Scientific Research of COVID-19 from the Business and Management Field: A Bibliometric Mapping Analysis*

Investigación científica de covid-19 desde el ámbito empresarial y de gestión: un análisis de cartografía bibliométrica

[Artículos]

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Abstract

This bibliometric mapping study aims to analyze how the contributions of the business and management field during the COVID-19 pandemic offer further directions for scientific research and practice. The research includes 1200 articles published between 2020 and August 2021, retrieved from the main collection of the Web of Science (WoS) database. Through the VOSviewer software, the most influential authors, most highly cited articles, more relevant journals, and main networks were identified. To identify the main trends, two cluster content analyses were conducted. The first considers the main keywords and the second a bibliographic coupling. According to the first analysis, the main tendencies had been entrepreneurship, innovation, new management models, employees' well-being, and communication. The second analysis indicated that the main trend had been driven by the impact of the pandemic on production, consumption, economy, and finances. Likewise,

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by employees' well-being (mainly nurses) and strategies to cope with the crisis. These findings and further directions are discussed.

Keywords: COVID-19, pandemic, business and management, bibliometric mapping, bibliometric analysis.

Resumen

Este estudio de mapeo bibliométrico tuvo como objetivo analizar cómo las contribuciones del campo de los negocios y la gestión durante la pandemia de COVID-19 ofrecen nuevas direcciones para la investigación científica y la práctica. La investigación incluye 1200 artículos publicados entre 2020 y agosto de 2021, recuperados de la colección principal de la base de datos Web of Science (WoS). A través del software VOSviewer, se identificaron los autores más influyentes, los artículos más citados, las revistas más relevantes y las principales redes. Para identificar las principales tendencias, se llevaron a cabo dos análisis de contenido por grupos. El primero considera las principales palabras clave y el segundo un acoplamiento bibliográfico. Según el primer análisis, las principales tendencias habían sido el espíritu empresarial, la innovación, los nuevos modelos de gestión, el bienestar de los empleados y la comunicación. El segundo análisis indicó que la tendencia principal había sido el impacto de la pandemia en la producción, el consumo, la economía y las finanzas. Así mismo, el bienestar de los empleados (principalmente las enfermeras) y las estrategias para hacer frente a la crisis. Se discuten estas conclusiones y otras orientaciones.

Palabras clave: COVID-19, pandemia, empresa y gestión, mapeo bibliométrico, análisis bibliométrico.

Introduction

Massive destruction has been caused by the novel coronavirus (COVID-19) at an international level. A visible change has taken place day by day in people's lives, in addition to the terrible death rate. When this disease was first detected, it reached almost every country in the world. Approximately 198,573,976 are the global cases of COVID-19, and 179,300,630 the number of recovered cases; in addition, 4,233,301 deaths have been recorded as of August 3rd, 2021 (Worldometer.info, 2021). The COVID-19 virus was detected first in Wuhan, China, in December 2019, then it almost spread around the whole world. The worst effects of the pandemic were seen in the United Kingdom, Spain, Italy, India, and United States. To mitigate the adverse effects of the COVID-19 pandemic, governments of different countries intervened through new policies. The damages of the prevailing infection are being controlled to some extent by social distancing and lockdown measures. The centers of religious activities have migrated to an internet base as religious worship centers have been temporarily closed.

A significant number of deaths prompted countries to take exceptional measures in order to counteract, contain, and reduce the further spread of COVID-19, such as the use of face masks, which has been one of the strategies adopted in a wider range (Howard et al., 2020), tracing the contact (Ferretti et al., 2020) and, furthermore, the shutdown of economic activity (Crayne, 2020). The economic shutdown refers to not allowing employees to be present in the workspace, which

will reduce the widespread of the virus by air and breathing transmission (Omary et al., 2020). Specific white-collar jobs can be done from home during the COVID-19 pandemic but cannot be conducted altogether when we consider the blue-collar category of the jobs. Besides, few determinants can be provided in contact tracing (Ferretti et al., 2020) and the economic shutdown costs a huge number of working hours of manpower, which ultimately led to a global-level recession. This was not witnessed since the Great Depression, according to the IMF (2020).

Thus, COVID-19 suddenly appeared in the world, producing deep changes in all dimensions of our life on the planet and forcing academics from several areas to produce useful knowledge to face the pandemic. Since the end of 2019, researchers from different disciplines are increasing their scientific production in topics related to the pandemic. Although Health Sciences are making crucial contributions to fight the virus, other fields of knowledge, such as management and business are developing research to contribute to coping with the pandemic from the work sphere, showing progress in different topics. To help academics and practitioners in the field of business and management understand the influence of the COVID-19 pandemic at the firm level, this bibliometric mapping research addresses the following research question:

> What are the current state and main streams of knowledge regarding the COVID-19 pandemic in the business and management field?

This bibliometric research captures the present state of the literature on COVID-19 through a comprehensive systematic review and presents propositions to guide future studies. It can be described as a descriptive (insight into the past) as well as prescriptive (guidance on possible outcomes) study that reviews 1200 high-impact articles related to COVID-19 in the business and management field and aims to offer a comprehensive insight to researchers and practitioners. The current bibliometric mapping analysis is novel in several aspects. First, it expands the bibliometric analysis through a detailed exploration of an identified theme. Second, it utilized a bibliometric analysis technique that consists of reviewing the past literature in the domain of COVID-19 and more specifically in business and management to minimize the researcher bias and subjectivity issues. Finally, it shows areas of research, identifies gaps in previous studies, and offers novel avenues for further studies in the domain. This study includes sections delineating the research methodology, results, discussion, conclusion, and directions for future studies.

Research methodology

The bibliometric mapping analysis is a very useful review technique to explore the evolution of research fields over time, including topics, methodological parameters, countries, authors, and journals (Zupic & Čater, 2015). Researchers have been using this approach in a wide range of disciplines such as Sustainable Development (Du et al., 2021), Gender Diversity (Sánchez-Teba et al., 2020), Sustainable Entrepreneurship (Moya-Clemente et al., 2021), Business Model (Belussi et al., 2019), Green Products (Bhardwaj et al., 2020), Operation Research (Merigó & Yang, 2017), Corporate Social Responsibility (De Bakker et al., 2005), Smart-city (Mora et al., 2017), and Knowledge Management (Gaviria-Marin et al., 2019). This technique is more holistic and offers a better comprehension than a traditional way of reviewing literature because it reduces the potential

biases of the researchers. A five-step bibliometric workflow by Zupic and Čater (2015) was considered (see Figure 1).

To address the research question of our bibliometric study, we obtained 1200 high-impact articles published in the business and management field. The published articles were identified using the WoS database, only to ensure the high-quality peer journals reviewed in one desired domain. Data acquisition from the existing literature is vital in the bibliometric mapping analysis technique because it demonstrates the complete dataset of high-impact articles from which a credible conclusion will be drawn.

Research publications on COVID-19 in high-impact journals started in 2019. Publications come from different fields of knowledge -not only Health Sciences- and have been acquiring a growing number of publications and rapidly developed from different areas. These peaks were likely triggered by growing interest from business, firms' management, academia in business, and management research, and by an increase in publication opportunities due to a wider community of researchers.

Step 1: Research Design	Step 2: Retrieved Bibliometric Data	Step 3: Data Analyses
• Research question • Selection of database • Selection of research parameters	• Search data from database • Refine parameters • Filter and retrieve documents	• Selection of Software • Export documents in txt files • Data cleaning • Conducting analyses

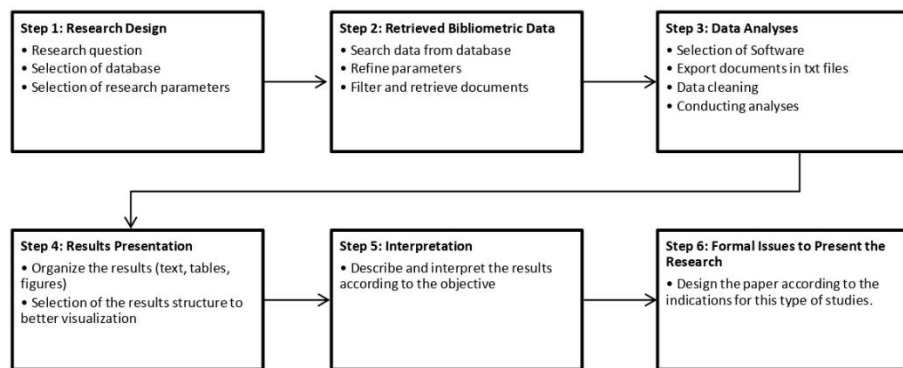| Step 4: Results Presentation	Step 5: Interpretation	Step 6: Formal Issues to Present the Research
• Organize the results (text, tables, figures) • Selection of the results structure to better visualization	• Describe and interpret the results according to the objective	• Design the paper according to the indications for this type of studies.

Figure 1. Stages of the research process

Source: Own elaboration.

By searching the term *COVID-19* in the title without limit of disciplines we found *116,056* academic products in the Web of Science Core Collection for the 2020-2021 period, including articles (63.67, 55%). From them, 1200 articles, from 2020 (449) and 2021 (751), are in the management and business field according to the *Web of Science Core Collection* through this search parameters: *Titled:* (COVID-19) *Refined by: DOCUMENT TYPES:* (ARTICLE) AND *WEB OF SCIENCE CATEGORIES:* (MANAGEMENT OR BUSINESS) AND *DOCUMENT TYPES:* (ARTICLE) *Timespan:* 2020, 2021. *Indexes:* SCI-EXPANDED, SSCI, A&HCI, BKCI-S, BKCI-SSH, ESCI.

Figure 2 describes the top 5 countries where high-impact articles are produced. As shown in the figure, the United States is the country with more contributions with 22% of articles produced in the business and management field (Figure 2).
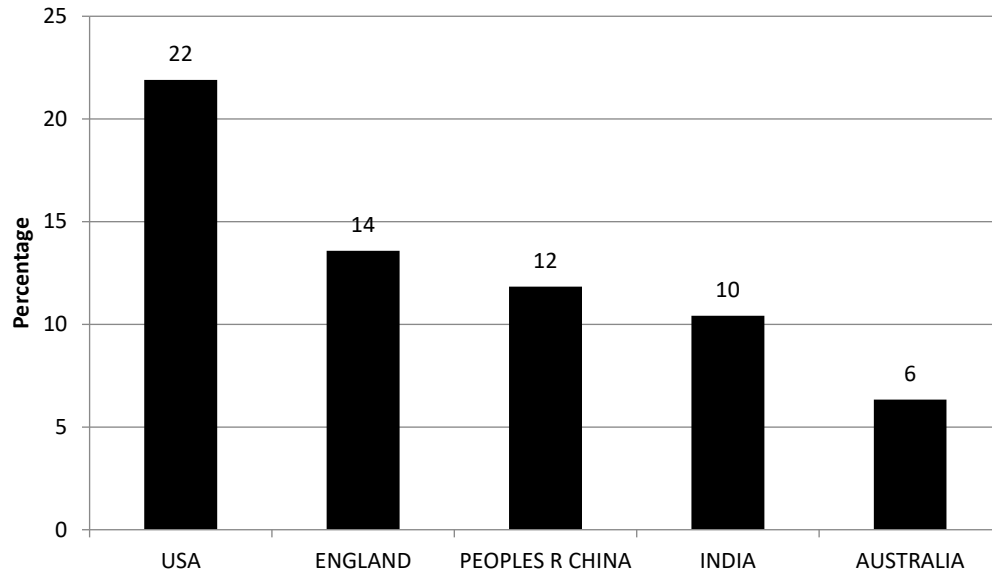
Figure 2. Top 5 countries where high-impact articles are produced

Source: Own elaboration.

Regarding the sources, these are the five main journals that published papers about COVID-19 in the business and management field according to the number of articles. Table 1 shows the core journals involved in publishing COVID-19 research articles in the field of management. In terms of the number of articles published, the Journal of Asian Finance Economics and Business is ranked on top with 70 published articles (5.83%) followed by Gender Work and Organization with 56 articles (4.66%) (Table 1).

Table 1. The most productive journals

Source Titles	Record Count	Percentage of 1200
Journal of Asian Finance Economics and Business	70	5.83%
Gender Work and Organization	56	4.66%
Journal of Nursing Management	45	3.75%
Emerging Markets Finance and Trade	44	3.66%
Technological Forecasting and Social Change	37	3.08%

Source: Source: Own elaboration.

Results

Bibliometric analysis

This section presents the main findings of this bibliometric study performed through the VOSviewer version 1.6. According to Orduña-Malea and Costas, (2021), this software is one of the most widely accepted in academic research.

The most influential authors

Regarding the authors, we selected the highest cited authors on the COVID-19 topic. Of the 3404 authors, Anders Gustafsson is the most cited author with 204 citations. Table 2 presents the top ten more cited authors with their number of citations and linkage with others.

Table 2. Top-10 most cited authors

Author	Documents	Citations	Total Link Strength
Gustafsson, Anders	2	204	0
Deng, Ian	1	182	7
Huang, Huiqiao	1	182	7
Lang, Qiuyan	1	182	7
Liao, Chunyan	1	182	7
Mo, Yuanyuan	1	182	7
Qin, Mingqin	1	182	7
Wang, Nannan	1	182	7
Zhang, Liyan	1	182	7
Sigala, Marianna	1	160	0

Source: Own elaboration.

The most cited articles

Regarding the most cited articles in the dataset, from 1200 documents we selected articles with 100 citations and more, 8 met the threshold. Four of them were published in the Journal of Business Research. *Work stress among Chinese nurses to support Wuhan in fighting against COVID-19 epidemic*, published by Mo et al. (2020) in the Journal of Nursing Management is the most cited article. Table 3 presents the 8 articles most cited with over 100 citations.

Table 3. The most cited articles

Authors	Citations	Title	Journal
Mo et al. (2020)	182	Work stress among Chinese nurses to support Wuhan in fighting against COVID-19 epidemic.	Journal of Nursing Management
Sigala (2020)	160	Tourism and COVID-19: Impacts and implications for advancing and resetting industry and research.	Journal of Business Research
Sheth (2020)	136	Impact of Covid-19 on consumer behavior: Will the old habits return or die?	Journal of Business Research
Donthu & Gustafsson (2020)	134	Effects of COVID-19 on business and research	Journal of Business Research
He & Harris (2020)	126	The impact of Covid-19 pandemic on corporate social responsibility and marketing philosophy.	Journal of Business Research

Authors	Citations	Title	Journal
Phan & Narayan (2020)	120	Country responses and the reaction of the stock market to COVID-19-A preliminary exposition.	Emerging Markets Finance and Trade
Hammami et al. (2020)	112	Physical activity and coronavirus disease 2019 (COVID-19): specific recommendations for home-based physical training.	Managing Sport and Leisure
Collins et al. (2021)	108	COVID-19 and the gender gap in work hours.	Gender, Work & Organization

Source: Own elaboration.

The most productive institutions

To analyze the most productive institutions, we conducted a co-authorship analysis. We selected organizations with at least 5 documents. Of 1680 organizations identified, 70 met the threshold. Of these 70 institutions, 38 are highly connected. Table 4 shows the 10 more productive institutions.

Table 4. The most productive institutions

Institutions	Number of Documents	Number of Citations	Total Link Strength
La Trobe University	11	191	0
Auckland University of Technology	10	131	7
Jamia Millia Islamia	10	63	11
University of Melbourne	10	224	3
University of Central Florida	9	36	2
Lancaster University	9	23	2
Copenhagen Business School	8	19	1
Dr B R Ambedkar National Institute of Technology	8	49	11
Texas A&M University	8	129	3
Griffith University	7	69	0

Source: Own elaboration.

The most cited journals

The most cited journal with at least ten papers on the topic of COVID-19 is the Journal of Business Research, with 1015 citations in 24 published papers (Table 5). Figure 3 shows how these journals are connected.

Table 5. The most cited journals

Source	Number of Documents	Number of Citations	Total Link Strength
Journal of Business Research	24	1015	73
Emerging Markets Finance and Trade	44	836	35
Journal of Nursing Management	45	442	1
Gender Work and Organization	56	416	7

| Source	Number of Documents	Number of Citations	Total Link Strength
International Journal of Contemporary Hospitality Management	26	350	7
Journal of Asian Finance Economics And Business	70	202	26
Journal of Retailing and Consumer Services	13	201	32
European Journal of Information Systems	18	198	11
Managing Sport and Leisure	11	191	2
Technological Forecasting and Social Change	37	189	30

Source: Own elaboration.
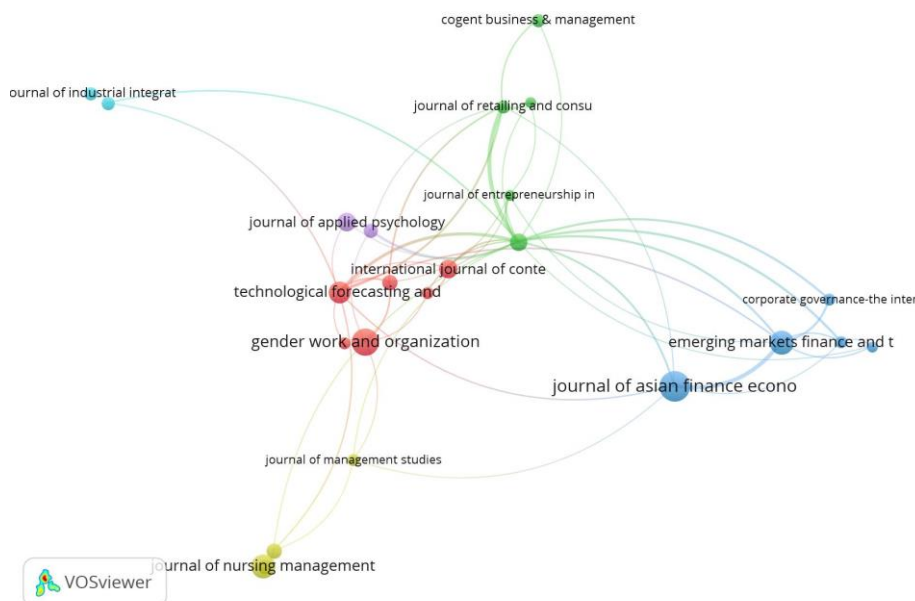
Figure 3. Relationships between cited journals

Source: Own elaboration.

Co-authorship analysis between highly cited authors

Regarding co-authorship, by selecting authorship as a unit of analysis, we found 3404 authors that have worked on the topic of COVID-19 in the business and management field. From them, we selected authors who had at least 3 articles. 40 met the threshold but only 7 of them are linked and grouped in two clusters (Table 6). How they are linked is shown in Figure 4. Regarding the number of documents, Mohd Javaid and Abid Haleem were the most productive researchers, with 10 and 9 articles, respectively.

Table 6. Co-authorship analysis

Authors	Cluster	Documents	Citations	Total Link Strength
Javaid, Mohd	1	10	63	26
Haleem, Abid		9	61	24
Singh, Ravi Pratap		5	46	16
Bahl, Shashi	2	7	36	23

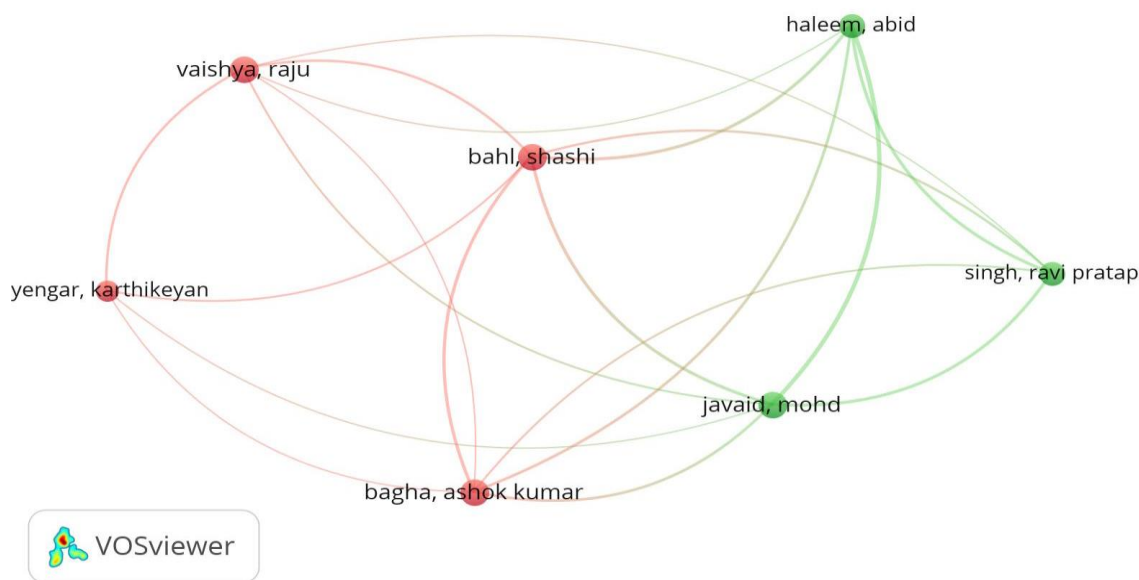| Authors	Cluster	Documents	Citations	Total Link Strength
Bagha, Ashok Kumar		5	20	17
Vaishya, Raju		4	19	11
Iyengar, Karthikeyan P.		3	4	7

Source: Own elaboration.

Figure 4. A cluster of 7 co-authorships who have at least 3 articles and are highly connected, and how these authors are related to each other.

Source: Own elaboration.

Co-authorship analysis according to countries

This analysis was conducted by selecting countries with at least 10 articles. Of the 97 countries, 39 met the threshold. These countries are grouped into 6 clusters where the countries are highly connected between them. Cluster 1: England, India, Iran, Japan, and South Korea; Cluster 2: Bangladesh, Finland, Germany, Ireland, Italy, Netherlands, Sweden, and Turkey; Cluster 3: Australia, Denmark, New Zealand, Norway, Portugal, Scotland, South Africa, Spain; Cluster 4: Egypt, Indonesia, Malaysia, Pakistan, Poland, Saudi Arabia, Taiwan, Thailand, Arab Emirates, Vietnam; Cluster 5: Brazil, Canada, China, Romania, Singapore, Switzerland, USA; Cluster 6: France (Figure 5).
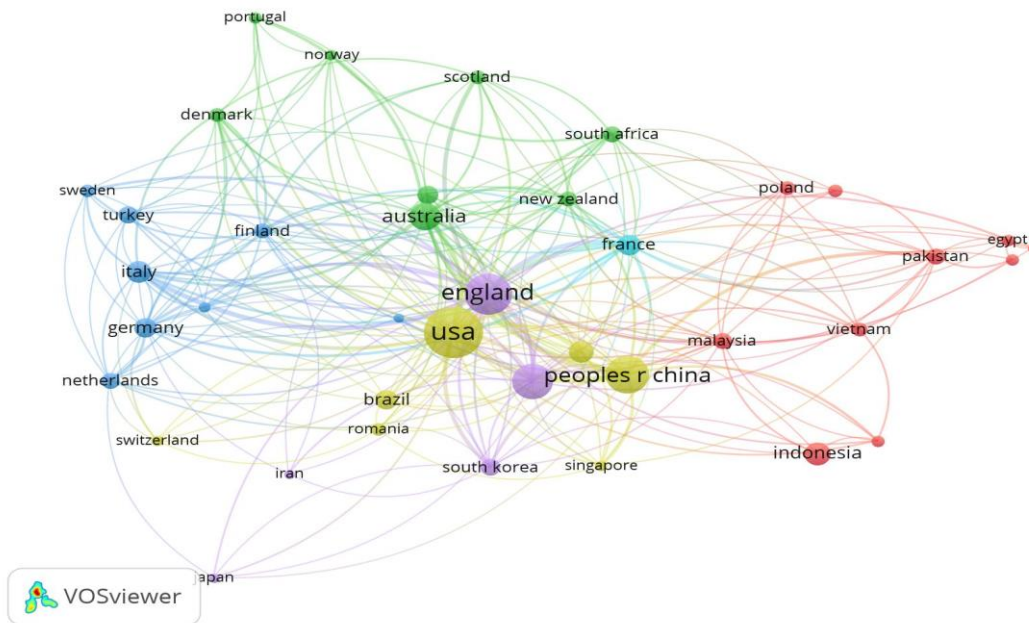
Figure 5. Networks of co-authorship between countries With More Contribution to the topic of the COVID-19 pandemic from the business and management field

Source: Own elaboration.

Co-occurrence analysis for popular keywords

This analysis is conducted to observe the scope of the COVID-19 pandemic studies in the business and management field. The most popular keywords were a total of 4560. We selected a minimum number of keyword occurrences, at least 20 times. 40 met the threshold. We filtered the keywords without considering highly cited terms, such as COVID-19, pandemic, COVID-19 pandemic, Coronavirus, and some meaningless keywords. The resultant keywords were 29, grouped into 4 clusters. Cluster 1: 9 items, Cluster 2: 9 items, Cluster 3: 6 items, and Cluster 4: 5 items. From each of the 29 keywords, the total strength of the co-occurrence links with other keywords is presented in Table 7.

Table 7. Content analysis of the 4 resultant clusters of most popular keywords in the articles related to the pandemic in the business and management field

	Keyword	Occurrences	Total Link Strength	Label and Analysis
Cluster 1 (9 documents)	Business	30	61	Label: Entrepreneurship and innovation as a response to the crisis. Analysis: This cluster is related to the response of SMEs to the crisis, to be more resilient through entrepreneurship and innovation in the frame of sustainability.
	Crisis	63	114	
	Entrepreneurship	36	65	
	Innovation	44	70	
	Management	93	178	
	Performance	101	181	
	Resilience	67	102	
	SMEs	26	41	
	Sustainability	23	35	
Cluster	Behavior	51	70	

	Keyword	Occurrences	Total Link Strength	Label and Analysis
	Crisis management	47	79	Label: Creation of management models to estimate the impact of the crisis. Analysis: This cluster is oriented to comprehend the impact of the crisis on companies, mainly in the tourism sector, through management models that involve perceptions, behaviors, satisfaction, and risk.
	Impact	129	197	
	Model	59	90	
	Perceptions	23	37	
	Risk	37	61	
	Satisfaction	36	63	
	Tourism	28	52	
	Trust	20	48	
Cluster 3 (6 documents)	Care	21	16	Label: Employees' well-being and equity. Analysis: This cluster involves leadership to promote healthy and inclusive work environments in the current crisis.
	Gender	50	51	
	Health	38	38	
	Leadership	32	46	
	Stress	27	35	
	Work	31	55	
Cluster 4 (5 documents)	Communication	27	59	Label: Communication, media, and uncertainty Analysis: This cluster addresses social media and communication through technology in the frame of uncertainty.
	Information	27	59	
	Social media	39	66	
	Technology	35	51	
	Uncertainty	24	40	

Source: … Source: Own elaboration.

According to the analysis of the clustered content, the main topics were entrepreneurship and innovation, the creation of management models, employees' well-being, and communication. Figure 6 shows the network of links between the most popular keywords.
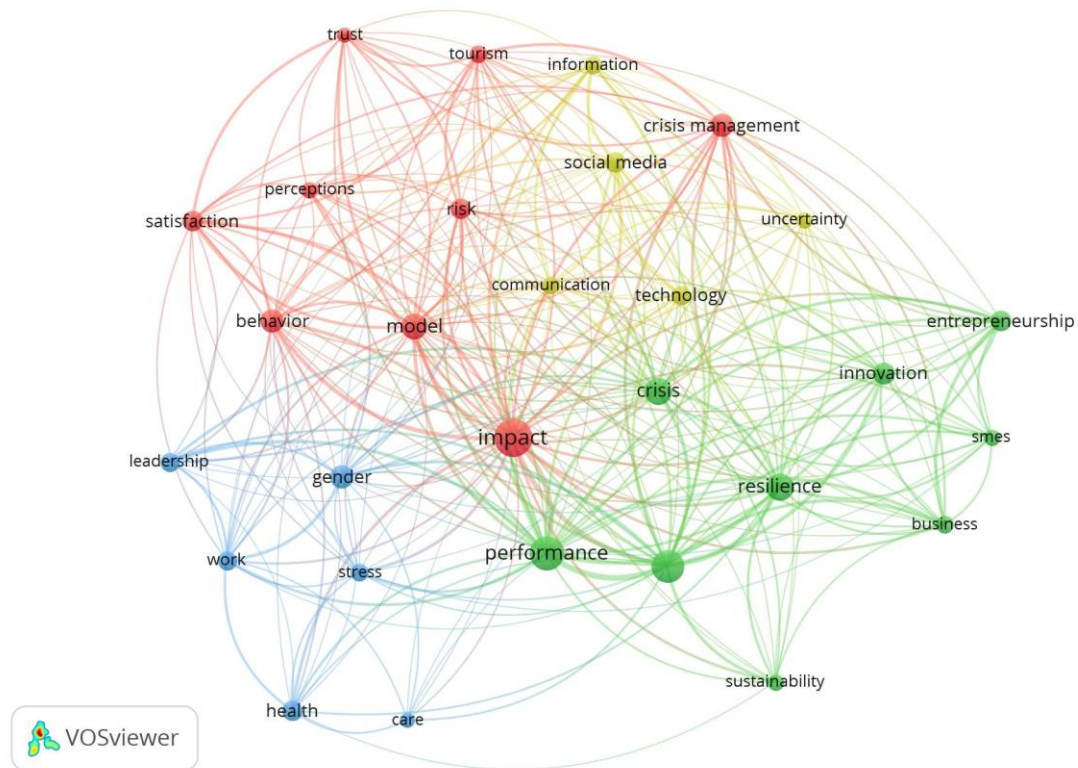
Figure 6. Mapping of four clusters based on the co-occurrences of keywords

Source: Source: Own elaboration.

Bibliographic coupling by the document as a unit of analyses

The bibliographic coupling allows the identification of papers using the same set of cited articles and the authors that are bibliographically coupled by clusters, showing not only the most influential authors but identifying the networks that are built among them. From 1200 documents, we selected those that had at least 40 citations. 39 documents met the threshold, and the total strength of the bibliographic coupling links with other documents was calculated. As seven documents, despite being highly cited, were not connected, they were eliminated and not included in the cluster analysis. Thus, analysis was done with 32 connected documents grouped in five clusters, which were identified and analyzed in both the topic and the method used. Table 8(a-e) shows the distribution of these 32 documents into the five clusters and the content analysis. Cluster 1: 11 documents, Cluster 2: 9 documents, Cluster 3: 6 documents, Cluster 4: 4 documents, and Cluster 5: 2 documents.

Table 8a. Cluster 1: Exploring the effect of the crisis derived from the COVID-19 on the production and consumption

Authors	Article	Citations	Methodological Parameters	Content
Baum et al. (2020)	COVID-19's impact on the hospitality workforce–new crisis or amplification of the norm?	49	Type of research: Quantitative Type of Article: Theoretical/conceptual study	This paper presents a reflection on the crisis derived from the pandemic and its impact on the hospitality workforce.
Baum & Hai (2020)	Hospitality, tourism, human rights and the impact of COVID-19	74	Type of research: Quantitative Type of Article: Theoretical/conceptual study	Based on a review of the current events related to COVID-19, this paper discusses the impact of the pandemic on the right to participate in hospitality and tourism.
Hall et al. (2021)	Beyond panic buying: consumption displacement and COVID-19	50	Type of research: Quantitative Type of Article: Theoretical/conceptual study	Based on consumer spending data, the authors analyze patterns of consumption displacement in the hospitality and retail sectors.
Laato et al. (2020a)	Unusual purchasing behavior during the early stages of the COVID-19 pandemic: The stimulus-organism-response approach	68	Type of research: Quantitative Type of Article: Empirical study	The authors of this study propose a model for people's purchase and isolation behavior during the COVID-19 pandemic.
Laato et al. (2020b)	What drives unverified information sharing and cyberchondria during the COVID-19 pandemic?	58	Type of research: Quantitative Type of Article: Empirical study	The authors develop and test a research model to understand why people share unverified COVID-19 information through social media.
Pantano et al. (2020)	Competing during a pandemic? Retailers' ups and downs during the COVID-19 outbreak.	71	Type of research: Quantitative Type of Article: Theoretical/conceptual study	This study synthesizes the challenges that the COVID-19 crisis brought to retailers from the perspective of consumers and managers.
Paul & Chowdhury (2020)	A production recovery plan in manufacturing supply chains	51	Type of research: Quantitative	Through a mathematical modeling approach, authors develop a production recovery model for high-

Authors	Article	Citations	Methodological Parameters	Content
	for a high-demand item during COVID-19		Type of Article: Empirical study (Mathematical modeling)	demand and essential products during the crisis of pandemics.
Sigala (2020)	Tourism and COVID-19: Impacts and implications for advancing and resetting industry and research	160	Type of research: Quantitative Type of Article: Theoretical/conceptual study	Supported by the literature analysis, this paper helps to understand and manage the impacts of COVID-19 on tourism and provides implications for further tourism research.
Uğur & Akbıyık (2020).	Impacts of COVID-19 on global tourism industry: A cross-regional comparison	42	Type of research: Quantitative Type of Article: Empirical study (Text mining techniques)	This study analyses the reactions of travelers during the pandemic through information retrieved from Trip Advisor and other forums.
Remko, V. H. (2020).	Research opportunities for a more resilient post-COVID-19 supply chain–closing the gap between research findings and industry practice.	62	Type of research: Quantitative/Qualitative Type of Article: Empirical study	Based on virtual roundtables, interviews with supply chain executives, and publicly available data about the impact of COVID-19 on the supply chain, the author explores industry challenges and suggests areas of opportunity to improve supply chain resilience.
Verma (2020)	Investigating the emerging COVID-19 research trends in the field of business and management: A bibliometric analysis approach	70	Type of research: Quantitative Type of Article: Empirical study (Bibliometric Study)	The authors conducted bibliometric research on COVID-19 literature, produced between January and May 2020 in the business and management field. Current areas of research are presented.

Source: Source: Own elaboration.

Except for one article, the academic production in this cluster is quantitative in nature. Of the 11 articles that conform this cluster, five are theoretical/conceptual and six are empirical (3 of them, with available existing data).

Table 8b. Cluster 2: Analyzing the impact of the crisis of COVID-19 on the financial issues

Authors	Article	Citations	Methodological Parameters	Content
Chen et al. (2020)	Fear sentiment, uncertainty, and bitcoin price dynamics: The case of COVID-19.	42	Type of research: Quantitative Type of Article: Empirical study (Available existing data).	The impact of fear caused by the coronavirus pandemic on Bitcoin price dynamics is studied.
He et al. (2020a)	COVID–19's impact on stock prices across different sectors—An event study based on the Chinese stock market	89	Type of research: Quantitative Type of Article: Empirical study (Available existing data)	Through an event study approach, this article examines the impact of the COVID-19 pandemic on the Chinese Stock Market.
Mishra et al. (2020)	Does the Indian financial market nosedive because of the COVID-19 outbreak, in comparison to after demonetization and the GST?	57	Type of research: Quantitative Type of Article: Empirical study (Available existing data)	This paper examines the impact of the COVID-19 pandemic on the Indian financial market.

Authors	Article	Citations	Methodological Parameters	Content
Njindan iyke (2020)	The disease outbreak channel of exchange rate return predictability: Evidence from COVID-19.	58	Type of research: Quantitative Type of Article: Empirical study (Available existing data)	Authors demonstrate that the information contained in the COVID-19 outbreak can be used to predict returns and volatility of specific currencies
Phan & Narayan (2020).	Country responses and the reaction of the stock market to COVID-19. A preliminary exposition.	120	Type of research: Quantitative Type of Article: Empirical study (Available existing data)	This article discusses how the most active financial indicator (Stock price) reacted in real-time to different stages in the evolution of COVID-19.
Salisu & Akanni (2020).	Constructing a global fear index for the COVID-19 pandemic.	45	Type of research: Quantitative Type of Article: Empirical study (Available existing data)	Authors construct a global fear index (GFI) for the COVID-19 pandemic to support economic, financial, and policy analysis, showing its application to stock return predictability.
Shen et al. (2020)	The impact of the COVID-19 pandemic on firm performance	76	Type of research: Quantitative Type of Article: Empirical study (Available existing data)	Authors studied the impact of COVID-19 on corporate performance.
Vidya & Prabheesh (2020).	Implications of COVID-19 pandemic on the global trade networks.	55	Type of research: Quantitative Type of Article: Empirical study (Available existing data)	This article measures the trade interconnectedness among countries before and after the COVID-19 outbreak and forecasts the future direction of trade.
Xiong et al. (2020)	Which firm-specific characteristics affect the market reaction of Chinese listed companies to the COVID-19 pandemic?	42	Type of research: Quantitative Type of Article: Empirical study (Available existing data)	This paper investigates market reaction to the novel coronavirus (COVID-19) pandemic.

This cluster is composed entirely of quantitative articles that address the financial effect of COVID-19 supported by the existing available data.

Table 8c. Cluster 3: Patterns of consumption and nurses' well-being

Authors	Article	Citations	Methodological Parameters	Content
Addo et al. (2020)	COVID-19: fear appeal favoring purchase behavior towards personal protective equipment.	46	Type of research: Quantitative Type of Article: Empirical study (Available existing data)	Authors analyzed the swings in purchase behavior following the COVID-19 pandemic in Wuhan, and across the world based on the theory of fear appeal.
Collins et al. (2021)	COVID-19 and the gender gap in work hours.	108	Type of research: Quantitative Type of Article: Empirical study (Available existing data)	The authors identified how the pandemic COVID-19 impacted dual-earner parents' employment, demonstrating that mothers have reduced work time significantly more than fathers.

Authors	Article	Citations	Methodological Parameters	Content
Kirk & Rifkin (2020).	I'll trade your diamonds for toilet paper: Consumer reacting, coping and adapting behaviors in the COVID-19 pandemic.	67	Type of research: Quantitative Type of Article: Theoretical/conceptual study	Authors document the unusual consumer behavior patterns that dominated in the early days of the pandemic.
Labrague & De los Santos (2020).	COVID-19 anxiety among front-line nurses: Predictive role of organizational support, personal resilience and social support.	95	Type of research: Quantitative Type of Article: Empirical study	This study examines the relative influence of personal resilience, social support, and organizational support in reducing COVID-19 anxiety in front-line nurses.
Labrague & De los Santos (2021)	Fear of COVID-19, psychological distress, work satisfaction and turnover intention among frontline nurses.	40	Type of research: Quantitative Type of Article: Empirical study	Authors examine the influence of fear of COVID-19 on nurses' psychological distress, work satisfaction, and intent to leave their job and their professions.
Mo et al. (2020)	Work stress among Chinese nurses to support Wuhan in fighting against COVID-19 epidemic.	182	Type of research: Quantitative Type of Article: Empirical study	Authors investigate the work stress among Chinese nurses that are fighting against COVID-19 in Wuhan and explore the relevant influencing factors.

Source: Source: Own elaboration.

This cluster is composed of more varied methodologies and is oriented to understanding both the consumer behaviors in the frame of the pandemic and the nurses' well-being in times of COVID-19.

Table 8d. Cluster 4: Management to contribute to coping with the pandemic crisis

Authors	Article	Citations	Methodological Parameters	Content
Hammami et al. (2020)	Physical activity and coronavirus disease 2019 (COVID-19): specific recommendations for home-based physical training.	112	Type of research: Quantitative Type of Article: Theoretical/conceptual study	Authors analyze the impact of the COVID-19 pandemic on physical activity behaviors globally and made practical recommendations to counteract the detrimental physical and mental side effects of the COVID-19 protective lifestyle regulations.
Jiang & Wen (2020).	Effects of COVID-19 on hotel marketing and management: a perspective article.	93	Type of research: Quantitative Type of Article: Theoretical/conceptual study	Based on an overview of the literature on hotel marketing and management this research analyzes hotel guest behavior.
Kraus et al. (2020)	The economics of COVID-19: initial empirical evidence on how family firms in five European countries cope with the corona crisis.	70	Type of research: Qualitative Type of Article: Empirical study	The authors investigate the effects of the COVID-19 crisis on family firms.
Wang et al. (2020)	Marketing innovations during a global crisis: A study of China firms' response to COVID-19.	40	Type of research: Quantitative Type of Article: Theoretical/conceptual study	This study explores how different firms in China are innovating their marketing strategies by identifying the typology of firms' marketing innovations.

Source: Source: Own elaboration.

Most of the studies of this cluster are quantitative and theoretical/conceptual. Only one is qualitative and empirical.

Table 8e: Cluster 5: Economic effects of the pandemic

Authors	Article	Citations	Methodological Parameters	Content
Donthu & Gustafsson (2020)	Effects of COVID-19 on business and research.	134	Type of research: Quantitative Type of Article: Theoretical/conceptual study	This editorial discusses the severe economic and social consequences of COVID-19 across the globe and the dramatic changes that the pandemic has imposed in how businesses act and consumers behave.
Gu et al. (2020)	How do firms respond to COVID-19? First evidence from Suzhou, China.	46	Type of research: Quantitative Type of Article: Empirical study (Available existing data)	In this article, daily electricity usage data for enterprises in China were examined for economic activity associated with the response to COVID-19.

Source: Own elaboration.

This cluster is oriented to analyze the effects that the pandemic has produced on the companies and examines a particular economic issue in China.

Discussion

It is established that studies related to the COVID-19 pandemic in the field of business and management spread rapidly around the globe during the past two years. As compared to 2020, the trajectory has increased during 2021 being the most productive year. This growth in the volume of high-impact articles is not limited to the increase in publications of this research topic by one specific journal and/or country. The domain has received high-impact contributions from all around the globe. It is further noticed that the majority of publications (i.e., 22) have been contributed by the United States of America, followed by England. The La Trobe University from Australia ranks first in total publications (i.e., 11). The findings further indicate that the top 10 most productive institutions contributed with about 90 publications out of the total 1200 publications associated with COVID-19 in the domain of business and management. Moreover, few top-tier journals have contributed to the growth of this field. Authors from England, the United States, Australia, and Norway are contributing significantly to the COVID-19 research in the domain of business and management. Anders Gustafsson, a professor from the Norwegian Business School is the most cited author.

The Journal of Asian Finance Economics and Business is the most productive one, with 70 publications (5.83%). It is found that the top five most productive journals accumulate about 20.98% of the total 1200 publications. It is also noted that the most cited articles are published in the Journal of Business Research with a total of 1015 citations belonging to 24 documents. The results also indicated that most of the impactful articles were authored by more than two authors, hence anticipating the greater propensity to team up for writing and publishing manuscripts. The results related to high-impact citations, publications, journals, influencing authors, and the institutions on

COVID-19 in the field of business and management offer an opportunity to acknowledge the advancement of the domain and to value the contributions of numerous actors.

The present bibliometric mapping analysis also gives valuable insight into the growth and development of COVID-19 research in the field of business and management. In this case, a graphical representation (Figure 6) indicates the co-occurrence of keywords presented by the authors. This network diagram has allowed us to show the main themes labeled as entrepreneurship and innovation in response to the crisis, development of management models, employees' well-being, and social media communication in the frame of uncertainty. These themes entail sub-areas like entrepreneurship, innovation, resilience, SMEs, sustainability, crisis management, risk, satisfaction, trust, behavior, health, stress, leadership, social media, information technology, uncertainty, etc. Hence, this bibliometric analysis provides valuable knowledge related to research trends concerning the past, present, and future of the business and management field during the COVID-19 pandemic. The findings offer a useful guide to researchers who wish to explore further this area by pursuing the research.

The findings demonstrate that COVID-19 research in the domain of business and management is still growing and has its roots in the fields of the supply chain, entrepreneurship, sustainability, marketing, risk management, and leadership. It seems that the present topic is still relevant for academicians because of the long-lasting impact of COVID-19 on our work and family life. It can be presumed that academics interested in undertaking research in this domain would have an exciting journey ahead of them, as there is still too much to explore.

Future Directions

The nature of jobs has transformed immensely due to the COVID-19 pandemic. The adverse and biggest change is unemployment. The immediate change noticed has been that the majority of the white-collar employees started working from home (Contreras et al., 2020). This potentially long-lasting change in the form of working from home and teleworking leads us to do further research in the form of job switching, job loss, behavioral consequences of job, diversified research methods, coping strategies and organizational support, changes in domestic life, life-related consequences, diversified contextual research, the workforce in the healthcare sector, pre vs. mid vs. post COVID issues, and study deprived populations, etc.

Job change

COVID-19 significantly changes the nature of work into remote work (Contreras et al., 2020). The use of advanced technology and the way of doing work is recognized as having a significant influence on job characteristics. There is no doubt that the previous literature on teleworking is a very valuable foundation, essential to further research on job control and job demands (characteristics). Furthermore, exploring what type of jobs (various technologies) are more or less influenced, and what type of workforce is required (Venkatesh, 2000).

Job loss

J*ob loss* is a very old subject and a serious economic issue. Nevertheless, greater than ever observed, a large amount of the workforce becomes unemployed and this percentage reached the staging levels (Rana et al., 2021). Job loss during the COVID-19 pandemic has considerable implications that comprise anxiety, chrono phobia, depression, frustration, maladjusted behaviors, nosophobia, nosocomephobia, sedentary lifestyle, stress, social isolation, tension, and xenophobia, etc. (see Hydari et al., 2021). Hence, the impact of job loss is wider as it may be significantly different for firms to fill the positions. Also, the approach the unemployed workforce uses to look for new jobs may have changed. Therefore, it is very important to investigate the impacts of job loss and potential reclamation.

Behavioral consequences of job

As discussed in previous sections (job change and job loss), job changes would have decreasing influences on various job outcomes beyond the traditional ones (e.g., organizational commitment, job satisfaction, in-role and extra-role performance). Technology-enabled changes within organizations have recognized effects on job outcomes (Venkatesh, 2000) and these are closely interlinked, such that there could be spiraling adverse influences. Hence, more exploration of the influence of jobs on behavioral outcomes will be a critical initial phase to manage them effectively and efficiently before more adverse and irremediable unfavorable consequences occur.

Diversified research method

The findings show that the mainstream of the published articles related to COVID-19 involves theoretical studies, especially qualitative studies and literature reviews. Only a few papers have adopted the survey method. Therefore, we suggest researchers utilize a more diversified methodology, such as mixed method design, multi-source data, and multi-time data.

Coping strategies and organizational support

It is important to investigate the vast body of knowledge on coping strategies employed by different kinds of workers (personalities) during and after the COVID-19 pandemic to advance our understanding of which type of personality is best for which type of coping strategies. The practical implications for this type of research serve as the grounds for effective managerial coaching and organizational support strategies. Furthermore, organizations can effectively design, plan, develop and implement intervention strategies (e.g., technology-related traits and personality) to support the workforce in technology-enabled workplaces.

Changes in domestic life

The demands of the household have been changing rapidly and turned out because of the massive pressure on employees and their families due to the COVID-19 pandemic. It would be very crucial to apprehend what types of changes are and who is handling them effectively. Exploring and understanding different types of changes incurred is an important initial step in supporting individuals and curbing the negative consequences.

Life-related consequences

Social and interaction needs are paralyzed and fulfilled while we considered humans as social animals. There are many common consequences associated with individuals' lives that could be impacted by the COVID-19 pandemic, such as happiness, stress, depression, and satisfaction with life (see Hydari et al., 2021). Reports suggest amplified domestic dissonance, a greater amount of divorce filings, and reported domestic cases around the world (Křepelka, 2020). It would be crucial to apprehend who (individuals based on personality traits) is handling this uncertainty more successfully.

Diversified contextual research

The COVID-19 pandemic has created terrific chaos all over the world, disturbing individuals' lives and causing a huge number of deaths. Based on the study findings, the regional contribution of COVID-19 literature is more concentrated in western cultures, such as the USA and England. To better understand the impact of COVID-19, further studies could consider more non-western countries. It is vital to understand the consistencies and differences between western and non-western countries and cultures. There have been noteworthy differences in the way these countries are dealing with the escalation rate and the exit from this pandemic (e.g., Government support). These differences could have significant implications for businesses, employees, and society as a whole.

The workforce in the healthcare sector

Healthcare has constantly been a different context of study as compared to other settings because doctors, nurses, and paramedic staff are performing more challenging jobs, even in the normal routine as they deal with situations related to life and death. During the COVID-19 pandemic, this workforce has been working long hours and performing additional duties over a long period. The challenges faced by this workforce make them a unique and important study context, as teleworking and working from home are not appropriate for them.

Pre vs. mid vs. post – COVID

Research studies conducted before and during the COVID-19 pandemic have collected data associated with numerous concepts and theoretical perspectives. As of now (July 2021), we are in the mid of this pandemic and moving to other phases (mid to post-COVID-19). The comparative studies should be conducted on data from samples related to pre vs. mid vs. post-COVID-19 for theory building, exploration of boundary conditions, and contextual understanding.

Study deprived population

The big difference lies between the underprivileged and privileged populations. People in privileged areas are safely held up at their homes and have better access to healthcare facilities. Whereas the underprivileged population, who was struck harder, has been working in essential services, getting low pay, getting low wages, and working in traditional rough places. It is indicated that COVID-19 has been impacting minority groups and people living in underprivileged areas more fiercely. Hence,

the issues that minority groups are facing could be much more than our expectations indicate, and understanding the challenges they are facing is critical to direct research.

Conclusions

The COVID-19 research topic related to business and management has experienced exponential growth since the virus was detected in Wuhan in December 2019. This growth has been significant specifically in the last two years (2020-2021). The accumulating research contributions have revealed a noticeable influence on the availability of business and management literature in the field of COVID-19. The present bibliometric mapping analysis has further revealed citations and publication growth tendencies, leading publication authors, sources, countries, and institutions, hence, offering potential implications for practitioners and researchers.

The accessibility of statistics related to top authors is useful to guide potential researchers working on ongoing projects related to business and management during the COVID-19 pandemic to attain research networking. This study also identified that the most productive institution was La Trobe University, which contributed a total of 11 impact articles. This precise information guides the marketers and potential researchers about the institutes' fields of expertise. Moreover, this unique information could be valuable in seeking research guidance, expert viewpoints, collaboration, research grants/support, and guidance on business and management during the COVID-19 pandemic for the growth of the field and to refine corporate strategies.

In addition, this study discloses the five most productive journals accounting for 20.98% of the publications related to the topic under study. This offers a unique prospect for potential scholars to use less energy in retrieving the avenues where most of the high-impact articles have been published. Moreover, the findings related to the network analysis of the co-occurrence of the keywords that are supplied by the authors, related to the business and management during the COVID-19 pandemic, demonstrate to potential researchers the evolution of the area. Therefore, they can easily discover present and future research topics and may contribute to the growth of the domain. Finally, it can be anticipated that the topic under consideration has been well established and needs great significance for practitioners and academics.

Referencias

Addo, P. C., Jiaming, F., Kulbo, N. B. & Liangqiang, L. (2020). COVID-19: fear appeal favoring purchase behavior towards personal protective equipment. *The Service Industries Journal*, *40*(7-8), 471-490. https://doi.org/10.1080/02642069.2020.1751823

Baum, T. & Hai, N. T. T. (2020). Hospitality, tourism, human rights and the impact of COVID-19. *International Journal of Contemporary Hospitality Management, 32*(7) 2397-240. https://doi.org/10.1108/IJCHM-03-2020-0242

Baum, T., Mooney, S. K., Robinson, R. N. & Solnet, D. (2020). COVID-19's impact on the hospitality workforce–new crisis or amplification of the norm? *International Journal of Contemporary Hospitality Management, 32*(9), 2813-2829. https://doi.org/10.1108/IJCHM-04-2020-0314

Belussi, F., Orsi, L. & Savarese, M. (2019). Mapping business model research: a document bibliometric analysis. *Scandinavian Journal of Management*, *35*(3), 101048. https://doi.org/10.1016/j.scaman.2019.101048

Bhardwaj, A. K., Garg, A., Ram, S., Gajpal, Y. & Zheng, C. (2020). Research Trends in Green Product for Environment: A Bibliometric Perspective. *International Journal of Environmental Research and Public Health*, *17*(22), 8469. https://doi:10.3390/ijerph17228469

Chen, C., Liu, L. & Zhao, N. (2020). Fear sentiment, uncertainty, and bitcoin price dynamics: The case of COVID-19. *Emerging Markets Finance and Trade*, *56*(10), 2298-2309. https://doi.org/10.1080/1540496X.2020.1787150

Contreras, F., Baykal, E. & Abid, G. (2020). E-leadership and teleworking in times of COVID-19 and beyond: What we know and where do we go. *Frontiers in psychology*, *11*, 590271. https://doi.org/10.3389/fpsyg.2020.590271

Crayne, M. P. (2020). The traumatic impact of job loss and job search in the aftermath of COVID-19. *Psychological Trauma: Theory, Research, Practice, and Policy*, *12*(S1), S180. http://dx.doi.org/10.1037/tra0000852

Collins, C., Landivar, L. C., Ruppanner, L. & Scarborough, W. J. (2021). COVID-19 and the gender gap in work hours. *Gender, Work & Organization*, *28*, 101-112. https://doi.org/10.1111/gwao.12506

De Bakker, F. G., Groenewegen, P. & Den Hond, F. (2005). A bibliometric analysis of 30 years of research and theory on corporate social responsibility and corporate social performance. *Business & society*, *44*(3), 283-317. https://doi.org/10.1177/0007650305278086

Donthu, N. & Gustafsson, A. (2020). Effects of COVID-19 on business and research. Journal of Business Research, 117, 284-289. https://doi.org/10.1016/j.jbusres.2020.06.008

Du, H. S., Xu, J., Li, Z., Liu, Y. & Chu, S. K. W. (2021). Bibliometric mapping on sustainable development at the base-of-the-pyramid. *Journal of Cleaner Production*, *281*, 125290. https://doi.org/10.1016/j.jclepro.2020.125290

Ferretti, L., Ledda, A., Wymant, C., Zhao, L., Ledda, V., Abeler-Dörner, L., ... & Fraser, C. (2020). The timing of COVID-19 transmission. *MedRxiv*, 2020-09.

Gaviria-Marin, M., Merigó, J. M. & Baier-Fuentes, H. (2019). Knowledge management: A global examination based on bibliometric analysis. *Technological Forecasting and Social Change*, *140*, 194-220. https://doi.org/10.1016/j.techfore.2018.07.006

Gu, X., Ying, S., Zhang, W. & Tao, Y. (2020). How do firms respond to COVID-19? First evidence from Suzhou, China. *Emerging Markets Finance and Trade*, *56*(10), 2181-2197. https://doi.org/10.1080/1540496X.2020.1789455

Hall, M. C., Prayag, G., Fieger, P. & Dyason, D. (2021). Beyond panic buying: consumption displacement and COVID-19. *Journal of Service Management, 32*(1), 113-128. https://doi.org/10.1108/JOSM-05-2020-0151

Hammami, A., Harrabi, B., Mohr, M. & Krustrup, P. (2020). Physical activity and coronavirus disease 2019 (COVID-19): specific recommendations for home-based physical training. *Managing Sport and Leisure*, 1-6. https://doi.org/10.1080/23750472.2020.1757494

He, H. & Harris, L. (2020). The impact of Covid-19 pandemic on corporate social responsibility and marketing philosophy. *Journal of business research*, *116*, 176-182. https://doi.org/10.1016/j.jbusres.2020.05.030

He, P., Sun, Y., Zhang, Y. & Li, T. (2020). COVID–19's impact on stock prices across different sectors—An event study based on the Chinese stock market. *Emerging Markets Finance and Trade*, *56*(10), 2198-2212. https://doi.org/10.1080/1540496X.2020.1785865

Howard, J., Huang, A., Li, Z., Tufekci, Z., Zdimal, V., Van Der Westhuizen, H. M., ... & Rimoin, A. W. (2021). An evidence review of face masks against COVID-19. *Proceedings of the National Academy of Sciences*, *118*(4), e2014564118.

Hydari, M. A., Abid, G., Asif, M. F., Butt, T. H. & Lassi, Z. S. (2021). The effects of COVID-19 (Corona Virus Disease 2019) pandemic: An exploratory study of Pakistan. *International Journal of Disaster Recovery and Business Continuity, 12*(1), 1431-1449.

IMF (2020). Anual Report. A year like no other. https://www.imf.org/external/pubs/ft/ar/2020/eng/

Jiang, Y. & Wen, J. (2020). Effects of COVID-19 on hotel marketing and management: a perspective article. *International Journal of Contemporary Hospitality Management*.*32*(8), 2563-2573. https://doi.org/10.1108/IJCHM-03-2020-0237

Kirk, C. P. & Rifkin, L. S. (2020). I'll trade you diamonds for toilet paper: Consumer reacting, coping and adapting behaviors in the COVID-19 pandemic. *Journal of Business Research*, *117*, 124-131. https://doi.org/10.1016/j.jbusres.2020.05.028

Křepelka, F. (2020). Právo pandemie covidu-19: náčrt celkového obrazu. Law of the Covid-19 Pandemic: A Sketch of the Whole Picture. *Časopis zdravotnického práva a bioetiky*, *10*(2), 1-70.

Laato, S., Islam, A. N., Farooq, A. & Dhir, A. (2020a). Unusual purchasing behavior during the early stages of the COVID-19 pandemic: The stimulus-organism-response approach. *Journal of Retailing and Consumer Services*, *57*, 102224. https://doi.org/10.1016/j.jretconser.2020.102224

Laato, S., Islam, A. N., Islam, M. N. & Whelan, E. (2020b). What drives unverified information sharing and cyberchondria during the COVID-19 pandemic?. *European Journal of Information Systems*, *29*(3), 288-305. https://doi.org/10.1080/0960085X.2020.1770632

Labrague, L. J. & De los Santos, J. A. A. (2020). COVID-19 anxiety among front-line nurses: Predictive role of organisational support, personal resilience and social support. *Journal of nursing management*, *28*(7), 1653-1661. https://doi.org/10.1111/jonm.13121

Labrague, L. J. & de Los Santos, J. A. A. (2021). Fear of Covid-19, psychological distress, work satisfaction and turnover intention among frontline nurses. *Journal of nursing management*, *29*(3), 395-403. https://doi.org/10.1111/jonm.13168

Merigó, J. M. & Yang, J. B. (2017). A bibliometric analysis of operations research and management science. *Omega*, *73*, 37-48. https://doi.org/10.1016/j.omega.2016.12.004

Mishra, A. K., Rath, B. N. & Dash, A. K. (2020). Does the Indian financial market nosedive because of the COVID-19 outbreak, in comparison to after demonetisation and the GST? *Emerging Markets Finance and Trade*, *56*(10), 2162-2180. https://doi.org/10.1080/1540496X.2020.1785425

Mo, Y., Deng, L., Zhang, L., Lang, Q., Liao, C., Wang, N., ... & Huang, H. (2020). Work stress among Chinese nurses to support Wuhan in fighting against COVID-19 epidemic. *Journal of nursing management*, *28*(5), 1002-1009. https://doi.org/10.1111/jonm.13014

Mora, L., Bolici, R. & Deakin, M. (2017). The first two decades of smart-city research: A bibliometric analysis. *Journal of Urban Technology*, *24*(1), 3-27. https://doi.org/10.1080/10630732.2017.1285123

Moya-Clemente, I., Ribes-Giner, G. & Chaves-Vargas, J. C. (2021). Sustainable entrepreneurship: an approach from bibliometric analysis. *Journal of Business Economics and Management*, *22*(2), 297-319. https://doi.org/10.3846/jbem.2021.13934

Njindan Iyke, B. (2020). The disease outbreak channel of exchange rate return predictability: Evidence from COVID-19. *Emerging Markets Finance and Trade*, *56*(10), 2277-2297. https://doi.org/10.1080/1540496X.2020.1784718

Omary, M. B., Eswaraka, J., Kimball, S. D., Moghe, P. V., Panettieri, R. A. & Scotto, K. W. (2020). The COVID-19 pandemic and research shutdown: staying safe and productive. *The Journal of clinical investigation*, *130*(6), 2745-2748. https://doi.org/10.1172/JCI138646

Orduña-Malea, E. & Costas, R. (2021). Link-based approach to study scientific software usage: The case of VOSviewer. *Scientometrics*, *126*(9), 8153-8186. https://doi.org/10.1007/s11192-021-04082-y

Pantano, E., Pizzi, G., Scarpi, D. & Dennis, C. (2020). Competing during a pandemic? Retailers' ups and downs during the COVID-19 outbreak. *Journal of Business Research*, *116*, 209-213. https://doi.org/10.1016/j.jbusres.2020.05.036

Paul, S. K. & Chowdhury, P. (2020). A production recovery plan in manufacturing supply chains for a high-demand item during COVID-19. *International Journal of Physical Distribution & Logistics Management*, *51*(2),104-125. https://doi.org/10.1108/IJPDLM-04-2020-0127

Phan, D. H. B. & Narayan, P. K. (2020). Country responses and the reaction of the stock market to COVID-19- A preliminary exposition. *Emerging Markets Finance and Trade*, *56*(10), 2138-2150. https://doi.org/10.1080/1540496X.2020.1784719

Rana, K. S., Abid, G., Nisar, A. & Nawaz, M. (2021). Impact of novel coronavirus (Covid-19) on aspects of personal and professional life. *Journal of Contemporary Issues in Business and Government, 27*(2), 6466-6481. https://doi.org/10.47750/cibg.2021.27.02.633

Remko, V. H. (2020). Research opportunities for a more resilient post-COVID-19 supply chain–closing the gap between research findings and industry practice. *International Journal of Operations & Production Management*, *40*(4), 341-355. https://doi.org/10.1108/IJOPM-03-2020-0165

Salisu, A. A. & Akanni, L. O. (2020). Constructing a global fear index for the COVID-19 pandemic. *Emerging Markets Finance and Trade*, *56*(10), 2310-2331. https://doi.org/10.1080/1540496X.2020.1785424

Sánchez-Teba, E. M., Benítez-Márquez, M. D. & Porras-Alcalá, P. (2020). Gender Diversity in Boards of Directors: A Bibliometric Mapping. *Journal of Open Innovation: Technology, Market, and Complexity*, *7*(1), 1-16. https://doi.org/10.3390/joitmc7010012

Shen, H., Fu, M., Pan, H., Yu, Z. & Chen, Y. (2020). The impact of the COVID-19 pandemic on firm performance. *Emerging Markets Finance and Trade*, *56*(10), 2213-2230. https://doi.org/10.1080/1540496X.2020.1785863

Sheth, J. (2020). Impact of Covid-19 on consumer behavior: Will the old habits return or die? *Journal of business research*, *117*, 280-283. https://doi.org/10.1016/j.jbusres.2020.05.059

Sigala, M. (2020). Tourism and COVID-19: Impacts and implications for advancing and resetting industry and research. *Journal of business research*, *117*, 312-321. https://doi.org/10.1016/j.jbusres.2020.06.015

Uğur, N. G. & Akbıyık, A. (2020). Impacts of COVID-19 on global tourism industry: A cross-regional comparison. *Tourism Management Perspectives*, *36*, 100744. https://doi.org/10.1016/j.tmp.2020.100744

Venkatesh, V. (2020). Impacts of COVID-19: A research agenda to support people in their fight. *International journal of information management*, *55*, 102197. https://doi.org/10.1016/j.ijinfomgt.2020.102197

Verma, S. & Gustafsson, A. (2020). Investigating the emerging COVID-19 research trends in the field of business and management: A bibliometric analysis approach. *Journal of Business Research*, *118*, 253-261. https://doi.org/10.1016/j.jbusres.2020.06.057

Vidya, C. T. & Prabheesh, K. P. (2020). Implications of COVID-19 pandemic on the global trade networks. *Emerging Markets Finance and Trade*, *56*(10), 2408-2421. https://doi.org/10.1080/1540496X.2020.1785426

Wang, Y., Hong, A., Li, X. & Gao, J. (2020). Marketing innovations during a global crisis: A study of China firms' response to COVID-19. *Journal of Business Research*, *116*, 214-220. https://doi.org/10.1016/j.jbusres.2020.05.029

Worldometer (March, 2021). Worldometer https://www.worldometers.info

Xiong, H., Wu, Z., Hou, F. & Zhang, J. (2020). Which firm-specific characteristics affect the market reaction of Chinese listed companies to the COVID-19 pandemic? *Emerging Markets Finance and Trade*, *56*(10), 2231-2242. https://doi.org/10.1080/1540496X.2020.1787151

Zupic, I. & Čater, T. (2015). Bibliometric methods in management and organization. *Organizational Research Methods*, *18*(3), 429-472. https://doi.org/10.1177/1094428114562629