran Layanan Informasi Publik Di Pemerintah. *MANABIS: Jurnal Manajemen Dan Bisnis*, *2*(1), 37–45. https://doi.org/10.54259/manabis.v2i1.1549

Yasir, A., Hu, X., Ahmad, M., Rauf, A., Shi, J., & Nasir, S. A. (2020). Modeling impact of word of mouth and E-government on online social presence during COVID-19 outbreak: A multi-mediation approach. *International Journal of Environmental Research and Public Health*, *17*(8). https://doi.org/10.3390/ijerph17082954