

**ANALYSIS OF THE SCIENTIFIC PRODUCTION ON CRISIS
MANAGEMENT IN TOURISM DURING THE PERIOD 1980-2021**

**ANÁLISIS DE LA PRODUCCIÓN CIENTÍFICA SOBRE GESTIÓN DE
CRISIS EN TURISMO DURANTE EL PERIODO 1980-2021**

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ABSTRACT

Objective. Analyze the scientific production on crisis management in tourism in the Scopus database in the period 1980-2021. **Design/Methodology/Approach.** A bibliometric study was carried out in the Scopus database using the keyword search strategy with the terms “crisis management” AND “tourism”. **Results/Discussion.** The search yielded a total of 395 articles indexed in the database; 76.46% (302) of them are articles from scientific journals, the largest number of publications are associated with the Tourism Management journal and Lori Pennington-Gray stands out as the most prolific author on the subject. A total of 1045 keywords were analyzed through the co-occurrence of terms with prevalence of studies associated with crisis management related to tourism management, tourism economies, market studies, tourism destinations, tourism development, COVID-19, social networks,

decision making, among others. **Conclusions.** Crisis management is a topic of growing interest within the international scientific community, which is proven by the increase in publications associated with it, especially during the crisis caused by COVID-19 in the tourism sector the last two years. **Originality / Value.** This research is part of a larger research project focused on the development of a doctoral thesis associated with the subject under study.

KEY WORDS: crisis management; tourism; tourism management; bibliometric study

RESUMEN Objetivo. Analizar la producción científica sobre gestión de crisis en turismo en la base de datos Scopus en el período 1980-2021. Diseño/ Metodología/ Enfoque. Se realizó un estudio bibliométrico en la base de datos Scopus utilizando la estrategia de búsqueda por palabra clave con los términos “gestión de crisis” Y “turismo”. Resultados/ Discusión. La búsqueda arrojó un total de 395 artículos indexados en la base de datos; El 76,46% (302) de ellos son artículos de revistas científicas, la mayor cantidad de publicaciones están asociadas a la revista Tourism Management y se destaca Lori Pennington-Gray como la autora más prolífica en el tema. Se analizaron un total de 1045 palabras clave a través de la co-ocurrencia de términos con prevalencia de estudios asociados a la gestión de crisis relacionados con la gestión turística, economías turísticas, estudios de mercado, destinos turísticos, desarrollo turístico, COVID-19, redes sociales, toma de decisiones, entre otros. Conclusiones. La gestión de crisis es un tema de creciente interés dentro de la comunidad científica internacional, lo cual se demuestra con el aumento de publicaciones asociadas a la misma, especialmente durante la crisis provocada por el COVID-19 en el sector turístico los últimos dos años. Originalidad / Valor. Esta investigación forma parte de un proyecto de investigación más amplio centrado en el desarrollo de una tesis doctoral asociada al tema objeto de estudio.

PALABRAS CLAVE: gestión de crisis; turismo; gestión turística; estudio bibliométrico

INTRODUCTION

The Organization for Economic Co-operation and Development (OECD) states that the world tourism economy has been expanding steadily over the last six decades (OECD, 2020) . However, the occurrence of a series of problems in the sector leads to the need of rethinking the tourism management process. This was demonstrated in the wake of the great losses suffered by the world tourism industry in 2020 with the rapid expansion of the Sars-Cov-2 virus that plunged the world into a global pandemic crisis (UNWTO, 2020). The latest data from the World Tourism Organization (UNWTO) shows that, during the first five months of 2021, world destinations registered 147 million fewer international arrivals than in the same period of 2020, or 460 million fewer than in 2019 , the year before the pandemic (UNWTO, 2021a).

According to Wut Tai (2021) under the rupture caused by COVID-19, many researchers in the tourism industry have oriented their studies towards the field of crisis management for the future. However, an analysis of the scientific production related to crisis management in the hospitality and tourism industry carried out by the author himself shows that the most researched sectors by the scientific community are limited to the analysis of crises in tour operators and travel agencies, hotel operators, airlines, restaurants and the ocean cruise industry (Wut Tai, 2021) .

The present research covers a longer period of time than that analyzed by Wut Tai (1985-2020) by encompassing 42 years of research (1980-2021) on crisis management in tourism.

Besides, the articles dating from 2020 analyzed by the above-mentioned author are only used as reference. Other bibliometric indicators are analyzed, such as the co-occurrence of terms, authorial collaboration, the evolution of the theory through historiographical analysis and the analysis of the global collaboration network.

In addition, the production associated with this topic has increased during the years 2020-2021 due to the crisis caused by the COVID-19 pandemic, in which tourism sector has been one of the most affected industries as international arrivals to destinations decreased, with an estimated loss of global GDP in 2020 around 2 trillion USD (UNWTO, 2020, 2021c) . That is why this research aims at analyzing the scientific production associated with crisis management in tourism during the period 1980-2021 as well as identifying both the main thematic lines dealt with and the main authors who investigate the subject within the international scientific community.

METHODOLOGY

For the development of the research, a search was carried out in the international Scopus database of Elsevier, considered the largest database of citations and abstracts worldwide on the web of peer-reviewed literature and high-quality sources, which contains more 58.5 million records post-1995 including references, more than 25.4 million records pre-1996 from 1788, more than 18.0 million open access articles, more than 10.9 million conference papers, over 15.8 million articles with funding details and 47.4 million patent links (Elsevier, 2021) .

The strategy used for the search was based on the use of keywords, using the terms "crisis management" AND "tourism " only in journal articles, books and book chapters and conference papers since 1980 until 2021; the bibliometric indicators corresponding to production by years, journals, authors, co-authorship, most treated topics, co-occurrence of terms, thematic evolution, as well as the global collaboration network were analyzed. For data processing, the RStudio 1.4.1106 software was used with the Bibliometrix package (Aria & Cuccurullo, 2017) for the analysis of the main bibliometric indicators and the VOSviewer software for the analyzes corresponding to the indicators of the data collection network. occurrence of terms by keywords.

RESULTS AND DISCUSSION

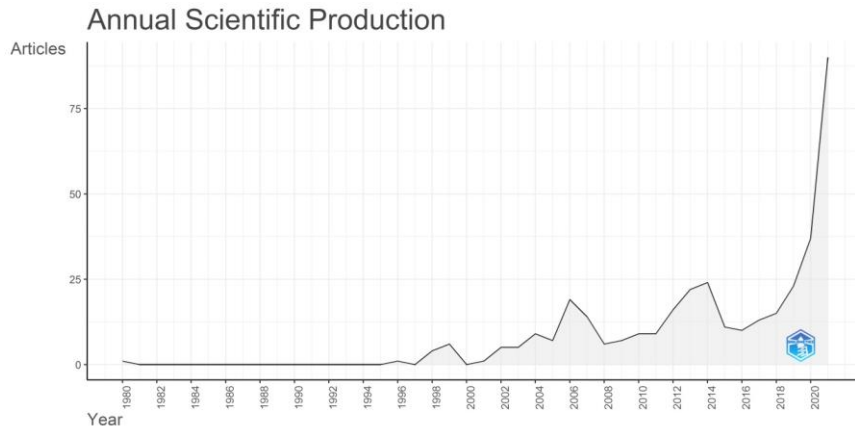
Crisis management in tourism between 1980 and 2021

Although the first studies associated with crisis management in tourism date back to 1980, the subject has gained momentum in recent years. A review carried out in Elsevier's Scopus international database allows us to affirm the existence of articles published in the period between 1980 and 2021 (Figure 1). The initial search yielded 395 indexed sources in the database, however, due to research interests, the data was filtered by selecting specific types of sources (scientific journal articles, conference records, books, book chapters, and reviews) for analysis selecting a total of 359 sources, among which 83.57% (300) are scientific journal articles, 28 (7.80%) are part of conference records, 6.40% (23) are book chapters and 8 (2.23%) are books.

The analyzed period encompasses a total of 41 years, but the first seventeen years (1980-1997) was the interval with the lowest productivity. As of the year 2002, an increase in publications begins to be appreciated, however, the period between 2002-2015 is marked by

annual fluctuations in scientific productivity. The year 2015 marks a sustained increase in the number of publications associated with crisis management in tourism. The Annual Growth percent was 11.6 % and the International Co-Authorship percent was about 22.01%.

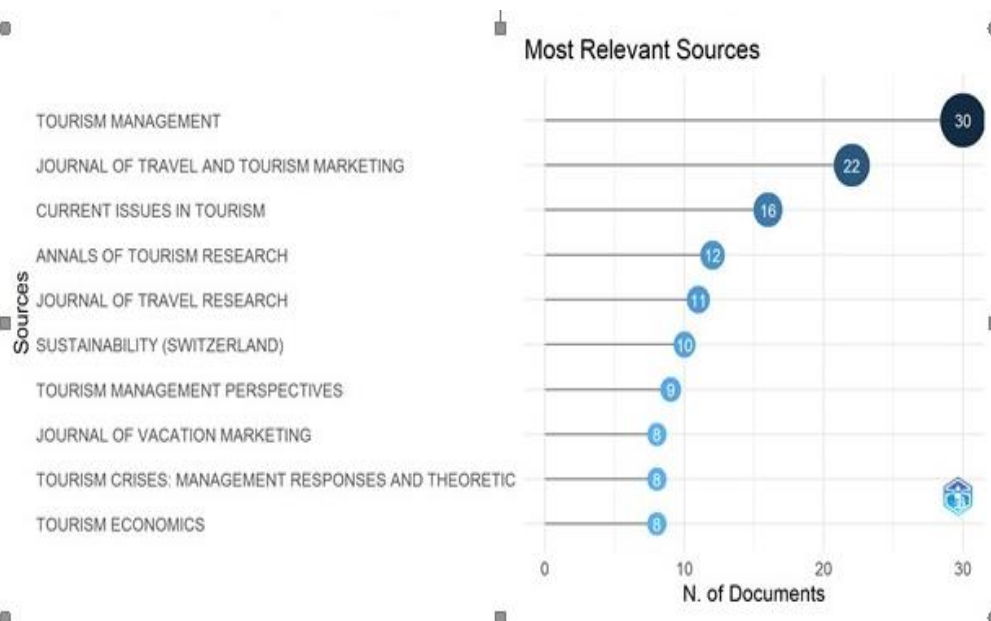
Figure 1. Annual scientific production on crisis management in tourism



Source: Bibliometrix package output from RStudio software

The analysis of the articles published in 159 sources makes it possible to identify that the ten journals where the greatest number of resources have been published group together 37.33% (134 articles) of those published in the period (Figure 2), where Tourism Management journal stands out as the one with the highest productivity with 30 articles associated with the subject, followed by the Journal of Travel and Tourism Marketing with 22 articles and Current Issues in Tourism with 16 resources. In addition, these journals are well positioned according to the Scimago International Ranking of Magazines, respectively occupying positions 2, 7 and 10 thereof, in the category of Tourism Management, Leisure and Hospitality.

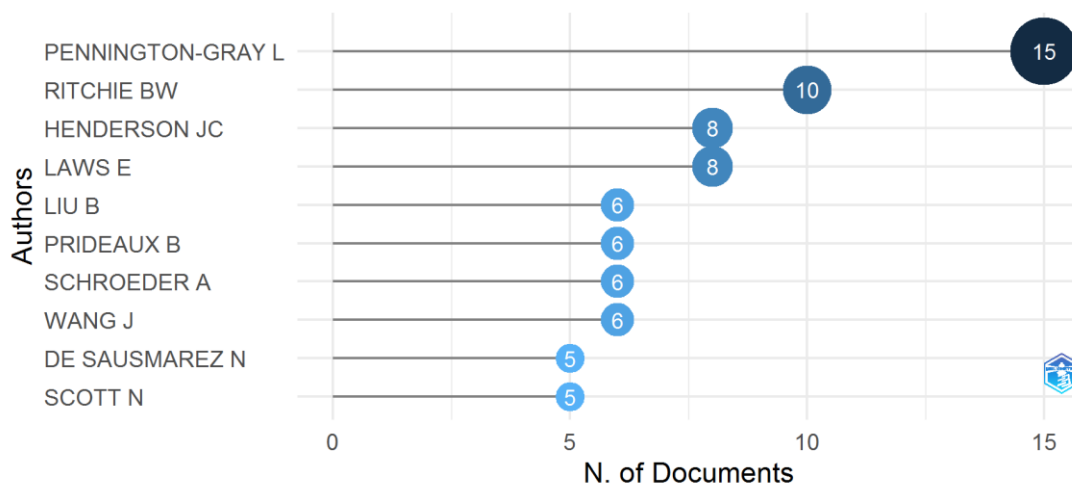
Figure 2. Ten journals with the highest productivity



Source: Bibliometrix package output from RStudio software

The scientific production of a total of 757 authors was analyzed, of whom 680 signed a single article and 77 signed several. The analysis showed that the most prolific authors are those shown in figure 3, headed by Lori Pennington-Gray, Doctor of Science from the School of Hotel, Commercial and Sports Management and professor at the Center of Excellence in Economic Development and Tourism. from the University of South Carolina, United States; who is in charge of running three study centers and, in addition, in the last decade, he has concentrated most of his research on tourism crisis management. Much of his work has been published by the relevant media such as the New York Times.

Figure 3. Most prolific authors of the period
Most Relevant Authors



Source: Bibliometrix package output from RStudio software

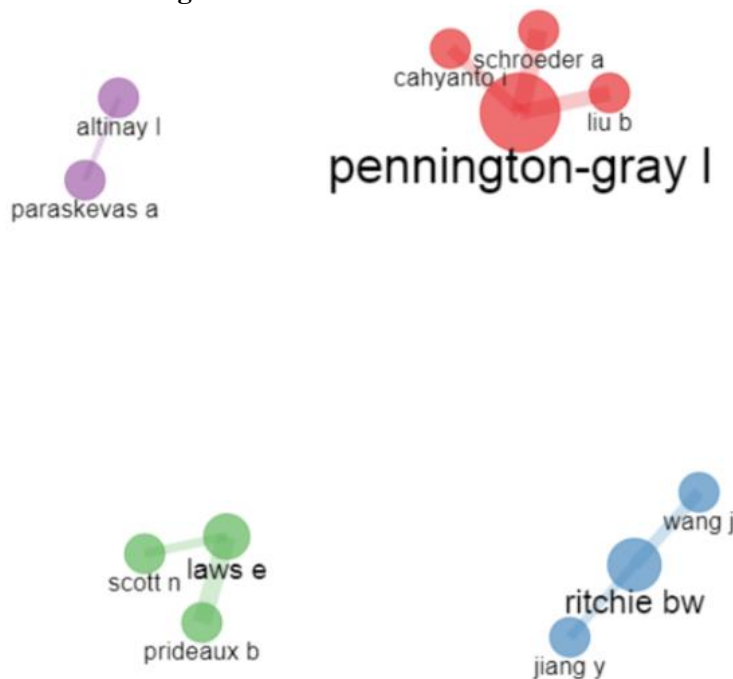
Initially, Lori Pennington-Grey's studies focused on crisis management in tourism (Pennington-Gray et al., 2011), but they gradually expanded into other fields of research, mostly associated with decision-making (Cahyanto & Pennington-Gray, 2015; Cahyanto et al., 2016) , traveler behavior (Pennington-Gray et al., 2014) , fight against diseases (Liu et al., 2016; Yang et al., 2021) , use of social networks (Schroeder et al., 2013; Schroeder et al., 2018) and management of communication strategies during crises (Farajat et al., 2017; Liu & Pennington-Gray, 2015; Liu et al. , 2015; Schroeder & Pennington-Gray, 2015) .

For his part, Brent W. Ritchie studies crisis management in tourism but specially focused on disasters (Ritchie, 2004; Ritchie & Jiang, 2021) , and also raises the need for building resilience capacities in facilities (Jiang et al., 2019; Pham et al., 2021) ; as well as the role that must be played by organizations in charge of managing tourist destinations in coping with different crisis situations (Blackman et al., 2011; Blackman & Ritchie, 2007) . Ritchie emphasizes crisis plans and methods to deal with them (Mair et al., 2016; Ritchie et al., 2011; Wang & Ritchie, 2010, 2012) .

Authorial collaboration or co-authorship (Figure 4) within the analyzed period was carried out based on those authors who have 5 or more investigations. The co-authorship network presents a total of 4 independent clusters, which are scattered and relatively disconnected from one another. The size of the nodes responds to the measures of centrality applied. Those with the highest nodal degree are those with the greatest number of collaborative links. The thickness of the lines represents the intensity and strength of those relationships.

Cluster 1 (red) stands out among all the others, since it contains within its actors the most collaborative author within the sample (Dr.C. Lori Pennington-Grey), who presents a nodal degree (GN) equal to 11, which determines her favorable position in the network. In the analyzed sample, she is responsible for 15 contributions, in which she is the main author of 4 and co-author of 11. Among the authors with whom she establishes relationships, Dr.C. Ashley Schroeder excels with a GN = 7. Both authors present 6 collaborations in common on the use of social networks for crisis management in tourism and risk management.

Figure 4. Author collaboration network



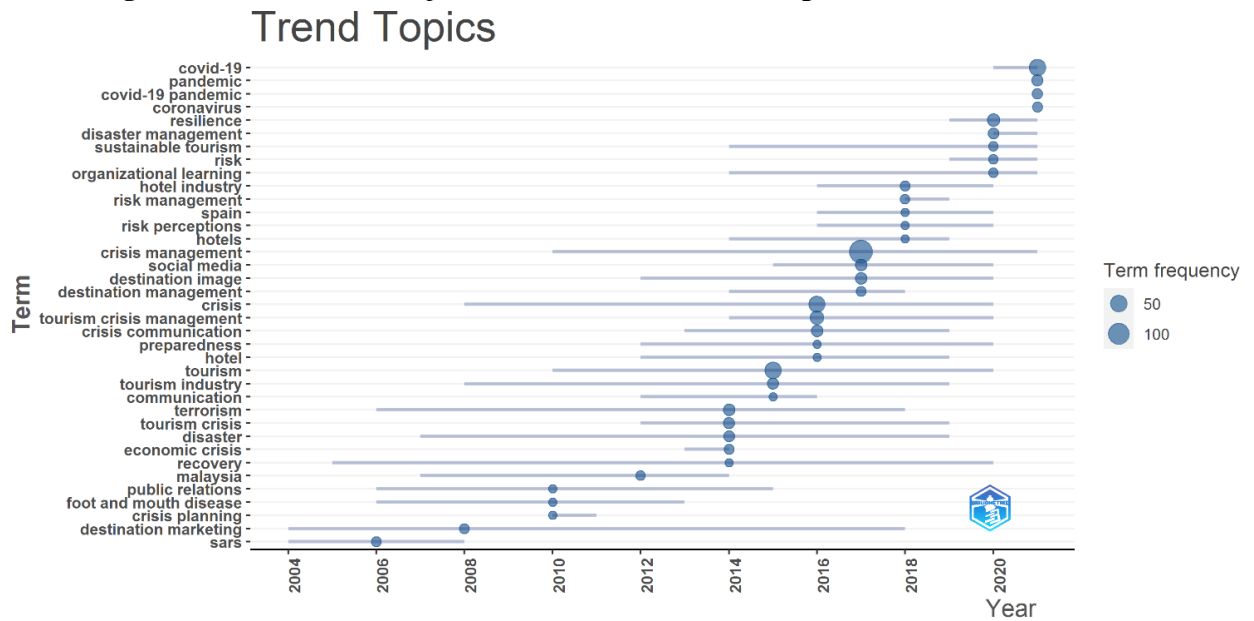
Source: Bibliometrix package output from RStudio software

The analysis of these studies allows us to assert that the approaches related to crisis management in tourism have evolved over the years (Figure 5); initially related to terrorism (Henderson, 2008a; Santana, 2004; Sönmez, 1998), disaster recovery (Carlsen & Liburd, 2007; de Saumarez, 2007; Radnić & Ivandić, 1999), and destination marketing (Beirman, 2002; Henderson, 2008b; Litvin & Alderson, 2003) to gradually move towards crisis management in the tourism industry (Pennington-Gray et al., 2011; Racherla & Hu, 2009), the image of tourist destinations (Fall & Massey, 2013; Ryu et al., 2013), economic crises (Alegre et al., 2013; Michalkó et al., 2014) without losing sight of destination marketing and recovery.

By the year 2012, studies related to crisis communication began (Gunawan et al., 2015; Johnson, 2014; Liu & Pennington-Gray, 2015), social networks (Li et al., 2014; Liu et al., 2015), organizational learning (Ghaderi et al., 2014). For the 2016-2019 period, analyzes in the hotel industry (Webster et al., 2017; Zenker et al., 2019) and risk management (Paraskevas & Quek, 2019; Vargas-Sánchez, 2018) are introduced. The year 2020 also marked a shift in the focus of research, which has been marked by the development of issues associated with resilience (Boto-García & Baños-Pino, 2021; Carty, 2021; Setthachotsombut & Sua-iam, 2020), sustainable tourism (Gómez, 2021; Hopkins, 2021), disaster management

(Chan et al., 2020; Sofyan et al., 2021) and those linked to COVID-19 (Dayour et al. , 2020; Liu et al., 2021; Soliku et al., 2021).

Figure 5. Most discussed topics associated with crisis management in tourism

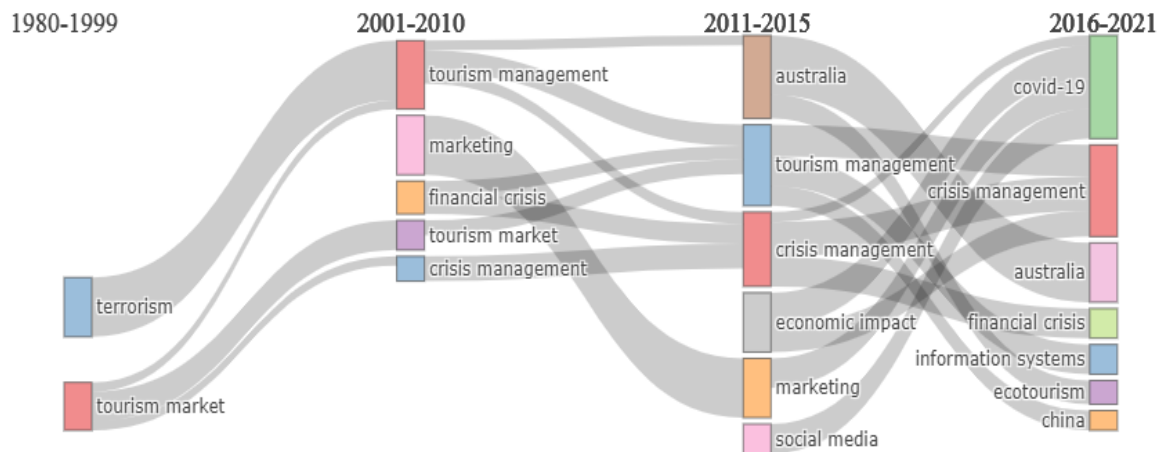


Source: Bibliometrix package output from RStudio software

An evolutionary analysis of the keywords (Figure 6) allows us to divide the timeline into four analysis periods. During the first period (1980 and 1999), crisis management whose associated research was incipient focused on the study of the impact of terrorist actions on tourism markets, for the second period (2001-2010) studies revolves around crisis management and the topics associated with marketing studies begin to consolidate above all in Eurasia as the center of these investigations, especially associated with the financial crises caused by the international economic downturn from 2007 to 2009. For the third period (2011-2015) the crisis management continues to consolidate in the studies, but then it is mainly related to tourism as a phenomenon, since the theme is consolidated in association with tourist destinations and with Australia as the epicenter of these studies. In addition, studies associated with disaster management are beginning to be addressed from Eurasia and new studies associated with the economic impact generated by crisis situations and the use of information systems are emerging.

In the last period (2016-2021), crisis management in tourism holds a stronger position, mainly in relation to elements of the previous period such as tourist destinations, the influence of crises on jobs, disaster management, the impact on the communication and the crises generated by this and the information systems which for this last analysis are also focused on the use of social networks. Studies on this subject are consolidated in Spain and continue to be closely linked to Eurasia and Australia. This period is marked by the scourge of the new coronavirus Sars-Cov-2 pandemic during which the international scientific community has focused on managing the resulting health crisis, advocating in its studies for the perception of risk before pandemics. and exactly in the one caused by Covid-19, placing great emphasis on the resilience of the hospitality industry, which, according to Altintas and Royer (2009), is the ability to avoid crises.

Figure 6. Evolution of the topic of crisis management in tourism

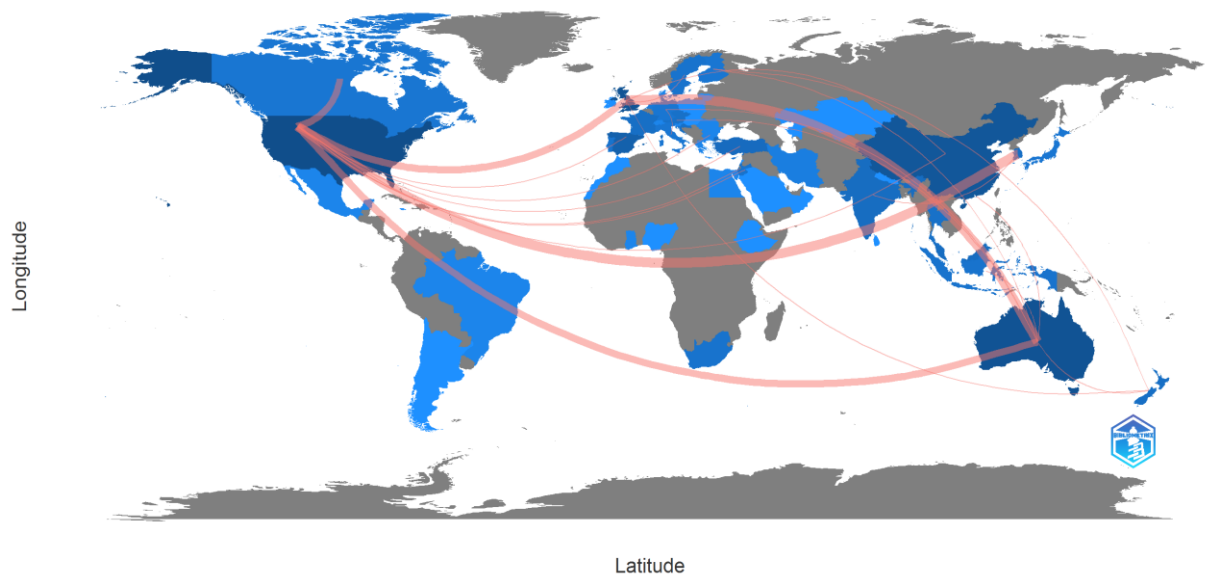


Source: Bibliometrix package output from RStudio software

An analysis of the global collaboration network (Figure 7) of the study allows us to corroborate what was stated in the previous analysis in which the studies associated with the subject have a greater presence in the United States as the main collaborator with strong relations with South Korea, the United Kingdom, Canada, where the studies are beginning to consolidate, but its relationship with this country is strong, and Australia, which at the same time maintains strong ties with the United Kingdom. On the other hand, studies on the subject are consolidated in Spain, Japan, Italy, France, Saudi Arabia, China and South Africa. In the case of Latin America, studies are consolidated in Mexico, Brazil, Argentina, Jamaica and Chile.

Figure 7. Global collaboration network

Country Collaboration Map



Source: Bibliometrix package output from RStudio software

This research updates a group of bibliometric indicators analyzed by Wut Tai (2021) in his research, which also summarized that the main emerging issues during the last decade have

revolved around health-related crises, including COVID-19, the social media crisis, the political unrest crisis, and the terrorism crisis. However, it does not address the need to focus studies in the context of tourist destinations and their relationship with their local actors and host populations, which suffer equally from the effect of crises in the sector due to the multiplier effect of tourism.

The topics related to the resilience of the tourism sector are still incipient, Wut Tai analyzes it within the 10 main issues addressed in his research, however, it is not considered within the guidelines of the proposed research agenda. The importance of this thematic descriptors in tourism was validated after the impact of Covid-19, as the sector was forced to change its approach in order to achieve a more hygienic and safer tourism. On the other hand, although matters related to decision-making are dealt with, they are mostly analyzed from the perspective of the client and how this process is affected by crises, however, it is necessary to promote studies on timely decision-making during crisis by tourism managers as the main agents of its management.

CONCLUSIONS

The organization and selection of the documents that resulted from this search shows us an approach to the scientific production on crisis management in tourism. In addition, its development attached to scientific rigor allows validating its results from the protocol followed for its preparation.

This article investigates the behavior of scientific production on the topic of crisis management in tourism in a time period (1980-2021) based on the use of a set of bibliometric indicators that support its suitability and solidity in the results obtained, which show specificities in the publishing practices of researchers in Elsevier's Scopus database. The main objective of this research was the analysis of the scientific production on crisis management in tourism and its main trends based on the analysis of thematic descriptors. Although the analyzes have performed from a bibliometric point of view, it is necessary to focus studies on the prevention and mitigation of the effects of crises in the context of tourism, especially from the point of view of tourist destinations and their relationship with local actors.

The development of this research has allowed to verify the growing interest of the scientific community in the development of research associated with crisis management closely linked with the tourism sector, which is one of the sectors most affected by the occurrence of all kinds of crises which, if not promptly dealt with, cause great biases in the development of the industry. The trend of increasing publication in recent years corroborates the need to continue exploring the topic, since the leisure industry maintains a trend of constant development and updating, resulting in the need to continue these studies.

The contribution of the consulted literature allows to identify possible gaps for the development of future research associated with crisis management. The analysis of the thematic descriptors recognizes the existence of topics of necessary study linked to crises such as resilience, decision making, planning, and crisis management from tourist destinations; which have been addressed in the literature in a limited way.

The limitations of this research are enshrined in the need to delve into other bibliometric indicators that further support the analyses, in addition to conducting searches in other existing databases, as well as other types of resources, in addition to expanding the terms used for the search strategy.

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