Systematic mapping of recent scientific production in government communication

Mapeamento sistemático da produção científica recente em comunicação governamental

Mapeo sistemático de la producción científica reciente en la comunicación gubernamental

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ABSTRACT

Government communication in contemporary societies is characterized, in addition to the dissemination of information, by transparency, collaboration, and the encouragement of active citizen participation in public policies. The objective was to analyze the scientific production on government communication between the years 2018 and 2022 through a systematic mapping, a type of bibliometric study, based on articles available in the Scopus and Web of Science databases. The main conclusions indicate that this topic has consistent publication numbers, with a growth trend. A notable feature is that the theme recurs in research around the world, but the collaboration and interaction of results between countries remain low. No authors or journals were identified as having a high concentration of publications. Emerging themes were identified beyond the pandemic context: public policy, government, public opinion, and social media. The article contributes to the critical development of the field of government communication.

Keywords: public communication; public information; public governance; digital democracy; citizen participation.

Introduction

Government communication originates from public communication, which, in turn, is situated in the public space and occupies a privileged place in natural communication, being a process that encompasses the entire society by ensuring not only information but also dialogue and encouragement of public participation (Zémor, 1995). Public participation, meaning citizens actively involved in government decisions and processes, is closely linked to democracy (Taylor; Draai; Jakoet-Salie, 2020).

Thus, democracy cannot exist without communication, and the evolution of contemporary democracy implies a greater role for public communication, both as a relationship between public institutions and citizens and for the promotion of transparency and public participation (Paricio-Esteban *et al.*, 2020). In this sense, a possible definition of public communication is "communication aimed at promoting citizenship and democracy, in a scenario where the State, government, and society interact to address issues of public interest" (Silva; Vicentin, 2018, p. 184). Public communication influences a country's historical events, as well as impacts politics, society, and long-term communication practices (Coelho, 2018).

One of the dimensions of public communication is government communication, which, in an institutional sense, highlights the distinction between public communication and government communication. Cezar (2018) defines government communication as communication conducted between and with the State, government entities, and society. The focus of government communication is to convey information to the population about government

positions and public policies, aiming to generate arguments for use in spaces of dialogue and participation, as well as to legitimize political action and create public consent (Cezar, 2018; Moreno Manzo; Navarro Chávez, 2019).

For Mori *et al.* (2020), government communication addresses the non-political and non-partisan communication activities of governments concerning policies, institutional activities, and services, which can occur through both physical and virtual channels. Thus, a possible definition of government communication is communication that is goal-oriented within the government and between the government and its stakeholders. This communication enables public sector functions within their specific cultural and/or political contexts, aiming to build and maintain public good and trust between citizens and authorities (Canel; Aho-Luomo, 2019).

In traditional, hierarchical government communication, the lines between internal and external communication, between the center and the periphery, and between formal and informal aspects are institutionalized and protected in the daily practices of governments. These practices are applied to deal with categorically defined issues rather than transversal complexities that require diverse sources of knowledge and contribution (Pan, 2020). Conversely, agile government communication should seek, in addition to transparency, to make citizens much more informed and engaged in public life (Mori *et al.*, 2020). To achieve this, impartiality is considered a significant aspect of government communication (Barbera; Borgonovi; Steccolini, 2016).

In a study on government reputation—understood as the collective evaluation of stakeholders regarding a government—Moreno Manzo and Navarro Chávez (2019) identified that government communication is the most valuable dimension of a government's reputation. They thus consider it vital that governments value government communication, adopt a strategy integrated with the government's values, mission, and vision, and take into account the different stakeholder groups when making decisions. Thus, the current context is characterized by transparency, collaboration, and active citizen participation in local policies. Government communication must go beyond merely disseminating information about services, activities, projects, and public administrative procedures to actively engage citizens in the design and development of public policies (Campillo-Alhama; Martínez-Sala, 2017).

Most contemporary research on government communication examines media aspects, focusing primarily on key leaders and national governments (Akhmad, 2020). However, although less common, there are studies that address the communication of local governments, as the proximity of local governments implies a greater ability to build trust-based relationships with citizens (Paricio-Esteban *et al.*, 2020). As a result, municipal government communication faces a scenario where the population increasingly demands information through various means of communication and participation (Liuta; Mershchii, 2020).

Government communication encompasses different dimensions, such as internal communication within the government, external communication and public relations, city branding, innovation in information mechanisms, and listening and responding to citizens' demands (Moreno Manzo; Navarro Chávez, 2019).

Government communication addresses four aspects that can be viewed as a progressive scale of participation: the first aspect is dissemination, aimed at contributing to greater transparency of government outcomes; the second aspect is neutrality, which is essential for citizens to perceive the communication as non-government propaganda; the third aspect is participation, focusing on strengthening stakeholder engagement; and the fourth aspect is the ability of government communication to impact citizens to the extent of influencing government decision-making (Barbera; Borgonovi; Steccolini, 2016).

In early 2020, the World Health Organization issued its highest-level international alert due to the outbreak of the new Coronavirus (PAHO/WHO, 2021), leading the world to face a pandemic caused by COVID-19. This situation required governments to quickly adapt their internal operations and public service delivery and to communicate these changes clearly to the public while undertaking extensive government communication efforts to promote social distancing, hand hygiene, and other non-pharmaceutical interventions (Zeemering, 2021). In times of crisis, when external and extraordinary risks arise, governments have an even greater responsibility to disseminate accurate, reliable, and timely information, which requires new communication approaches (Mori *et al.*, 2020).

The purpose of this article was to analyze the scientific output on government communication from 2018 to 2022 through a systematic mapping, a type of bibliometric study, conducted using the Scopus and Web of Science (WoS) databases.

Systematic mapping of scientific production offers researchers and professionals interested in the topic a comprehensive view of different subjects within the study area based on scientific publications (Kitchenham; Budgen; Brereton, 2010). Publishing in scientific journals indexed in international databases represents the body of knowledge produced by researchers in a particular field (Menezes; Caregnato, 2018; Sousa; Fontenele, 2019). The mapping process allows for the establishment of connections between published articles, thus helping the field to understand new themes and trends and to establish new research directions (Carvalho *et al.*, 2019; Zupic; Čater, 2015).

The systematic mapping is a bibliometric study aimed at identifying studies within a specific area to highlight contributions and gaps in the field, and to enhance the understanding of knowledge production in a specific domain (Dias *et al.*, 2020; Klock, 2018; Moro Dos Santos; Alves, 2020).

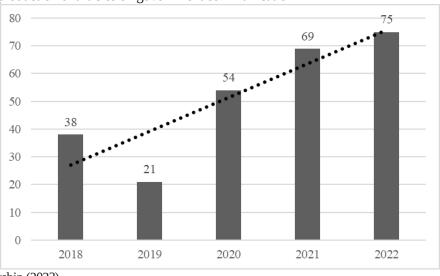
In a systematic mapping, the research stages are: planning, execution, and analysis of results (Dias *et al.*, 2020; Klock, 2018). During the planning phase, the following criteria were established: (i) Seach string: "government communication" OR "public sector communication" OR "communication management in the public sector" OR "comunicação do setor público" OR "comunicação do governo" OR "comunicação governamental" OR "gestão da comunicação no setor público"; (ii) Document type: peer-reviewed article (Kitchenham; Budgen; Brereton, 2010); (iii) Publication year: to identify recent scientific output, the last five years – 2018 to 2022 – were selected; (iv) Databases to be consulted: considering their coverage in the field of Applied Social Sciences and their ability to export complete bibliometric data for software processing, the Scopus and WoS databases were chosen (Carvalho *et al.*, 2019; De Abreu; Turini; Santos, 2021; Lopes; Farias, 2020; Quevedo-Silva *et al.*, 2016; Sousa; Fontenele, 2019).

The execution took place in January and February 2023, following the protocol proposed by Baldam (2021), and utilized the Bibliometrix software with the Biblioshiny interface (Aria; Cuccurullo, 2017). The analysis considered the following variables: publication year of the article, country of origin, number of citations by country and by article, number of collaborations among authors from different countries, number of articles by country, by author, and by journal, impact index of authors among the articles in the sample, keyword co-occurrence, and co-citation networks.

Result presentation and analysis

The application of the search string in the Scopus database returned 220 documents, while the WoS database returned 156 documents. After removing duplicate articles (119 documents), a total of 257 documents remained and comprised the analyzed sample, with the results presented below.

The annual production of articles on government communication during the studied period is shown in Chart 1.





As shown in Chart 1, the field of government communication experienced a decrease in the number of articles from 2018 to 2019, followed by a significant increase in publications. This trend may suggest that the COVID-19 pandemic heightened interest in the topic. The trend line – represented by the dotted line – indicates that the field is on the rise.

From the perspective of scientific article production by country, Figure 1 presents a map highlighting the countries that have produced articles on government communication—the darker the color, the greater the number of articles produced.

Source: Own authorship (2023)

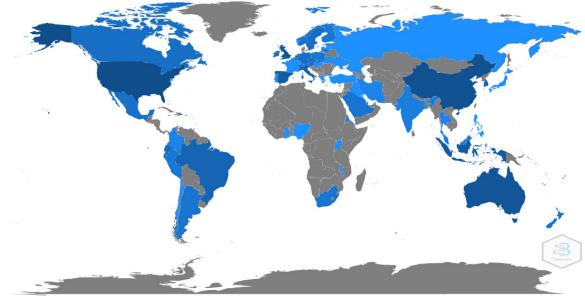


Figure 1. Map of scientific production in Government Communication by country

Source: Own authorship (2023) with Bibliometrix software

In the map of Figure 1, 46 different countries are highlighted, encompassing all continents, indicating a global characteristic for the scope of this study, as it pertains to a research area of worldwide interest. The ten countries with the highest production—United States (19), China (18), Australia and the United Kingdom (14), Brazil and Indonesia (10), Spain (9), Italy (7), South Korea (6), and Mexico (5) – account for 43.58% of global production.

Looking at the number of citations, 41 countries received at least one citation, with a total of 1,591 citations. The five countries with the most citations – United Kingdom (279), United States (266), China (161), Spain (144), and Australia (133) – represent 61.78% of the citations, indicating a high concentration of citations in these countries. When considering the ten countries with the highest number of citations – adding to the previous list: Netherlands (94), Germany (72), Iran (60), Italy (58), and Estonia (42) – 82.27% of the mapped citations are reached.

Regarding the language of the analyzed articles, there was a predominance of publications in English: 81.32%. Following that, publications in Spanish account for 11.67%, and in Portuguese, 4.28%. Additionally, there were a small number of publications in French, Italian, and Russian. It can be inferred, therefore, that publications in English have a greater potential to receive citations.

Although Brazil is the sixth country that produces the most articles on government communication, it ranks only 21st among the most cited countries (9 citations). The internationalization of science in Brazil, despite policies evolving from an individual focus to an institutional model, is still a poorly consolidated practice. In the field of Communication, there is limited attention to the international classification of journals, possibly due to the strong presence of Portuguese-language journals, which adequately meet national academic standards (De Albuquerque *et al.*, 2023). Proficiency in English for submission to well-regarded international publications presents a barrier for Brazilian researchers, impacting the number of citations (Silva; Vicentin, 2024). Thus, although national scientific production on government communication is significant, the results show that this production does not lead to a high impact on the international scientific community.

The last result from the perspective of country evaluation concerns collaboration among authors from different countries. A total of 67 collaborations involving 37 different countries were identified. In Figure 2, the map shows the collaboration flows that had at least two occurrences, with the thickness of the flow being greater the higher the number of verified collaborations.

The highest frequency of collaboration occurred between China and the United Kingdom – 4 occurrences. Notable collaborations also include those established between Spain and Ecuador, and between Spain and Portugal – each with 3 occurrences. In Figure 2, collaboration flows with 2 occurrences each appear between: China and the Netherlands; Slovakia and Ukraine; Spain and Mexico; the United States and South Korea; the United States and Poland; and the United Kingdom and Indonesia. According to Hilário, Grácio, and Guimarães (2018), collaboration among authors opens the possibility for research with different approaches, greater rigor, and density.

Brazil had only one identified collaboration, with Ireland, which occurred just once. Although the lack of collaborations with other countries may restrict the realities explored by Brazilian articles, Brazilian science faces

challenges beyond internationalization, such as the need for integration with public policies and the economy to generate innovation and social benefits, along with the fact that attention to locally relevant topics is also important to avoid neglecting regional potentialities (Santin; Vanz; Stumpf, 2016).

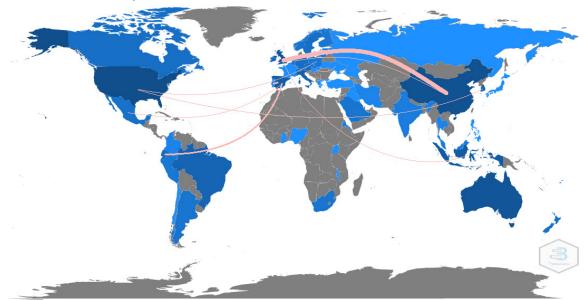


Figure 2. Collaboration Map Between Countries in Government Communication

Source: Own authorship (2023) with Bibliometrix software

Regarding authorship of articles on government communication, a total of 632 authors were identified, with 63 in single-authored documents and 569 authors in multiple-authored documents. Table 1 shows the most productive authors in the field of government communication, adopting a criterion of at least 3 published articles, either individually or in co-authorship. In the same Table 1, the country of the author, the h-index, and the number of citations is listed.

Position	Author	Country	Articles	h-index	Citations
1	Hansson, Sten		6	4	46
2	Lovari, Alessandro		5	3	59
3	D'Ambrosi, Lucia		3	2	11
4	DePaula, Nic		3	3	95
5	Ducci, Gea		3	2	6
6	Materassi, Letizia		3	3	6
7	Page, Ruth		3	1	4

Source: Research data (2023)

Table 1 demonstrates that the theme of government communication has a low concentration of articles in relation to authorship, as only 7 authors have published 3 or more articles. Sten Hansson is the most productive and impactful author. The variable 'impact', measured in this study by the h-index, is a relevant concept in bibliometrics and relates the number of citations received by the author to the number of published works (Sousa; Fontenele, 2019). Notably, Italy contributes significantly, with four authors among the most productive. Brazil does not have any authors among the most productive, despite being the sixth country in the world in terms of article production. Given the large number of publications available in the Scopus and WoS databases, it is unlikely that a few authors or journals would concentrate a large number of publications.

Regarding the most cited articles, Table 2 lists the 9 articles that have received at least 50 citations.

Position	Title	Authors	Year	Citations
1	Public perceptions and experiences of social distancing and social isolation during the COVID-19 pandemic: a UK-based focus group study	Williams et al.	2020	189
2	Toward effective government communication strategies in the era of COVID-19	Hyland-Wood <i>et al</i> .	2021	89
3	Toward a typology of government social media communication: Democratic goals, symbolic acts and self- presentation	DePaula; Dincelli; Harrison	2018	81
4	Taking Action on Air Pollution Control in the Beijing- Tianjin-Hebei (BTH) Region: Progress, Challenges and Opportunities	Wang et al.	2018	81
5	An Analysis of Government Communication in the United States During the COVID-19 Pandemic: Recommendations for Effective Government Health Risk Communication	Kim; Kreps	2020	79
6	Government Intervention, Risk Perception, and the Adoption of Protective Action Recommendations: Evidence from the COVID-19 Prevention and Control Experience of China	Duan <i>et al</i> .	2020	73
7	Behavioral measures to fight COVID-19: An 8-country study of perceived usefulness, adherence and their predictors	Margraf; Brailovskaia; Schneider	2020	61
8	Covid-19 communication management in Spain: Exploring the effect of information-seeking behavior and message reception in public's evaluation	Moreno; Fuentes-Lara; Navarro	2020	60
9	An integer wavelet transform image steganography method based on 3D sine chaotic map.	Valandar <i>et</i> <i>al</i> .	2019	60

Table 2. Most Cited Articles on Government Communication

Source: Research data (2023)

Table 2 demonstrates that, in recent years, the field of government communication has focused on the impact of the COVID-19 pandemic, as 6 out of the 9 most cited articles address the pandemic scenario. Williams *et al.* (2020) addressed the reality of the United Kingdom; Hyland-Wood *et al.* (2021) presented communication strategies for crisis management; Kim and Kreps (2020) analyzed the situation in the United States; Duan *et al.* (2020) researched the panorama in China; Margraf, Brailovskaia, and Schneider (2020) investigated people's behavior in eight countries— France, Germany, Poland, Russia, Spain, Sweden, the United Kingdom, and the United States; and Moreno, Fuentes-Lara, and Navarro (2020) explored the situation in Spain.

On the other hand, 3 articles did not address pandemic-related topics: the article "In Search of a Typology of Government Communication on Social Media: Democratic Objectives, Symbolic Acts, and Self-Presentation" by DePaula, Dincelli, and Harrison (2018) reports on research conducted in various local governments in the United States. The authors identified four communication practices: (i) information provision: related to the one-way practice of information sharing; (ii) input-seeking: related to the two-way practice of consultation; (iii) online dialogue and offline interaction: related to the networked practice of active participation; and (iv) symbolic presentation: aimed at presenting the government favorably, taking a political stance, performing a symbolic act, or engaging in government marketing actions. Wang *et al.* (2018) suggest mechanisms for improving government communication related to air pollution in a region of China, while Valandar *et al.* (2019) have a different focus, related to data transmission security in government communication.

Regarding the scientific journals where the mapped articles were published, 201 sources were identified. Only the 4 journals listed in Table 3 published at least 4 articles on government communication.

Position	Journal	Country	Articles	
1	Public Relations Review		6	
2	Profesional de la Informacion	- (6 .)	5	
3	Frontiers in Psychology	+	4	
4	Partecipazione e Conflitto		4	

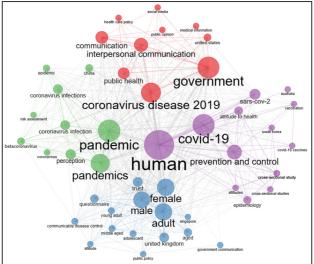
Table 3. Most Relevant Journals in Government Communication

Source: Own authorship (2023)

From Table 3, it can be observed that the journals that publish the most in the field of government communication belong to various research areas: public relations, information and communication, psychology, and political science. Regarding the geographical distribution of these journals, all are located in Europe – Netherlands, Spain, Switzerland, and Italy.

The next result of the mapping deals with the analysis of the relationship between the keywords of the mapped articles in the form of a co-occurrence network – Figure 3. The co-occurrence network is a network of relationships between keywords that appear in the same document, allowing for the identification of the structure of ideas, interactions, networks of concepts, and research trends (Sousa; Fontenele, 2019).

Figure 3. Co-occurrence Network of Keywords in Government Communication



Source: Own authorship (2023) with Bibliometrix software

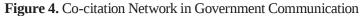
In Figure 3, a predominance of health-related keywords – due to the COVID-19 pandemic – can be observed across the four clusters that make up the co-occurrence network. However, it is possible to identify keywords related to this study and to each other: public policy, government, public opinion, and social media.

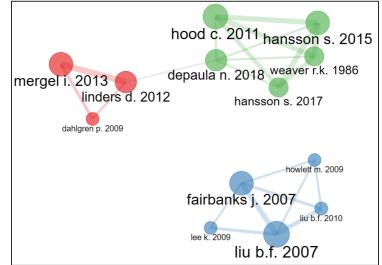
The interactive characteristics of communication on social media offer various opportunities for government communication. However, recent studies on the use of social media by governments show a growing number of uses for providing information or self-presentation, but a limited use of social media platforms for interaction or public engagement (Criado; Villodre, 2021; DePaula; Dincelli; Harrison, 2018; Nakazato; Silva; Vicentin, 2022; Pan, 2020; Stone; Can, 2020; Zeemering, 2021).

In turn, social media in the context of government communication impacts public opinion – a concept originating from different theoretical frameworks, with two main approaches: one that defines it as the simple sum of individual opinions, and another that considers variables such as environment, social interaction, and political preferences in its formation (Oliveira; Bermejo, 2017). As a consequence of this impact, new research avenues point to challenges for researchers when working with the vast amount of available data, particularly on social media, transforming it into knowledge about the impact on public policies, government itself, and public opinion.

Finally, regarding the references used, a co-citation analysis was conducted, which indicates the frequency of two references being cited together, referring to a bibliometric measure that assesses similarity (Zupic; Čater, 2015). The co-citation network is a way to connect the documents and indicates the references that appear most

frequently in the set of articles, the seminal authors, and the intellectual trends, allowing for insights into the patterns of the field of study (Carvalho *et al.*, 2019; Sousa; Fontenele, 2019). The main references used in the set of analyzed articles on government communication are illustrated through the co-citation network, Figure 4.





Source: Own authorship (2023) with Bibliometrix software

In Figure 4, three clusters can be clearly identified: (i) The red cluster primarily focuses on social media and features key works such as Mergel (2013), which proposes a framework for interpreting and measuring social media interactions in the public sector, and Linders (2012), which defines a typology for citizen co-production in the social media era, introducing the idea of a paradigm shift from e-gov to we-gov; (ii) The blue cluster deals with government communication practices and also includes two reference works: Fairbanks, Plowman, and Rawlins (2007), who discuss transparency in government communication, and Liu and Horsley (2007), who propose a public relations model for the public sector through a decision wheel for government communication; (iii) The green cluster has the work of DePaula, Dincelli, and Harrison (2018), which proposes a typology of government communication on social media, as a connecting link to the red cluster. The other works in the green cluster – Weaver (1986), Hood (2011), and Hansson (2015, 2017) – address how governments seek to avoid taking responsibility for negative issues through rhetoric, spin, bureaucracy, and self-preservation.

Final Considerations

Government communication plays a fundamental role in disseminating information and, in democratic societies, can safeguard public interests and encourage active citizen participation in public policies. The objective was achieved by conducting a bibliometric study, specifically a systematic mapping of scientific production on government communication from 2018 to 2022 in the Scopus and Web of Science databases.

The main findings of the research indicate that this field has a consistent number of publications with a growth trend, as 38 articles were identified in 2018 and 75 in 2022. Overall, government communication is a topic present in research around the world, with notable production and citation activity in the United States, the United Kingdom, China, Australia, and Spain, but with limited collaboration between countries. No authors or journals were identified as having a significant concentration of publications; however, it was possible to identify that authors such as Mergel, DePaula, Dincelli, and Harrison stand out in relation to government communication through social media, while Fairbanks, Plowman, and Rawlins are prominent regarding government communication practices. Thus, they are key references in this field. Emerging themes beyond the pandemic context were identified, such as public policy, government, public opinion, and social media.

In Brazil, despite the evolution of science internationalization policies, this process remains weakly established. Although, in terms of dissemination (publication in international journals), Brazil stands out as the sixth country with the highest production in the field, its results in terms of collaboration (co-authorship with authors from different countries) and impact (citations received) are less significant.

As practical implications, in the Brazilian context, it is suggested that researchers in the field of Government Communication seek journals that meet international classifications to increase impact and overcome the language barrier, aiming to advance collaborative research that addresses different realities, thus contributing to the greater internationalization of science.

The article contributes to the critical development of the field of government communication by allowing researchers to identify possibilities for future studies based on the results of this systematic mapping.

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