Deanship of Scientific Research

Government Crisis Communication in Academic Perspective:
A Bibliometric Study of Scientific Publications

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Abstract

Objectives: This study reviewed and examined various aspects of government crisis communication, emphasizing several subject areas, including crisis communication, risk management, and social media influence.

Methods: The study used bibliometric analysis to examine the trends and patterns of publications in government crisis communication. A comprehensive analysis of general information on government crisis communication, most productive countries, most popular scholarly sources, most productive affiliations, funding sources, most influential authors, and frequently occurring keywords revealed that "crisis communication" was the dominant issue. Other frequently occurring keywords were "COVID-19," "risk communication," "trust," and "social media."

Results: The study highlighted the importance of government communication and the role of digital channels such as Twitter in disseminating information during a crisis. Leading institutions, including the University of Maryland and Nanyang Technological University, and leading scholars participated in the study. However, there are certain limitations; industrialized countries predominantly influence research and social media.

Conclusions: Recommendations include formulating new ideas on crisis communication, researching non-digital media, and enhancing regional coverage. This research provides broader insights into how crisis communication strategies and their relevance to future crisis communication management continue to change and become increasingly complex.

Keywords: Government; Crisis communication; Bibliometric, Scopus database.

الاتصال الحكومي أثناء الأزمات من منظور أكاديمي دراسة ببليومترية للمنشورات:
دراسة ببليومترية للمنشورات العلمية

إف إكس آري أجونج براستوو¹، هاني حفيار¹، إبراهيم وادا ²، نجوين تان كانج ³، إني راتناساري ⁴
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ملخّص

الأهداف: قامت هذه الدراسة بمراجعة وفحص الجوانب المختلفة للاتصال الحكومي بالأزمات، مع التركيز على العديد من المجالات الموضوعية، بما في ذلك الاتصال بالأزمات، وإدارة المخاطر، وتأثير وسائل التواصل الاجتماعي.

طرق البحث: استخدمت الدراسة التحليل الببليومتري لفحص اتجاهات وأنماط المنشورات في اتصالات الأزمات الحكومية. كشف تحليل شامل للمعلومات العامة حول اتصالات الأزمات الحكومية، والدول الأكثر إنتاجية، والمصادر العلمية الأكثر شعبية، والانتماءات الأكثر إنتاجية، ومصادر التمويل والمؤلفين الأكثر تأثيرًا، أن "الاتصالات في أثناء الأزمات "كانت القضية المهيمنة. وكانت الكلمات الرئيسية الأخرى المتكررة هي "كوفيد"19-، و"الإبلاغ عن المخاطر"، و"الثقة"، و"وسائل التواصل الاجتماعي."

النتائج: سلطت الدراسة الضوء على أهمية الاتصال الحكومي ودور القنوات الرقمية مثل تويتر في نشر المعلومات في أثناء الأزمات. وشاركت في الدراسة مؤسسات رائدة، بما في ذلك جامعة ميريلاند وجامعة نانيانغ التكنولوجية، وكبار العلماء. ومع ذلك، هناك بعض القيود. تؤثر الدول الصناعية في الغالب على الأبحاث ووسائل التواصل الاجتماعي.

الاستنتاجات: تتضمن التوصيات صياغة أفكار جديدة حول التواصل في الأزمات، والبحث في وسائل الإعلام غير الرقمية، وتعزيز التغطية الإقليمية. يقدم هذا البحث رؤى أوسع حول كيفية استمرار تغير استراتيجيات الاتصال أثناء الأزمات وصلتها بإدارة اتصالات الأزمات في المستقبل وتصبح معقدة بشكل متزايد.

الكلمات الدالة: الحكومة؛ التواصل في الأزمات؛ الببليومترية، قاعدة بيانات سكوبس.

Introduction

In the current era of increasingly complex globalization, the government should be proactive (Anttiroiko, 2021) at the forefront of managing, organizing, and integrated crisis management strategies (Leonov et al., 2024), handling everything that might happen, from natural disasters, public health problems (Pareek & Sole, 2021; Wodak, 2021), and political to economic disruptions (Stroev & Lomovtseva, 2023). This requires a balance of government action to do something aggressive and the use of resources from the private sector and civil society for mutual order (Leonov et al., 2024), allowing government policies that can adapt to changing situations (Johanson et al., 2024). Good crisis coordination is needed to ensure and trigger the continuity of government activities and public safety to influence public opinion, public trust in government institutions, and the overall success of crisis management (Kapucu et al., 2024). Open and consistent communication methods can increase public compliance (Amalia et al., 2024). Therefore, delivering and disseminating clear and easy-to-understand information to the public is very important to ensure social health and stability.

To achieve effective communication, the government can conduct and provide accurate, credible, accountable, and transparent information to citizens to ensure that the information provided is valid and reliable. These strategies include justification, reasons, compensation, apologies, and emphasizing victimization (Amin et al., 2024). Building public trust and ensuring compliance with government directives requires transparency and consistency in communication (Amalia et al., 2024). In addition, timeliness, coordination, and accuracy are essential to maintaining public trust and managing crises effectively (Savoia et al., 2023). Post-crisis, governments often use image repair strategies to reduce criticism and showcase their initiatives (Şen, 2023). With the massive development of digital media today, complex communication processes and information dissemination can reach stakeholders more quickly. Academic interest in studying government crisis communication in recent decades has continued to grow in line with the times. Communication during political crises often involves verbal abuse and baseless accusations that result in moral and material losses. This causes the weakening of the abilities of others (opponents), which has the potential to divert focus from effective crisis management. Verbal aggression is a communication strategy and tool for managing crisis phenomena (Stavchenko et al., 2022). Verbal aggression aims to shape public opinion and political outcomes directly or indirectly (Greydina, 2022). Triantafillidou (2024) asserts that social media has revolutionized crisis communication by providing a platform for enhancing public-oriented interactions. Adequate public perception and trust management during a national crisis require timely and accurate information (Obi et al., 2024).

Researchers have examined multiple facets of this topic. This encompasses the methodologies and frameworks employed by governments, the role of the media in shaping public narratives, and the influence of cultural and political circumstances on effective communication. Despite the expansion of this literature, a thorough review of research trends and critical contributors in this domain has yet to be conducted. Since 2019, there has been a significant surge in publications concerning crisis communication. This escalation results from the crises' growing complexity and frequency, necessitating effective communication tactics (Molavi & Zhang, 2024). This bibliometric study addresses the gap in the academic landscape of Government crisis communication. This study identifies the most impactful research, authors, and institutions, along with developing trends and inaccuracies in the literature, by systematically analyzing academic publications. This study provides unique insights into the evolution of Government crisis communication as an academic discipline, highlighting its significance in tackling contemporary global issues through thoroughly examining research findings. This bibliometric methodology will track advancements in the field and illuminate future directions for research, policymaking, and practical uses of crisis communication.

LITERATURE REVIEW

Crisis communication aims to produce an ordinary meaning between the organization and its public (Coombs, 2018; Coombs et al., 2019; O'Brien & Federici, 2022). In addition, in the context of a crisis, the organization and the public together create steps to understand and act in conditions that are highly uncertain, demanding, and threatening" (Sellnow & Seeger, 2021). A crisis can also be considered as an unexpected and non-routine event or series of events that create a high level of uncertainty, posing a real or perceived threat to organizational goals (Seeger et al., 1998). Crisis communication is collecting, processing, and disseminating vital information to overcome a crisis (Coombs, 2007, 2010; Coombs et al., 2010)

A crisis can be understood as a perception of an unpredictable event that threatens essential stakeholder expectations related to health, safety, environmental, and economic issues and can seriously impact organizational performance and produce adverse outcomes (Coombs, 2014, 2016). The definition of crisis is focused on perception, meaning that the interpretation of the crisis is seen from how the public interprets the crisis event (Hearit & Courtright, 2003b; Mitroff & Alpaslan, 2020). The crisis is complicated and coupled with social construction. It is then interpreted as a determined event (Coombs & Holladay, 2010; Falkheimer & Heide, 2006; Hearit & Courtright, 2003a; Mazzei & Ravazzani, 2022) There are two approaches to understanding a crisis (Jacques, 2020; Jaques, 2010): first, treating the crisis as an event (Coombs & Holladay, 2015; Coombs, 2007; Coombs & Holladay, 2014; Fearn-Banks, 2016) and second, viewing the crisis as part of progress (Roux-Dufort, 2007).

Previous research related to crisis communication focused on crises experienced by companies (Coombs et al., 2010; Fearn-Banks, 2016; Seeger et al., 1998). For example, research on companies dominates crisis response strategies. Companies use strategies of apology, denial, and reaffirming the crisis as an accident (Coombs et al., 2010, 2016; Hearit, 1995, 2018, 2022; Heath & O'Hair, 2020; Wang et al., 2021; Zeng et al., 2018). Meanwhile, this study focuses on the crisis experienced by the government.

In crisis communication, the government plays an essential role because the public is very dependent on information from the government (Sunstein, 1986), controlling crisis risks (Stark et al., 2014) and protecting the public during a crisis (Laing, 2011; M. Lee et al., 2017; Lerouge et al., 2023; Liu & Levenshus, 2017; Losa Díaz et al., 2020; M. A. et al., 2021; Malecki et al., 2021; Zhong et al., 2023). Unfortunately, crisis communication carried out by the government is often far from public expectations (Falkheimer, 2009).

Several previous studies have assessed that the government is passive in crisis communication, such as rarely starting discussions and giving statements at the beginning. This passivity impacts comments and rumors, spreading and distorting them (Littlefield & Quenette, 2007; Vettenranta, 2015).

Research related to government crisis communication can be said to be minimal. Even previous research findings uniformly conclude that the government is passive. The government is considered reactive in commenting on the crisis events that occur. The government only reports on events based on facts and objectives. Research only focuses on the managerial aspects of government crisis communication, such as preparing and mobilizing crisis management resources (Fisher Liu et al., 2012; Graham et al., 2015; Stark et al., 2014).

Previous research on government crisis communication has also evaluated crises, types of crises, and crisis attributions using this approach as very formalistic and mechanical (Fearn-Banks, 2016; Seeger et al., 1998; Sellnow & Seeger, 2021). Several studies have found that crisis communication is a performative concept (Sellnow & Seeger, 2021). Previous research has focused on storytelling strategies and rhetoric used to overcome the crisis (Baniya & Chen, 2021; Clementson & Beatty, 2021; Dege & Strasser, 2024; E. Clementson & Xie, 2020; Ertem Eray, 2018; Hölzle et al., 2020; H. Lee & Jahng, 2020). Thus, it can be concluded that previous research has not discussed the dynamics and complexity of the crisis.

While many crisis communication studies examine the response strategies used by organizations to protect or restore their image and reputation among their external stakeholders, there is importance of the relationship between organizations and their internal stakeholders in crises (Frandsen & Johansen, 2011; Johansen et al., 2012). They suggest a phased approach (pre-crisis stage, crisis stage, post-crisis stage) as an effective tool to help organizations systematize crisis communication strategies to maintain or develop stronger relationships with stakeholders (Frandsen & Johansen, 2011; Johansen et al., 2012).

Research on government crisis communication began to emerge during the pandemic. Adequate and appropriate government communication impacts the success of saving human lives (Reynolds & Quinn, 2008). This form of communication includes speed of response, accuracy, and efficiency in managing emergencies (Coombs et al., 2019).

Côté and Lalancette (2021) found that crisis communication in the context of the COVID-19 pandemic in Quebec involved various strategies by the government. Starting in March 2020, the government routinely held daily press conferences broadcast live to the public through digital and information media. The conferences were led by Premier François Legault, with the participation of various ministers and health officials, such as former Health Minister Danielle McCann and Public Health Director Dr. Horacio Arruda—the press conferences aimed to provide up-to-date information on the situation and present specific measures and action plans. In addition, the government launched the #Propage l'info, pas le virus campaign, targeting young Quebecers.

The campaign involved voluntary endorsements from celebrities and influencers to encourage compliance with public health measures (Côté & Lalancette, 2021).

Covid-19 is a crisis that has a significant impact on government performance. Various efforts have been made in Indonesia; one way is to create a resilient village "Kampung Tangguh," as a community-driven resilience system program (Rohman et al., 2024). In addition, airports were also significantly affected during the pandemic. The Torino airport's model was created as a form of crisis management that has been approved by the Italian civil aviation authority (Rangone, 2023).

Government communication is essential because it plays a role in building institutional trust and credibility (Hyland-Wood et al., 2021). In a crisis, the government can also convey crisis messages to the public to counteract information fears (M. Lee et al., 2017). In addition, the government must follow the development of community needs and adjust information requests according to those needs (Reynolds & Quinn, 2008).

Previous research has examined and compared the communication practices of these two information providers, government announcements and media articles, during crises. Timeliness and credibility are emphasized in the managerial crisis communication literature as crucial components of an effective crisis response (Sellnow & Seeger, 2021). For example, whether a company will be perceived positively or negatively depends primarily on its capacity to respond quickly to a crisis scenario (Claeys & Coombs, 2020; Crijns et al., 2017; Fannes & Claeys, n.d.; Schoofs & Claeys, 2021). However, in some crises, the credibility of the crisis response determines the success of the crisis management effort and influences the level of damage caused by the crisis (Van Zoonen & Van Der Meer, 2015).

RESEARCH METHODS

This bibliometric study analyzes academic literature on government crisis communication to identify key research trends, prominent authors, significant publications, and emerging topics. This study employs a multi-stage methodology, including data collection, processing, and analysis. A systematic evaluation of the selected literature will employ quantitative bibliometric methods alongside visualization tools. Bibliometric analysis involves collecting data from electronic databases, including Web of Science and Scopus, followed by cleaning and refinement. This data is analyzed using various bibliometric techniques to derive relevant conclusions (Passas, 2024). Citations, publication output, and h-index are prevalent metrics in bibliometric analysis. Bibliometric analysis is employed across communication, marketing, health, and technology to visualize data and identify critical authors, trends, and significant publications (Dubey et al., 2023; Lazarides et al., 2023). This facilitates the identification of critical contributors, significant research, and emerging trends in the field (Merigó & Yang, 2017; Nur'aeni & Zalsahra, 2024).
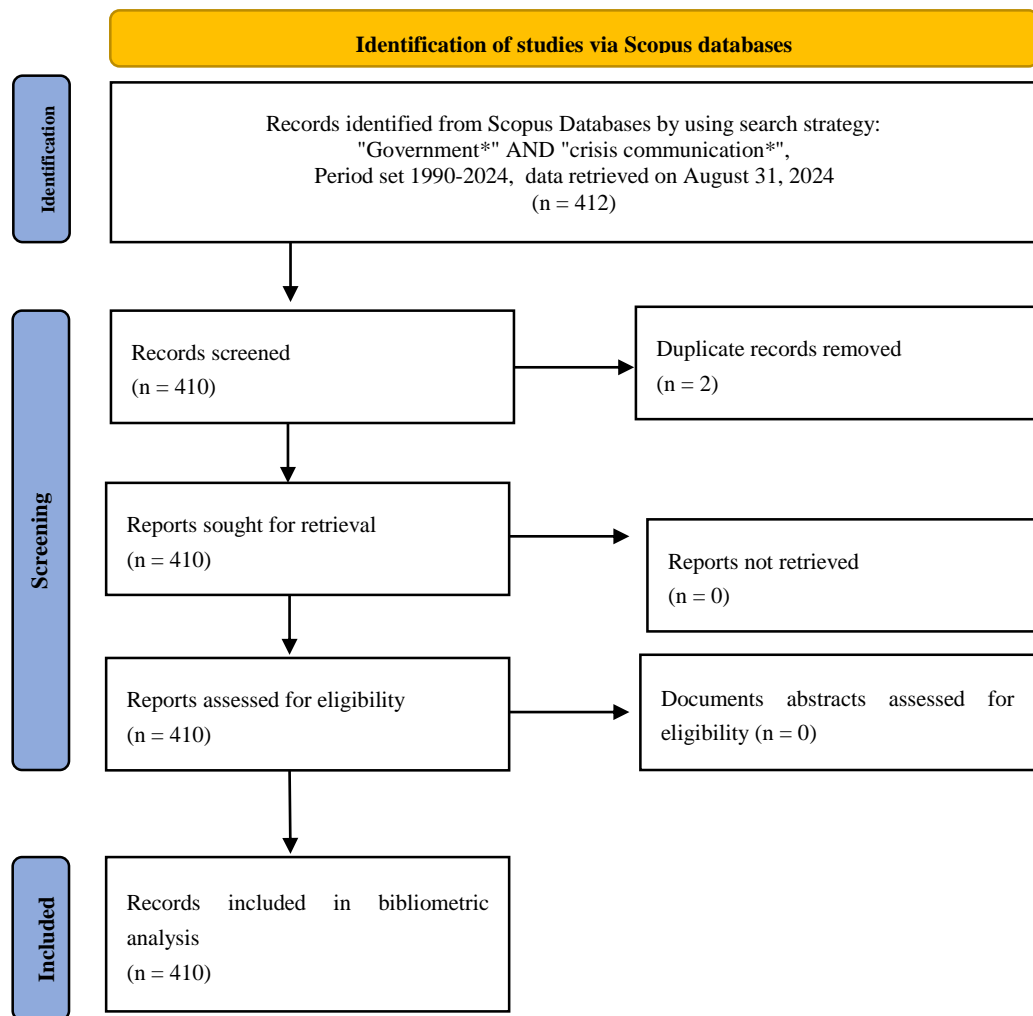
The first step was to identify source of information for the analysis. Scopus is a prominent academic database encompassing many books, conference proceedings, and scholarly journals, making it one of the most accessible abstract and citation databases. This study will utilize data from the specified database. The Scopus database comprises more than 22,794 active titles and over 78 million bibliographic records, exceeding numerous other indexing systems (Gasparyan & Kitas, 2021). The database encompasses various disciplines, including the social sciences and humanities, frequently under-represented in other databases like WoS (Budimir et al., 2021; Tennant, 2020). Scopus provides advanced analytical tools that facilitate enhanced altimetric and scientometric data analysis at the individual article level (Gasparyan & Kitas, 2021). Scopus provides superior journal coverage compared to WoS, encompassing 100% of journals in Scopus instead of 82% while maintaining high journal quality (Powell & Peterson, 2017). This research used Scopus as database.

The bibliometric analysis tool used in this research was VOSviewer (version 1.6.20). VOSviewer's already available tools will make developing citation networks, co-authorship networks, and keyword occurrence maps more straightforward. We graphically illustrate the links between authors, publications, and keywords. By doing so, we can learn more about the research landscape, see the interconnections between various aspects of government crisis communication, and the formation of research groups.

This study followed the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines and employed a comprehensive report based on the PRISMA template. The PRISMA template involves four processes: identification, screening, eligibility, and determination of studies. Figure 1 presents a research flowchart. Then, to retrieve articles relevant to this research, we searched using keywords pertinent to government crisis communication, specifically "government*" AND "crisis

communication*". The period was set to 1990 – 2024. The data was retrieved on August 31, 2024, resulting in 412 records.

After the searches for relevant publications have been completed, bibliometric data is gathered. This research focuses on the following aspects: 1) Author information, including author names, affiliations, and collaboration networks; 2) The year of publication, used to track temporal trends in research activity; 3) The most frequently used keywords, used to identify recurring themes; and 4) Journals where the publications appear to find leading platforms for the field.

Identification of studies via Scopus databases

Identification

Records identified from Scopus Databases by using search strategy:
"Government*" AND "crisis communication*",
Period set 1990-2024, data retrieved on August 31, 2024
(n = 412)

Screening

Records screened
(n = 410)

Duplicate records removed
(n = 2)

Reports sought for retrieval
(n = 410)

Reports not retrieved
(n = 0)

Reports assessed for eligibility
(n = 410)

Documents abstracts assessed for eligibility (n = 0)

Included

Records included in bibliometric analysis
(n = 410)

Figure 1. Research Flowchart

RESULTS AND DISCUSSION

General Information

Table 1 presents a detailed overview of the published research findings categorized by various document types, publication stages, source types, and languages. The predominant publication type identified in this study was the scientific article, totalling 282 publications. This suggests a clear preference among researchers for utilizing journal articles as their primary method for disseminating findings. Additionally, significant document types encompassed book chapters (56 documents) and conference papers (36 documents). This suggests that the research has effectively contributed to academic discussions in books and conferences.

The analysis of the publication stage reveals that a significant portion of the research results, 399 articles, have successfully progressed to the final stage. This indicates that most of the work has undergone evaluation and is prepared for publication. There are currently 11 documents in the AIP (Article in Press) stage. This status signifies that while these documents have received

acceptance for publication, they have yet to be fully published. Scientific journals serve as the predominant source of publication, with 300 publications recorded. Then, books (17 publications) and conference proceedings (37 publications). Furthermore, the book series comprises 56 publications, reflecting the diverse formats of research dissemination currently available.

Furthermore, Table 1 details the languages utilized in the research publications. Among the 410 documents analyzed, English emerges as the predominant lingua franca within the global scientific community. Nonetheless, publications exist in various other languages, including Spanish (5 documents), Arabic (2 documents), Croatian (3 documents) and Lithuanian (2 documents), German (2 documents), while Estonian and Korean each have one publication. This suggests that significant linguistic diversity is present despite the limited number of publications. Table 1 provides an overview of relevant information regarding this topic.

Table 1. General Information

Document Type		Publication Stage		Source Type		Language	
Article	282	Final	399	Journal	300	English	394
Book Chapter	56	AIP	11	Book	17	Spanish	5
Conference Paper	36			Conference Proceeding	37	Arabic	2
Book	17			Book Series	56	Croatian	3
Review	14					Lithuanian	2
Editorial	2					German	2
Note	2					Estonian	1
Conference Review	1					Korean	1
Total	**410**		**410**		**410**		**410**

Most Productive Country

The study encompassed 72 countries, utilizing 23 thresholds for analysis. The default parameters stipulate that a country must have at least five documents and 0 citations to be considered for inclusion in the list. Figure 2 illustrates the research contributions from various countries, quantified by the volume of published documents, the citations garnered, and the intensity of collaborative relationships among these nations. The data reveals that the United States leads in publications, with 114 documents and 2,790 citations, suggesting a significant global impact of American research. The presence of 30 collaborative relationships suggests that the United States is engaged in a wide-ranging and robust network of research collaborations, reinforcing its position as a significant international research hub.
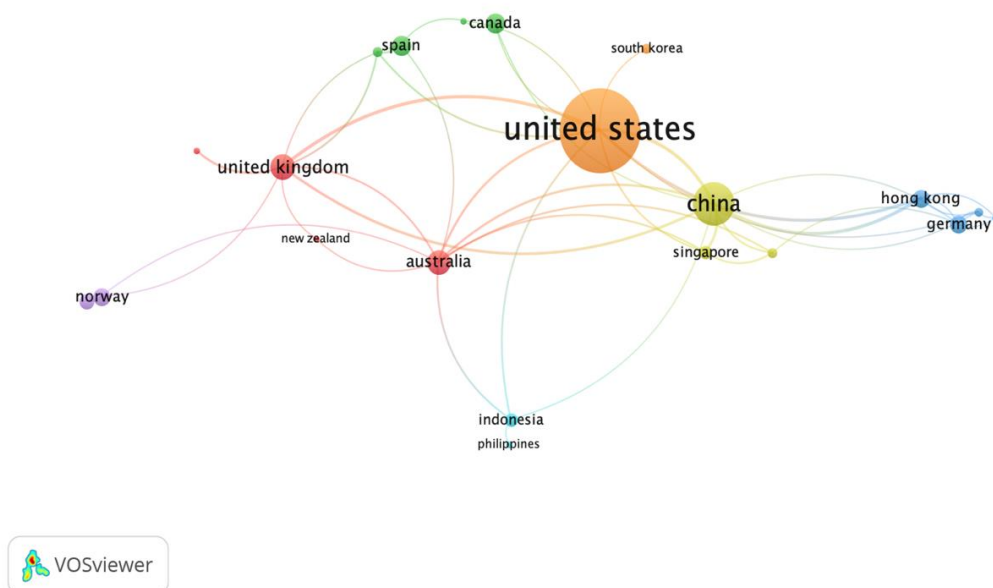
Figure 2. Distribution of Countries with the Most Publications

China ranks second, producing 50 documents and accumulating 749 citations, with a relationship strength 29. While the volume of publications in China is approximately half that of the United States, the substantial number of citations suggests that Chinese research significantly influences the academic community. The robust nature of relationships suggests that China engages in significant research collaborations, positioning it as a prominent player in global research efforts. Australia presents a total of 24 documents and 898 citations, suggesting that although the volume of publications is less than that of the United States and China, the caliber and impact of the research conducted are notably significant. Moreover, the strength of the relationship among the seventeen suggests that Australia engages significantly in international collaboration. The country demonstrates a notable impact, particularly regarding the caliber of research, as evidenced by the volume of citations obtained. Countries like the United Kingdom, Canada, and Hong Kong also play a role in this context. Despite having fewer publications, with Hong Kong producing 17 and Singapore 11 documents, both regions exhibit significant citation counts and robust collaborative relationships, highlighting the global recognition of their research contributions. The UK possesses 25 documents and 392 citations, demonstrating a relationship strength of 20, which signifies its active involvement in global research collaboration networks.

Conversely, nations like India, Indonesia, Malaysia, and Japan produce limited documents, each contributing between five and twelve documents. Countries like India and Malaysia exhibit lower relationship strengths, suggesting the potential for enhancing international collaboration. Nonetheless, these contributions remain significant, particularly within the global cooperation framework. The United States, China, and Australia are at the forefront of global research contributions, evidenced by their significant number of publications and citation impact, as illustrated in Figure 1. Other countries exhibit lesser contributions but still reflect scientific influence and collaboration.

Popular Scientific Source

Table 2 presents the titles of scientific sources commonly utilized in public relations, risk management, and crisis communication research. Public Relations Review, with 14 publications, is the most frequently cited journal. This journal is a significant reference for researchers exploring public relations, particularly communication and crisis management. International Crisis and Risk Communication Research and the International Journal of Disaster Risk Reduction published eight articles each. Both highlight the significance of research in crisis communication and disaster risk reduction at an international level, suggesting that these domains are central to global crisis studies.

Furthermore, seven articles published in the Journal of Corporate Communications and Contingencies and Crisis Management are pivotal to studying corporate communication and contingency management during crises. This highlights the significance of strategic communication in addressing crisis issues organizations encounter. Supplementary sources, including the Handbook of International Crisis Communication Research and BMC Public Health, each contain five articles that examine communication within public health and global crisis communication research frameworks. Both affirm the significance of research in international health and crisis response.

Other journals, including the Journal of Strategic Communication, Journal of Communication Management, and Journal of Public Relations Research, which feature 4 to 5 articles, indicate that research in strategic communication, communication management, and public relations is crucial for comprehending crisis communication strategies. Publications like Political Communication and Covid-19: Governance and Rhetoric in Times of Crisis and the journal Search: Journal of Media and Communication Research, each featuring four articles, underscore the significance of political communication and media research during crises, particularly concerning the COVID-19 pandemic. This illustrates the interconnectedness of media communication, political dynamics, and global crises. The COVID-19 pandemic illustrates the various reference sources utilized in examining crisis communication. Researchers examining crisis management across diverse industries will find that these journals and books offer theoretical and practical foundations. Table 2 presents the primary journals associated with Government Crisis Communication.

Tabel 2. Top Scientific Sources

Source Title	Doc.	Publisher	Quartile	SJR 2023	h-Indexs
Public Relations Review	14	Elsevier	Q1	1.38	
International Journal of Disaster Risk Reduction	8	Elsevier	Q1	1.13	
Journal of International Crisis and Risk Communication Research	8	The Netherlands Press	Q2	0.41	11
Corporate Communications	7	Emerald Group Publishing Ltd.	Q2	0.52	69
Journal of Contingencies and Crisis Management	7	Wiley-Blackwell Publishing Ltd	Q1	0.84	67
BMC Public Health	5	BioMed Central Ltd	Q1	1.25	197
International Journal of Strategic Communication	5	Routledge	Q2	0.53	35
Journal of Communication Management	5	Emerald Group Publishing Ltd.	Q1	0.84	48

Most Productive Affiliations

Table 3 presents data regarding the university affiliations most commonly associated with research in crisis communication, risk management, and public relations. The data suggest that numerous universities are actively engaged in research within this domain. The University of Maryland College Park is the leading institution with eleven publications, signifying its status as a significant center for crisis communication research and its substantial contributions to the academic literature in this field. The University of Georgia ranks second with nine publications, while Nanyang Technological University has eight. Nanyang Technological University in Singapore is recognized as a leading crisis management and communication institution. The Wee Kim Wee School of Communication and Information, a component of the university, is featured in seven publications, underscoring its significance to the institution.

Virginia Commonwealth University, the Chinese University of Hong Kong, the University of Tennessee, the University of Knoxville, the University of Kentucky, and the University of Central Florida each possess six publications. This suggests that these educational institutions participate in crisis communication research, focussing on different facets of local and global risk management and communication. Tsinghua University, the University of Guelph, and the City University of Hong Kong each produced five publications, suggesting that crisis communication research is expanding in the Asian region, where the crisis challenges encountered may exhibit distinct characteristics compared to other countries. This table indicates that numerous prominent universities globally endorse research in crisis communication. Universities in the United States, Asia, and various other nations have made substantial contributions, highlighting the significance of crisis communication research in tackling the intricate challenges and issues that emerge globally.

Table 3. Top affiliation

Name of affiliation	Country	Doc.
University of Maryland, College Park	United States	11
University of Georgia	United States	9
Nanyang Technological University	Singapore	8
Wee Kim Wee School of Communication and Information	Singapore	7
Virginia Commonwealth University	United States	6

Name of affiliation	Country	Doc.
Chinese University of Hong Kong	Hong Kong	6
The University of Tennessee, Knoxville	United States	6
University of Kentucky	United States	6
University of Central Florida	United States	6
City University of Hong Kong	Hong Kong	5
University of Guelph	Canada	5
Tsinghua University	China	5

Funding Sponsors

Table 4 presents a summary of funding agencies that provide support for research in public relations, risk management, and crisis communication. The data indicates that the predominant funding source is national agencies, particularly in Asia. The National Natural Science Foundation of China is the primary funding body, backing 15 research studies. The Chinese Government is closely monitoring crisis and communication research to develop science-based solutions for the country's crisis challenges. The Ministry of Education of the People's Republic of China financed eight studies. The Chinese education sector is promoting academic research in this area. The collaboration between the Ministry of Education and Chinese scientific institutions demonstrates a unified initiative to advance research in crisis management.

The National Science Foundation (NSF) ranks third among the most significant funding agencies in the United States. The NSF funded seven studies, highlighting the significance of crisis communication research as a national scientific priority in the United States. The Ministry of Science and Technology of the People's Republic of China-funded five studies, indicating its significant role in facilitating effective crisis communication research. The National Research Foundation of Korea supported four studies alongside those conducted in China and the United States. This demonstrates South Korea's significant contribution to crisis communication research. The Japan Society for the Promotion of Science subsequently conducted three studies demonstrating that Japan supports research in analogous fields. Furthermore, three studies funded by Myndigheten för Samhällsskydd och Beredskap, a Swedish Government agency tasked with crisis management and community preparedness, indicated that European countries engage in crisis research emphasizing social protection and preparedness. Three studies were ultimately funded by the National Office for Philosophy and Social Sciences in China. The studies highlighted the significant contributions of social and philosophical sciences in comprehending and addressing crises and the crucial role of social sciences in associated research.

Table 4. Funding Sponshorsip

Funding Sponsor	Country	Doc.
National Natural Science Foundation of China	China	15
Ministry of Education of the People's Republic of China	China	8
National Science Foundation	United States	7
Ministry of Science and Technology of the People's Republic of China	China	5
National Research Foundation of Korea	South Korea	4
Japan Society for the Promotion of Science	Japan	3
Myndigheten för Samhällsskydd och Beredskap	Swedish	3
National Office for Philosophy and Social Sciences	Spanish	3

Most Influence Authors

Table 5 presents the names of the most prolific authors in public relations, risk management, and crisis communication research. These authors significantly contribute to advancing literature in this field through their research efforts. Liu, B.F. is the

leading author, having published six works. Numerous studies indicate that Liu is a prominent expert in crisis communication. Furthermore, his substantial contribution to developing crisis communication theory and practice is critical. Jin, Y. holds the second position with five publications, demonstrating significant influence in crisis communication research. Jin, similar to Liu, is a crucial figure in analyzing how communication can facilitate crisis management. Papadopoulos has authored five publications, reflecting his involvement in research related to crisis management. His inclusion in this list indicates that Papadopoulos is engaged in significant and pertinent research on an international scale. McKay, M. and Pang, A. are recognized as productive authors in this field, each having four publications. MacKay and Pang have significantly contributed to crisis communication, each with distinct yet complementary focuses.

Table 5. Top authors

Author Name	Country	Affiliation	Doc.	h-Indexs	Citations
Liu, B.F.	United States	University of Maryland	6	43	8,847
Jin, Y.	United States	University of Georgia	5	50	12,180
Papadopoulos, A.	Canada	University of Guelph	5	25	5,383
MacKay, M.	Canada	University of Guelph	4	6	232
Pang, A.	Singapore	Singapore Management University	4		

Most Cites Document

This paper is one of the most cited sources in crisis communication, which shows how important and valuable it is to academics and professionals. There is no way to separate the methods used and the sharpness of the analysis that can meet the needs of the time from the document's ability to change future research and practices in the field. This document is the most-cited one, so it continues to be the basis for new research. It also has valuable information on how science and technology will grow. Table 6 lists the papers mentioned the most (at least 100 times).

Table 6. Most Cites Document

Cites	Authors	Title	Year	Source
342	W. Van Der Weerd, D.R.M. Timmermans, D.J.M.A. Beaujean, J. Oudhoff, J.E. Van Steenbergen	Monitoring the level of government trust, risk perception and intention of the general public to adopt protective measures during the influenza A (H1N1) pandemic in the Netherlands	2011	BMC Public Health
315	M.O. Lwin, J. Lu, A. Sheldenkar, P.J. Schulz, W. Shin, R. Gupta, Y. Yang	Global sentiments surrounding the COVID-19 pandemic on Twitter: Analysis of Twitter trends	2020	JMIR Public Health and Surveillance
249	B. Hyland-Wood, J. Gardner, J. Leask, U.K.H. Ecker	Toward effective government communication strategies in the era of COVID-19	2021	Humanities and Social Sciences Communications
216	B.F. Liu, J.D. Fraustino, Y. Jin	Social Media Use During Disasters: How Information Form and Source Influence Intended Behavioral Responses	2016	Communication Research
213	M.W. Graham, E.J. Avery, S. Park	The role of social media in local government crisis communications	2015	Public Relations Review
185	Y. Jin, B.F. Liu	The blog-mediated crisis communication model: Recommendations for responding to influential external blogs	2010	Journal of Public Relations Research

| Cites	Authors	Title	Year	Source
132	X. Lin, P.R. Spence, T.L. Sellnow, K.A. Lachlan	Crisis communication, learning and responding: Best practices in social media	2016	Computers in Human Behavior
131	J.L. Garnett, A. Kouzmin	Communicating throughout Katrina: Competing and complementary conceptual lenses on crisis communication	2007	Public Administration Review
128	W. MacIas, K. Hilyard, V. Freimuth	Blog functions as risk and crisis communication during hurricane Katrina	2009	Journal of Computer-Mediated Communication
122	B. Wang, J. Zhuang	Crisis information distribution on Twitter: a content analysis of tweets during Hurricane Sandy	2017	Natural Hazards
118	B.J. Holmes	Communicating about emerging infectious disease: The importance of research	2008	Health, Risk and Society
115	H. Bean, J. Sutton, B.F. Liu, S. Madden, M.M. Wood, D.S. Mileti	The study of mobile public warning messages: A research review and agenda	2015	Review of Communication
112	W. Liu, C.-H. Lai, W.W. Xu	Tweeting about emergency: A semantic network analysis of government organizations' social media messaging during Hurricane Harvey	2018	Public Relations Review
103	S. Kim, B.F. Liu	Are All Crises Opportunities? A Comparison of How Corporate and Government Organizations Responded to the 2009 Flu Pandemic	2012	Journal of Public Relations Research
102	S.E. Cho, K. Jung, H.W. Park	Social media use during Japa n's 2011 earthquake: How Twitter transforms the locus of crisis communication	2013	Media International Australia

Keywords

Figure 2 presents an overview of the most prevalent keywords in research concerning crisis communication, risk management, and public relations. A total of 1.014 keywords were analyzed, with 19 thresholds established to identify those appearing at least eight times. The findings highlight the primary themes in the literature concerning crisis communication, particularly within pandemics and risk management.

Crisis Communication was mentioned 145 times, exhibiting a correlation strength of 101, thus establishing it as the most prominent theme. This indicates that crisis communication is a critical area of research, with ongoing investigations into how effective communication can assist organizations, governments, and communities manage emergencies and crises. Crisis communication involves various strategies and methods for managing information and ensuring stability during critical situations. COVID-19 is a prominent term, occurring 91 times with a correlation strength of 67. The global pandemic has emerged as a central subject in crisis communication research due to its extensive effects on social, economic, and political spheres. This research examines the interactions and information sharing among governments, media, and the public during the pandemic, alongside the challenges posed by disinformation. Crisis Management, mentioned 25 times with a strength of 19, underscores its significance as a strategic method for addressing emergencies. This entails strategic planning and decision-making during a crisis, alongside the critical role of communication in disseminating accurate information and maintaining operational continuity across sectors. Social Media is mentioned 66 times, with a strength of 59, indicating its crucial role in crisis communication. Social media, particularly Twitter, is a key platform for information dissemination and public engagement during crises. Research on

crisis communication in the digital age emphasizes the significant role of social media in disseminating accurate and inaccurate news.

Furthermore, Government Communication, mentioned 12 times with a strength of 12, indicates that it is a crucial component in crisis management. This is directly linked to the Government's ability to uphold public trust via transparent and timely communication. Health Communication and Public Health emerged as significant themes, with occurrences of 10 and 12 times, respectively. This underscores the necessity for tailored communication strategies during health crises, particularly pandemics, to protect public health and effectively address health emergencies.
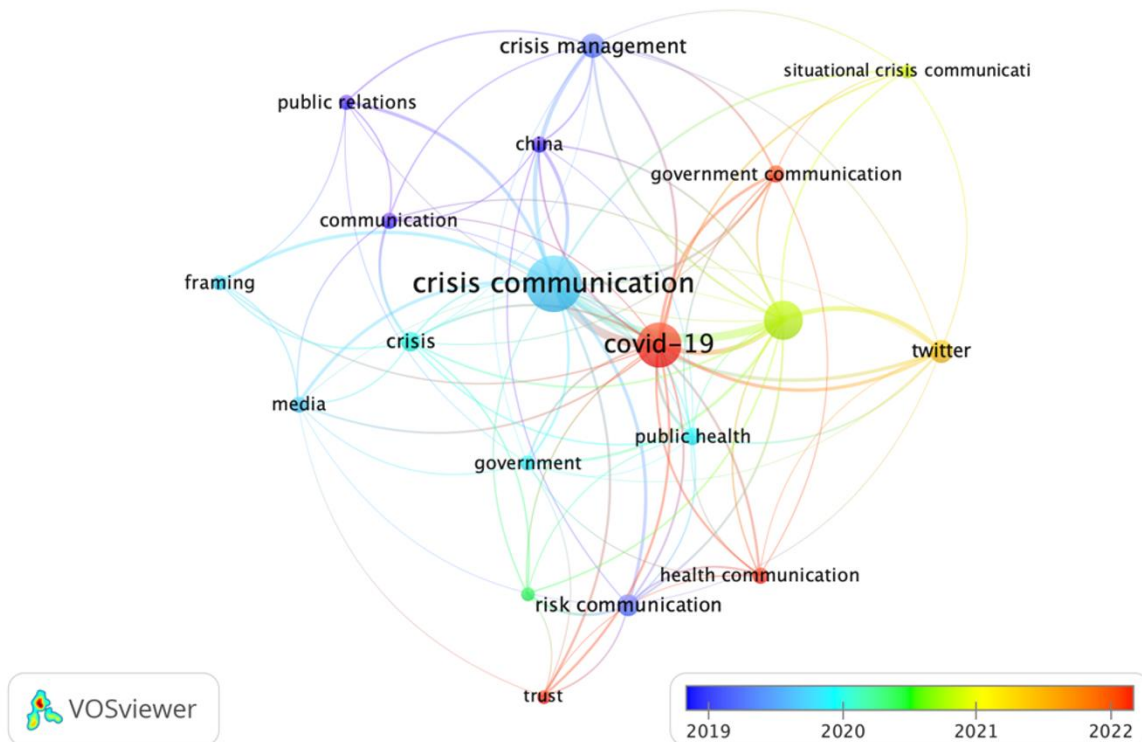
Discussion

The research on crisis communication has become a critical and fast-developing topic, as seen by the table analysis covering publications, author affiliations, funding sources, and keywords used in the study. This is especially true in the context of the COVID-19 epidemic. This research investigates a variety of facets of crisis communication, including how governments, organizations, and communities utilize communication strategies to manage crises, as well as how these same entities use communication tactics.

It was found that the keywords "crisis communication" and "COVID-19" emerged as the primary topics in most of the papers examined. Due to the pandemic, many scholars have focused on crisis communication. According to Ravazzani et al. (2024), it is necessary to update the ways of internal communication after the pandemic. The modified methods should emphasize empathetic communication, conversation, relationships, empathetic leadership, and ethical listening. It has been demonstrated that efficient internal communication can improve job satisfaction, employee engagement, and organizational commitment, as stated by Al Katheeri et al. (2024). This demonstrates how crucial internal communication is when it comes to sustaining the workers' morale and maintaining production amid a crisis. Increased public compliance and improved pandemic management are connected with open, consistent, and transparent communication. Communication that is inconsistent and imprecise, on the other hand, is the root source of public disapproval and mistrust (Amalia et al., 2024). The extraordinary pandemic that has spread throughout the globe demonstrates how crucial it is to have efficient communication to manage a health crisis effectively and to provide prompt, accurate, and trustworthy information.

Communication from the Government and the use of social media are both essential (Omary & Britto, 2024). Through communication that is both acceptable and effective, governments can garner public trust and distribute information during times

of crisis. The use of social media, on the other hand, poses both a challenge and an opportunity: such platforms have the potential to be efficient tools for the rapid dissemination of information, but they are also susceptible to the spread of misinformation. According to Mahadewi & Darma (2024), the advent of social media has allowed governments to develop efficient communication strategies that can enhance public relations, reputation, and the ability to persuade within the public sector. For instance, several studies have focused primarily on Twitter, demonstrating how people and organizations utilize the site to convey vital information during times of crisis. Increasing public participation and transparency in e-government programs has been demonstrated to be possible through social media. According to the findings of a meta-analysis (Machmud et al., 2024), using social media platforms leads to a rise in citizen involvement, public trust, transparency, and collaboration. The affiliates that have made the most significant contributions to this investigation are the University of Maryland, College Park, the University of Georgia, and Nanyang Technological University. It is clear from this that several educational institutions worldwide have taken the initiative to become active research centers on crisis communication.

Furthermore, the fact that financing comes from organizations like the National Science Foundation of the United States and the National Natural Science Foundation of China demonstrates a global dedication to this research. A substantial amount of work has been done by Chinese financing agencies, demonstrating the country's commitment to addressing the situation using techniques based on scientific research. The importance of techniques for handling the crisis and how risks are conveyed to the public is further demonstrated by the use of keywords such as "crisis management," "risk communication," and "risk perception." Within the framework of the ongoing epidemic, the perception of danger is of utmost importance. Governments and organizations must take measures to ensure that the general public is aware of the threats they are confronted with in a clear and accurate manner.

The notions of trust and construction were also found to be significant throughout this research. When there is a crisis, it becomes a significant difficulty to establish and retain trust between communities, groups, and governments. However, how a crisis is framed in communication, sometimes referred to as framing, significantly influences how the public perceives the crisis and how they react to it. For instance, this study frequently uses the Situational Crisis Communication Theory to investigate how organizations ought to react during a crisis and how messages ought to be framed to minimize the adverse effects that might be produced on an organization's reputation. The contributions of authors such as Liu, BF, Jin, Y, and Papadopoulos, A have significantly impacted the field of crisis communication study. Their publications are evidence of a profound commitment to the subject matter, and they offer a wealth of insights into comprehending the difficulties and potential solutions linked with crisis communication. The presence of these authors in many publications demonstrates how they have influenced the development of the literature and the practice in this field.

CONCLUSION

The findings of this study offer a comprehensive understanding of the significance of crisis communication in tackling global concerns, particularly during the COVID-19 pandemic. Through phrases like "crisis communication" and "COVID-19," it is evident that the pandemic has emerged as the primary topic of conversation regarding communication techniques and crisis management. In addition, this research highlights the significance of social media platforms, particularly Twitter, as a vital instrument for disseminating information during times of crisis. Nevertheless, the issue of disinformation was also discovered in this study. In addition, it is abundantly evident that the perception of risks and managing crises are of utmost significance. Research has demonstrated that people's perceptions of the hazards associated with a crisis can affect how they respond to catastrophes. The University of Maryland and Nanyang Technological University, both of which are among the most prestigious educational institutions in the world, as well as well-known authors like Liu, B.F. and Jin, Y., play a vital part in the promotion of research in this field from an academic point of view. The significance of providing financial support to research on crisis communication on a global scale is highlighted by the fact that national agencies like the National Science Foundation of the United States and the National Natural Science Foundation of China provide funding for such research.

This research has some things that could be improved. In the first place, most of the research concentrates on industrialized nations like the United States and China, which means that they need to include the perspectives of developing nations. Second, while research frequently focuses on the COVID-19 pandemic, the findings are likely not applicable to future crises. Because of

the prevalence of social media platforms like Facebook, the significance of conventional media and communication methods that do not involve digital technology is less frequently debated. In the fourth place, the diversity of academic contributions is restricted because most research is carried out in large universities.

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