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BIBLIOMETRIC ANALYSIS: THE INFLUENCE OF GOVERNMENT SOCIAL MEDIA ON IMPROVING THE QUALITY OF PUBLIC SERVICES (2020–2024)

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Abstract
This study aims to examine the influence of social media on public policy using a bibliometric approach. The increasing use of social media as an effective communication tool between governments and the public, particularly during the COVID-19 pandemic, forms the basis of this research. Data were collected from the Scopus database, identifying 312 relevant publications from 2020 to 2024 using the keywords social media, government, and policy. The methodology involved bibliometric analysis through keyword selection, data collection, and visualization using VOSviewer software to map relationships among authors, institutions, and countries. The analysis generated three types of visualizations: network, overlay, and density, providing insights into research trends and scholarly collaboration. The study identified the article by Xue (2020), titled Twitter Discussions and Emotions About the COVID-19 Pandemic: Machine Learning Approach, as the most influential publication, with 258 citations and a total link strength of 41. The findings reveal major research themes related to COVID-19, including public health measures and social stigma. This study highlights the growing trend toward data-driven and collaborative approaches in public policy formulation and identifies potential research gaps for future studies.

Resumo
Este estudo tem como objetivo examinar a influência das redes sociais nas políticas públicas por meio de uma abordagem bibliométrica. O uso crescente das redes sociais como ferramenta eficaz de comunicação entre os governos e o público, especialmente durante a pandemia da COVID-19, constitui a base desta pesquisa. Os dados foram coletados da base de dados Scopus, identificando 312 publicações relevantes de 2020 a 2024 por meio das palavras-chave redes sociais, governo e política. A metodologia envolveu análise bibliométrica por meio da seleção de palavras-chave, coleta de dados e visualização utilizando o software VOSviewer para mapear as relações entre autores, instituições e países. A análise gerou três tipos de visualizações: rede, sobreposição e densidade, fornecendo insights sobre tendências de pesquisa e colaboração acadêmica. O estudo identificou o artigo de Xue (2020), intitulado "Discussões e emoções no Twitter sobre a pandemia da COVID-19: abordagem de aprendizado de máquina", como a publicação mais influente, com 258 citações e uma força de ligação total de 41. Os resultados revelam os principais temas de pesquisa relacionados à COVID-19, incluindo medidas de saúde pública e estigma social. Este estudo destaca a tendência crescente de abordagens colaborativas e baseadas em dados na formulação de políticas públicas e identifica

Keywords: Bibliometric Analysis. E-Government. Government. Public Service. Social Media.

possíveis lacunas de pesquisa para estudos futuros.

Palavras-chave: *Análise Bibliométrica. Governo Eletrônico. Governo. Serviço Público. Mídias Sociais.*

1 INTRODUCTION

The development of information and communication technology over the past decade has brought significant changes to various aspects of society, including government. Social media has become one of the most important and widely used tools by the public (Kavanaugh, A. L., Carroll, J. M., Rosson, M. B., Zin, T., & Reese, 2012). Not only has it become essential for the public, but social media also facilitates organizations and companies in disseminating information to the broader community (Reddick, 2010). One of the key impacts of this development is the government's use of social media as a platform to interact and communicate with citizens. Platforms such as Facebook, Twitter, and Instagram enable faster, more interactive, and more transparent communication between the government and the public (Bertot *et al*., 2010a).

The influence of social media cannot be separated from the current era of globalization, where the internet has become a fundamental necessity across all facets of life. The internet now serves as the backbone of communication and transformation across economic, social, cultural, and political domains (Esponda, I., & Hainmueller, 2016). Through social media, governments can disseminate information, respond to complaints, and encourage public participation in decision-making processes—ultimately aiming to enhance the quality of public services.

Improving the quality of public services is a core objective of e-government, which involves the use of digital technologies to facilitate public access to government services and the communication of government policies. The shift of public services to digital platforms represents a significant step forward in rethinking how public services are delivered (Grant, 2013). Quality public services encompass several dimensions, including responsiveness, transparency, accountability, and service effectiveness (Gao & Lee, 2017). In this context, social media plays a vital role by providing a platform for

direct public feedback to government agencies. Increased citizen engagement is expected to help governments better understand public needs and improve service delivery.

Despite the growing use of social media in the public sector, studies examining its concrete impact on the quality of public services remain limited. While several studies have evaluated the effectiveness of social media in governmental contexts, the findings are often inconsistent and lack a comprehensive understanding of its influence on service delivery (Mergel, 2013a). Moreover, many studies focus on specific cases or individual countries, limiting the ability to discern broader patterns or trends in the use of social media within public administration (Bertot *et al*., 2010b, 2010a; Lee *et al*., 2014a).

The expansion of information and communication technologies has indeed reshaped many aspects of modern life, including how governments operate. Social media has emerged as a popular tool that facilitates rapid, transparent, and interactive communication. In public administration, it allows governments to more effectively disseminate information, respond to public concerns, and foster citizen participation (Lee *et al*., 2014b). It not only enhances communication but also offers opportunities to improve public services by making them more responsive to the needs of the population. Furthermore, social media has the potential to strengthen transparency and accountability, key components of technology-based public services (Chandrasekaran *et al*., 2020).

In the context of e-government, social media holds strategic potential to support improved public service delivery. E-government entails leveraging digital technologies to facilitate public access to services and enhance quality through the integration of information systems (Hua, Jinlin; Shaw, 2020). Social media complements this framework by accelerating government-public communication, enabling greater citizen participation, and enhancing policy effectiveness. However, studies examining the effectiveness of integrating social media with e-government platforms remain limited, and the outcomes are not yet comprehensively understood (Khan *et al*., 2020).

Although the role of social media in supporting public services is widely acknowledged, current research still faces several limitations. Many studies tend to be descriptive in nature, lacking rigorous quantitative analysis to measure impacts on key indicators such as responsiveness, transparency, and accountability (Holtz *et al*., 2020) Additionally, most research focuses on country-specific cases, making it difficult to identify global patterns or trends (Wong *et al*., 2021). This limitation is further

compounded by a lack of cross-cultural studies that account for the social, political, and cultural factors influencing the success of social media implementation in public service contexts.

To address these limitations, bibliometric analysis presents a highly relevant methodological approach. Bibliometric studies offer a systematic framework for exploring the research landscape of a specific domain, such as the use of social media by governments to enhance public service quality. Using data from the Scopus publication database, this study aims to identify key trends, collaborative networks among researchers, institutions, and countries, and dominant topics within scholarly discourse. It also evaluates bibliometric indicators such as citation counts, research network strength, and thematic developments over time. In the context of social media, bibliometric analysis can highlight the extent to which themes such as transparency, accountability, and public participation have been explored, while identifying existing research gaps. As such, bibliometric analysis not only provides a comprehensive overview of the current state of research but also contributes to the formulation of strategic recommendations for future scholarly inquiry.

2 METHOD

This study aims to identify and visualize publications related to the influence of social media on public policy in the context of government. Employing a quantitative approach, the study utilizes visualization techniques and bibliometric analysis to explore the research landscape within the domains of social media, government, and public policy. Bibliometric analysis incorporates both evaluative and descriptive approaches to outline key trends, including the distribution of publications, collaboration among researchers, and the characteristics of the available literature (Garfield, 2009). In addition, bibliometric visualization methods are applied to map the structure of the research field, highlighting relationships between topics, authors, institutions, and countries, thereby offering comprehensive insights into the dynamics and evolving research networks in this domain.

The research dataset comprises 312 publications retrieved from the Scopus database using the keywords *social media*, *government*, and *policy*. All analyzed

publications are indexed in Scopus, ensuring the credibility and relevance of the literature. This method facilitates the identification of current research trends and helps reveal potential research gaps that may guide future investigations. Consequently, this study serves as a strategic foundation for mapping the direction of further research on the utilization of social media in public policy by governments.

a. Research Indicators

The analyzed publications were selected from the most recent four-year period (2020–2024) to ensure the relevance and currency of the data. The analysis was conducted using VOSviewer software, which produces three main types of visual displays:

- Network visualization, which maps relationships between research elements,
- Overlay visualization, which illustrates temporal dynamics and trends over time, and
- Density visualization, which identifies high-density areas of research focus.

Key indicators used in this analysis include the number of publications, number of citations, and total links between entities. Collectively, these indicators offer in-depth insights into research trends, inter-researcher relationships, and the strength of collaborative research networks within the field.

b. Research Procedure

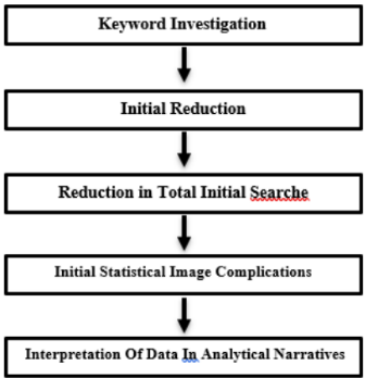
The researcher collected metadata from the Scopus database, focusing on the period 2020–2024, and limited to publications related to the use of social media in public policy implementation by governments. VOSviewer software was used to analyze, evaluate, and visualize the collected bibliometric data, including details on authors, countries, institutions, journals, and keyword occurrences.

VOSviewer is a widely used software tool for generating network visualizations of commonly used terms in specific research fields (Orduña-Malea & Costas, 2021a, 2021b; Sovacool *et al*., 2022; van Eck & Waltman, 2017). It is also considered a practical and popular application for bibliometric analysis (Shah *et al*., 2020; van Eck & Waltman, 2010). Beyond network visualization, VOSviewer facilitates analysis of a field's evolution based on commonly occurring terms (Guleria & Bains, 2021; Huang *et al*., 2022).

The bibliometric analysis was carried out in five stages as outlined by (Csomós & Lengyel, 2022a), and illustrated in Figure 1:

Figure 1

Stages of the Bibliometric Analysis Method



1. Keyword Identification – Relevant keywords were determined in advance, focusing on *social media* and *government policy*.
2. Initial Filtering – The Scopus database was used to search for articles based on these keywords.
3. Data Reduction – The initial search results were manually imported into VOSviewer and filtered to eliminate excessive or irrelevant data.
4. Preliminary Statistical Compilation – Data were categorized by variables such as country, institution, journal, and author; bibliographic and keyword co-occurrence analyses were also performed.
5. Data Interpretation and Visualization – VOSviewer was used to analyze and visualize the data, producing maps that link keywords and present meaningful insights for further research development.

3 RESULTS

The data analysis method employed in this study is the deductive approach, wherein the analysis begins with general findings or theories and progresses toward more specific insights. This includes bibliographic pairings by country, institution, journal, publication, and author, as well as keyword co-occurrence, to guide readers from broader

information to more specialized topics (Ersozlu & Karakus, 2019; Lee *et al*., 2014a). The number of documents and links among countries, institutions, journals, authors, and keyword co-occurrences were visualized using VOSviewer, through both Network Visualization and Overlay Visualization. These visualizations were considered in presenting the results of the bibliometric analysis (Donthu *et al*., 2021; Ellili, 2022).

From the Scopus database, we collected publications related to social media, governance, and policy from the period 2020 to 2024, identifying a total of 312 publications. The distribution by year is presented in the table below:

Table 1

Number and Percentage of Publications in Scopus-Indexed Journals

Number	Publication Year	Total Publications	Percentages
1	2024	48	15%
2	2023	80	26%
3	2022	61	20%
4	2021	72	23%
5	2020	51	16%
	Total	**312**	**100%**

Subsequently, we collected bibliographic pairings by country, as visualized in Figure 2 using network visualization. A minimum publication threshold of five documents per country was applied. The visualization illustrates the research collaboration relationships between countries based on Scopus data using the keywords “social media,” “government,” and “policy.” Following the network visualization, we analyzed the publication distribution and citation frequency per country. The United States ranks first with 74 publications and 1,801 citations, followed by China with 55 publications and 1,212 citations. Additional data are presented in Table 2 below:

Figure 2

Network Visualization of Country Bibliographic Pairs

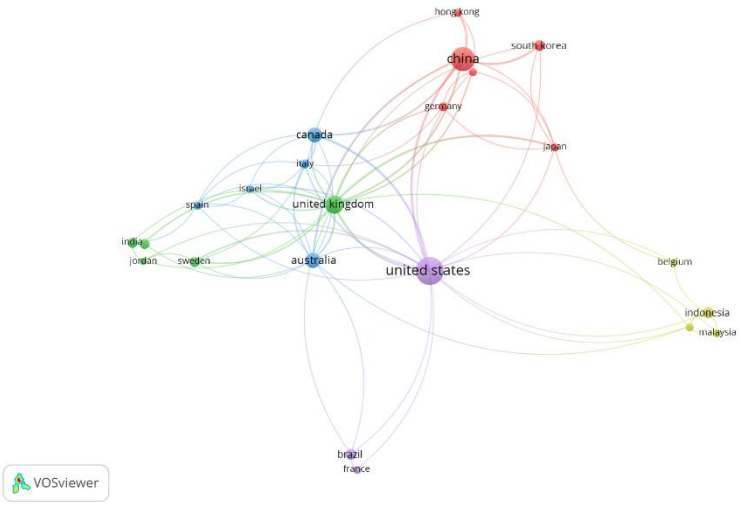


Table 2

Distribution of Publications and Citations by Country

Country	Documents	Citations
United States	74	1801
China	55	1212
United Kingdom	32	1009
Canada	23	1041
Australia	22	798
South Korea	13	96
Indonesia	12	116
Brazil	12	59
Sweden	10	224
India	10	124
South Africa	10	76
Italy	9	665
Germany	8	266
Saudi Arabia	7	24
Hongkong	7	76
France	7	60
Japan	6	647
Spain	6	713
Singapore	6	300
Malaysia	6	37

We then conducted a linkage analysis between journals to identify those with significant influence and frequent usage by other journals. The analysis, presented in Table 3 and Figure 3, also aims to observe how journals interconnect around specific

research themes or topics. Total link strength was used to assess the strength of relationships between journals based on co-citation frequency.

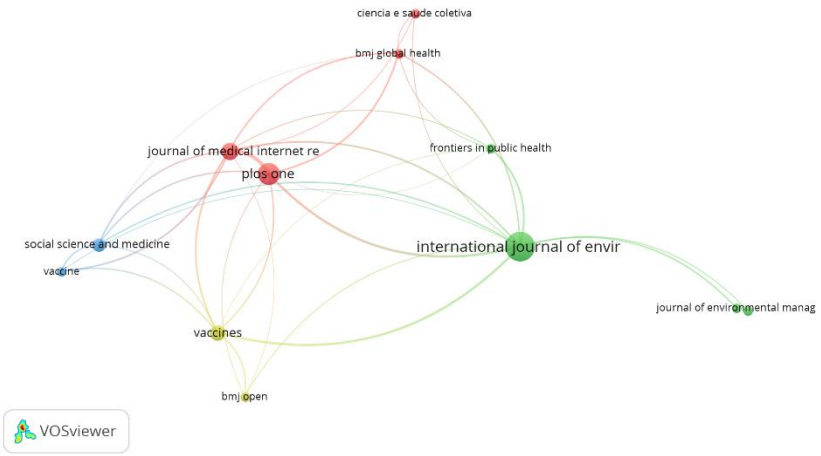
Table 3

Distribution of Scientific Journals

Source	Documents	Cititations	Total Link Strength
International Journal of Environmental Research and Public Health	36	904	40.50
Journal of Medical Internet Research	13	517	43.27
PLOS ONE	20	256	40.50
Journal of Environmental Management	4	193	4.00
Vaccine	4	167	12.00
Social Science and Medicine	8	108	15.00
Vaccines	10	68	24.00
BMJ Global Health	4	54	13.00
Sustainability (Switzerland)	4	50	2.00
BMJ Open	4	45	6.00
Ciencia e Saude Colectiva	4	22	3.00
Frontiers In Public Health	4	7	8.00

Figure 3

Visualization of Scientific Journal Distribution

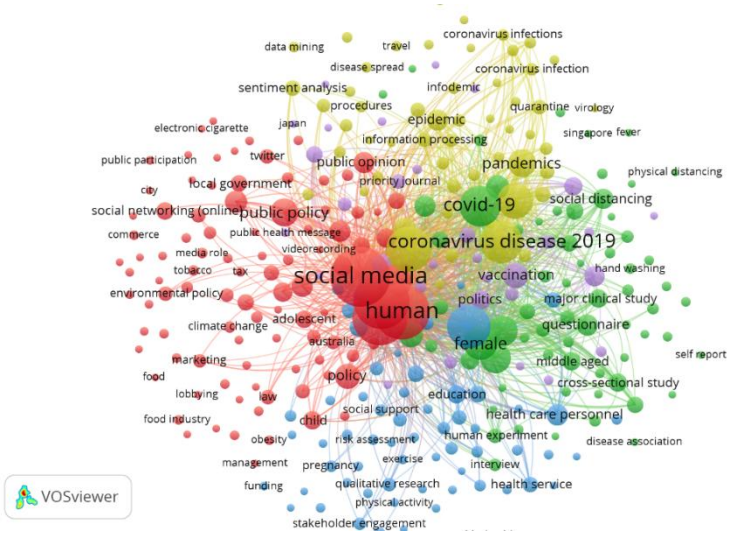


Next, a network visualization of keyword co-occurrence was created using VOSviewer. This analysis helps identify the primary themes frequently discussed in the literature. The visualization maps the relationships between keywords, as shown by the

connecting lines between nodes. Larger and thicker nodes indicate higher frequency and dominance of those keywords in the analyzed publications. The resulting visualization is shown in Figure 4.

Figure 4

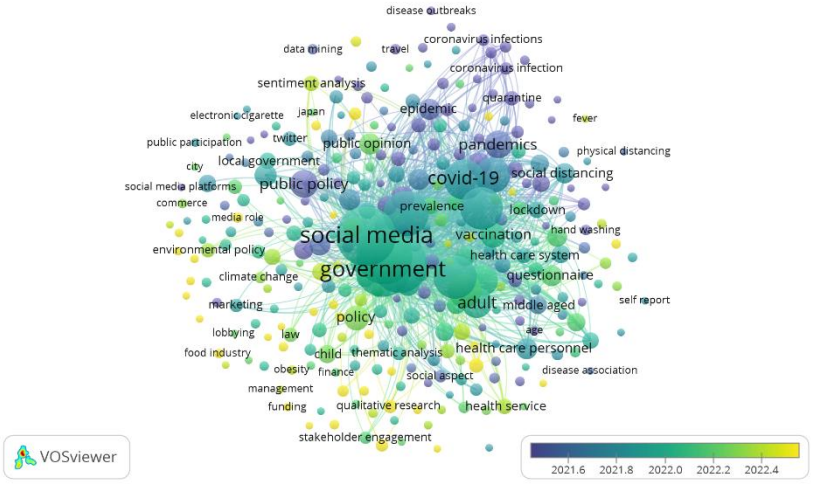
Keywords Extracted from All Journal Publications



A temporal keyword analysis was also conducted to map the distribution of keywords over time. The color gradient in the graph (blue to green to yellow) indicates the period during which keywords were most frequently used, based on the time scale from 2021 to early 2022, as depicted in Figure 5.

Figure 5

Keyword Distribution by Year of Journal Publication

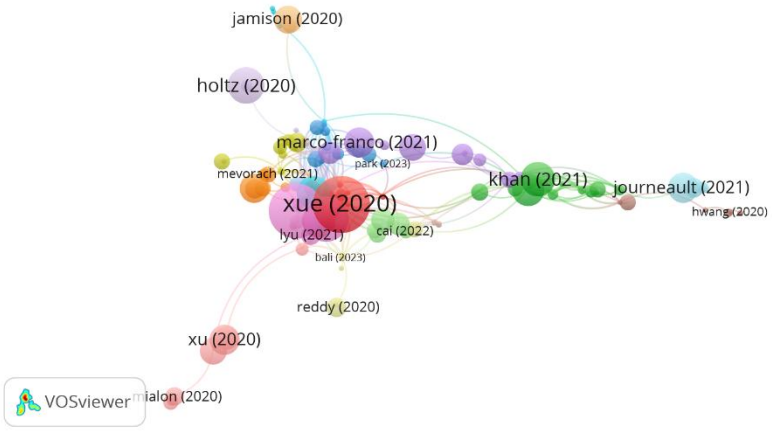


The visualization in Figure 5 illustrates that keywords in blue typically appeared earlier, while those in yellow represent more recent research trends. This aids in tracking topic development over time. The interconnection between keywords is also evident—keywords like "COVID-19" are strongly linked to “social distancing,” “vaccination,” and “public policy,” suggesting that research on COVID-19 spans multiple thematic dimensions.

The final analysis involves visualizing the bibliographic network to show relationships between authors based on citations and collaborations, as illustrated in Figure 6.

Figure 6

Network Visualization of Author Relationships



The objective of this analysis is to identify influential authors within a given field, based on citation frequency and co-authorship patterns. Each node represents an author, where node size indicates the author's contribution or influence. Larger nodes, such as that of Xue (2020), highlight authors with significant impact. Lines connecting the nodes signify collaborative relationships or common citation references. Node colors represent clusters of authors working on similar topics, thereby highlighting specific research focuses.

This analysis helps researchers understand collaboration structures within a field, recognize leading authors or “opinion leaders” in the academic community, and identify potential future collaborators. Additionally, it provides insight into research trends based on author influence and interconnectivity, thereby informing publication and research strategy development.

4 DISCUSSION

The number and percentage of publications, as shown in Table 1, reveal that the highest number of publications occurred in 2023, with 80 publications, accounting for 26% of the total. This marks an increase from 2022, which had 61 publications, and until October 2024, 48 publications have been recorded, with expectations of a decrease from the 2023 levels. All 312 publications analyzed in this study were sourced from articles

published in Scopus-indexed journals. Researchers used both the number of publications and the document count in ranking institutions and journals.

The network visualization of publications by country suggests that the United States occupies a central role in global collaboration. This visualization highlights the United States' dominant position in collaborative research related to social media, government, and policy. This aligns with findings from (Mergel, 2013b), which discusses the adoption of social media by the US government and its impact on public policy. Mergel identified that the US government actively integrates social media technologies for enhancing transparency and communication with the public. The United States' central position in this visualization also reflects the strength of its academic and research networks in this domain (Kaplan & Haenlein, 2010; Landsbergen, 2010).

4.1 Western country cluster: the UK, Canada, and Western Europe

Countries such as the UK, Canada, and several Western European nations (e.g., Germany and Italy) exhibit strong ties to the United States, forming a collaborative cluster. These nations are noted for their emphasis on open government and the use of social media to promote transparency and combat corruption (Bertot *et al*., 2010b). Their shared approach to open policy and social media regulation likely explains their close collaboration in this field. (Meijer *et al*., 2012) also confirmed that open government is a core value in Western countries, enhancing research collaboration between these nations on public policy issues involving social media.

4.2 East Asia cluster: China, South Korea, and Japan

In the network visualization, China, South Korea, and Japan form a tight cluster, indicating strong collaborative patterns in social media and policy research. This observation is consistent with Zhao, Lee, and Kim (2021), who discuss the regulatory frameworks of East Asian countries concerning social media, aiming to maintain social stability and support government interests. In these countries, social media policies are more tightly controlled and regulated, which results in research focusing on managing and monitoring social media within government frameworks.

4.3 Southeast Asia cluster: Indonesia and Malaysia

Indonesia and Malaysia, though smaller in representation within the visualization, are still connected to the United States and some European nations. Rahman and Tan (2021) noted that Southeast Asian countries, particularly Indonesia and Malaysia, are increasingly engaged in global research on social media regulation and government policy. These countries often reference regulations from the United States and Europe when developing their own national policies. (Gupta *et al*., 2013) also highlighted the importance of social media in public health contexts in the region, focusing on regulatory and policy measures.

The visualization demonstrates the dominance of developed countries, such as the United States and European nations, in the research on social media and government policy. This can be attributed to the fact that countries with advanced technological infrastructure and robust academic resources are better positioned to lead research in this area (Kaplan & Haenlein, 2010). The dominant role of developed nations suggests that while developing countries contribute to this field, their involvement is often more limited.

Based on the analysis of the distribution of journal publications by country, as shown in Table 2, the United States has achieved the highest distribution of academic publications and citations between 2020 and 2024, with 74 articles and 1,801 citations. This dominance is attributed to several interrelated factors. Primarily, the United States benefits from a robust research infrastructure, supported by substantial funding from both the public and private sectors, particularly in COVID-19-related research. Institutions such as the National Institutes of Health (NIH) have directed significant resources toward pandemic-related studies, resulting in a surge in publications (Klingelhöfer *et al*., 2021; Pérez-Lara *et al*., 2024). The presence of leading academic institutions, such as Harvard and Johns Hopkins, has further facilitated high-quality research and international collaboration, enhancing the volume and impact of publications (Rawashdeh *et al*., 2023). The urgency of the COVID-19 pandemic has expedited the dissemination of research findings, often through preprints and open-access platforms, thereby increasing citation opportunities (Gomez *et al*., 2022). The collaborative nature of research in the United States, characterized by numerous co-authorships with international scientists, has further

amplified the visibility and citation potential of American publications (Gomez *et al*., 2022). These factors collectively reinforce the United States' leading role in global academic research during this period, highlighting its capacity for innovation and responsiveness to emerging health challenges (Csomós & Lengyel, 2022b).

Analyzed through the network visualization of journals using VOSviewer, as shown in Table 3 and Figure 3, the *International Journal of Environmental Research and Public Health* holds a dominant position with a total link strength of 40.50 and the highest number of documents (36 documents), underscoring its significant influence in research related to environmental and public health. Similarly, the *Journal of Medical Internet Research* demonstrates the highest total link strength (43.27) with 13 documents, reflecting its pivotal role in cross-disciplinary discussions, particularly in digital health technologies. Other journals, such as *PLOS ONE*, *Vaccine*, and *Social Science and Medicine*, form a cluster of closely connected publications, highlighting the integration of research in immunization, global health, and social sciences. Journals like *BMJ Global Health* and *Frontiers in Public Health* contribute a global and community-based perspective to academic discussions.

The occurrence of differently colored clusters indicates thematic groupings, such as environmental health (green cluster) and health technology (red cluster). The interconnections between clusters reflect the growing trend of multidisciplinary research, particularly in areas like the intersection of public health, environmental impact, and digital technology. High citation counts, such as those for the *International Journal of Environmental Research and Public Health* (904 citations) and the *Journal of Medical Internet Research* (517 citations), further emphasize their status as key references in the scientific literature. Journals with lower total link strength, such as *BMJ Open* and *Sustainability (Switzerland)*, still contribute significantly by focusing on specific topics. Overall, the network underscores the importance of cross-disciplinary collaboration in advancing innovation and evidence-based policy in public and environmental health.

Table 3 also displays Scopus-indexed documents related to social media, government, and policy published in various journals. Twelve journals with the highest number of documents, citations, and total link strength are depicted in Figure 3. These journals make substantial contributions in linking various aspects of government

research, facilitating the formulation of comprehensive and sustainable policies. Below is a summary of each journal's role in these linkages:

1. **The Journal of Medical Internet Research (JMIR)** provides data and analysis on how digital technologies, such as health apps, telemedicine, and social media, support health policy. Research from this journal illustrates how digital technologies enable governments to disseminate health information swiftly, improve access to health services, and monitor health data in real-time, which aids in the design of more effective, data-driven policies. JMIR specifically focuses on applying digital technologies to enhance public health. Studies demonstrate that patient-centered digital health records improve engagement, disease understanding, and self-management, which ultimately improves clinical outcomes. These technologies can also alleviate strain on health systems by ensuring adherence to recommended services and treatment regimens, contributing to more effective policy-making (Rouleau *et al*., 2023).
2. **The International Journal of Environmental Research and Public Health** and the *Journal of Environmental Management* provide evidence on the connection between environmental health and public well-being. Their articles are frequently utilized by governments to formulate environmental policies addressing health impacts, such as air pollution control, sanitation, and climate change adaptation. For instance, research on the impact of air quality on respiratory disease rates can guide policies aimed at reducing industrial emissions (Rouleau *et al*., 2023).
3. **Sustainability (Switzerland)** offers insights on how governments can integrate sustainability into health and environmental policies. Research published in this journal supports governments in developing strategies that simultaneously consider ecological, economic, and social factors. For example, it discusses sustainable medical waste management policies that promote both public health and environmental sustainability (Watts *et al*., 2015).
4. **Vaccine** and **Vaccines** contribute research on vaccine effectiveness, distribution, and logistical challenges. This research helps governments develop national vaccination policies that ensure equitable distribution, raise public awareness, and address social barriers to immunization. This body of work assists in crafting

health policies that are not only evidence-based but also tailored to the specific needs of various communities.

5. **Social Science and Medicine**, **Frontiers in Public Health**, and **PLOS ONE** emphasize the importance of understanding the social, economic, and cultural context in health policy formulation. These journals highlight how social factors, such as equitable access to health services, affect the effectiveness of policies. Their research aids governments in developing inclusive health policies that address the needs of vulnerable groups.

Research in these journals demonstrates that cross-faceted integration, such as combining technology with environmental sustainability or utilizing digital solutions for public health services, can enhance government policies. For example, a technology-driven health policy designed to support rapid pandemic responses involves analyzing health data from both environmental and societal perspectives, leading to more comprehensive and effective outcomes.

The research presented in these journals assists governments in designing evidence-informed policies by utilizing technology and cross-sectoral approaches to holistically address health and sustainability challenges. For further details or specific references, the links and journals mentioned above can be consulted. Overall, this trend highlights the shift in government policy focus toward data-driven decision-making, adaptability to technological advancements, and an emphasis on cross-sector collaboration to ensure the sustainability and well-being of the global community.

Based on Figure 4, the network visualization analysis reveals that journals related to social media, government, and policy exhibit keywords with high ratios, such as "social media," "COVID-19," "health care policy," and "public policy." These keywords reflect the focus of numerous research articles on these themes and their interrelations with other topics. Several health-related keywords can be identified in the green and blue clusters, indicating that the analyzed literature explores various aspects of health, particularly in the context of the COVID-19 pandemic. Notable health-related keywords include: Coronavirus Disease 2019 (COVID-19), pandemics, vaccination, health care personnel, health services, major clinical studies, public health campaigns, disease outbreaks, quarantine, and virology.

- Green Cluster: Focuses on pandemics, vaccination, and COVID-19.

- Blue Cluster: Associated with health services, clinical studies, and health personnel.

From the figure, the most frequently cited topics are indicated by the largest nodes, where the size of the circle reflects the frequency of occurrence or the number of relationships (connections) with other keywords. The largest node represents "social media," indicating its centrality in the literature. Another prominent keyword closely related to many other topics is "Coronavirus Disease 2019 (COVID-19)," reflecting its significance during the pandemic and its research prominence in this period.

Figure 4 also illustrates several color-coded clusters representing thematic relationships or interrelated topics. The red cluster emphasizes social media, public opinion, and content analysis, exploring the impact of social media on policy and public perception. The green cluster is closely related to COVID-19, vaccination, and pandemics, indicating research examining pandemic response, vaccination efforts, and health policy. The yellow cluster relates to epidemiological analysis, including infection control, quarantine, and public health. The blue clusters are concerned with aspects of health services, clinical studies, and health personnel, highlighting the importance of medical professionals and health research.

The results of the analysis suggest that the central topics in the literature revolve around the role of social media, health policy, and the response to the COVID-19 pandemic. This is further confirmed by the overlay visualization, which groups articles by their publication year.

The trends observed in the visualization of publications between 2020 and 2024, as shown in Figure 5, reveal distinct clusters marked by different colors, reflecting the publication period or relevance of research. Blue clusters represent relatively older topics (2021). Green clusters encompass topics from the mid-2021 to early 2022 period. Yellow clustersrepresent newer topics from late 2022 onwards. The blue cluster highlights early research foundations focused on social media analysis, public opinion, and public policy connections. The yellow cluster contains terms such as "pandemics," "vaccination," and "infection control," reflecting new research trends shaped by the COVID-19 pandemic. Additionally, terms like "major clinical studies" and "health care personnel" suggest an increasing focus on health workers and clinical research.

Thus, it can be concluded that the research map illustrates a transition from older topics like social media analysis and public opinion (2021) to newer research centered on pandemics, vaccination, and public health (2022 and beyond). This shift is largely driven by the global impact of COVID-19 and its subsequent effects on clinical studies and health care personnel.

According to the bibliometric analysis presented in Figure 7, which visualizes the relationships between authors using VOSviewer, the article by Xue (2020), entitled *Twitter Discussions and Emotions About the COVID-19 Pandemic: A Machine Learning Approach*, stands out as a central work in the research network concerning the influence of social media on public policy. With the highest citation count (258) and link strength (41), this article holds significant sway among researchers examining the COVID-19 pandemic. The article identifies five main COVID-19-related themes that emerged from discussions on Twitter, including public health measures, social stigma, COVID-19 news, and the global impact of the pandemic (Xue *et al*., 2020, pp. 1, 10). The study highlights a prevailing sentiment of fear in discussions about new COVID-19 cases and deaths, suggesting that public sentiment is heavily influenced by the evolving nature of the pandemic. The broad relevance of the findings from this article makes it a key reference point for many subsequent studies.

In addition, the article by Chandrasekaran (2020) titled *Topics, Trends, and Sentiments of Tweets About the COVID-19 Pandemic: A Temporal Infoveillance Study* also demonstrates significant relevance, with 159 citations and 28 link strengths, positioning it as a key reference that enriches academic discussions in this area (Chandrasekaran *et al*., 2020). Other articles, such as those by Lyu (2021) and Zagidullin (2021), also show considerable influence, reflecting intensive collaboration and substantial relevance within the research network (Li *et al*., 2023; Zagidullin *et al*., 2021).

In the network visualization, the size of the nodes and the thickness of the connection lines represent the level of importance of each article and the relationships between studies. Notably, Xue (2020) appears as the largest node, signifying its ability to connect various themes and authors. The connection lines extending from this article to others highlight its role as a foundational study, frequently used as both a theoretical and methodological reference for subsequent research.

Overall, this analysis illustrates the hierarchy within the literature of the research field, with pivotal articles, such as those by Xue (2020) and Chandrasekaran (2020), serving as central points that underpin the development of subsequent studies. These articles provide clear insights into the dynamics of research networks and interaction patterns, reflecting collaboration and the global distribution of knowledge within the sector (Boulianne, 2015).

5 CONCLUSION

The conclusion of this research confirms that social media has a significant influence on public policy, particularly in the context of communication between government and society. Using a bibliometric approach, this study successfully identified 312 relevant publications from the period 2020 to 2024, indicating a growing academic interest in the interaction between social media and public policy. In this context, bibliometric analysis proves to be an effective tool for understanding research trends and dynamics, as well as for identifying collaborations among researchers, institutions, and countries involved in this field (Abduh & Anwar, 2024; Rahimallah *et al*., 2022).

The bibliometric methods applied, including the selection of appropriate keywords and the use of VOSviewer software, allowed the researchers to map collaboration networks between researchers, institutions, and countries. The resulting network visualization, overlay visualization, and density visualization provide a clear overview of emerging research trends and areas of high-density focus. This suggests that research in this area is not only evolving quantitatively but also qualitatively, with increasing collaboration among researchers from various disciplines (Sjoraida *et al*., 2021).

The analysis results indicate that the article by Xue (2020) titled *Twitter Discussions and Emotions About the COVID-19 Pandemic: A Machine Learning Approach* serves as a key reference in discussions on the impact of social media on public policy, with 159 citations and 28 link strengths. It focuses on important themes that emerged during the COVID-19 pandemic. The findings underscore the role of social media in shaping public opinion and public response to health policies, while also

revealing the challenges governments face in managing information and social stigma that arise on these platforms.

This research also identifies gaps in the existing literature, particularly the lack of cross-cultural research that considers the social, political, and cultural factors influencing the effective use of social media within the public sector. As such, it not only provides insights into existing trends and dynamics but also calls for further research to explore the impact of social media in a broader and more diverse context.

Overall, this study provides a strategic foundation for further research on the utilization of social media in public policy. By identifying research gaps and recommending a focus on under-researched aspects, this work contributes to a better understanding of how social media can be effectively used to enhance transparency, accountability, and public participation in government decision-making processes.

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