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FIRM RESILIENCE RESEARCH DEVELOPMENT: A BIBLIOMETRIC ANALYSIS WITH VOSVIEWER

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Abstract: This research examines the development of research on the topic of firm resilience which is currently very relevant to the conditions of the Covid-19 pandemic using bibliometric analysis with the support of the VOSviewer application. This study aims to find out: (1) the development of research on firm resilience published in international journals listed on the Scopus database from 1991-2021; (2) publication of international journals on corporate resilience; and (3) a map of the development of international research publications in the field of keyword-based firm resilience. Data collection was carried out through a search through the Scopus website with the keyword "firm resilience", with the categories of article titles, abstracts, keywords for the period 1991-2021. Analysis and visualization of database is carried out using the VOSviewer application. As a result, the citation analysis found 17,028 citations from 1991 to 2021. Ivanov, D. is the most productive researcher of the ten publications. A term author keyword trend analysis found that 3,289 author keywords were used in selected articles containing at least 10 events, yielding 38 author keywords with strong relevance. The term "Covid-19" is the term most used by writers with a total of 87 channels of connections. The country that publishes the most articles on corporate woes is the United States, with 303 articles.

Keywords: *Bibliometrics, Firm Resilience, Scopus, VOSviewer*

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1. Introduction

Firm resilience is a prominent area of research (Horne & Orr, 1998; Linnenluecke, Griffiths, & Winn, 2012; Linnenluecke, 2015) , as it reflects the dynamic business environment in which the company currently operates. Companies are pressured not only to deliver products on time and efficiently while managing their supply chains, but also to design business networks that are resistant to various disruptions (Ali & Gurd, 2020; Ivanov & Dolgui, 2020a; Wong, Lirn, Yang, & Shang, 2020). For example, during the COVID-19 pandemic, the scarcity of raw materials and components globally, coupled with fluctuating demand conditions for certain products and the emergence of *"panic buying*" events show how vulnerable supply chain conditions are when disruption (Ivanov & Dolgui, 2020b, 2021; Paul & Chowdhury, 2021; Salvato, Sargiacomo, Amore, & Minichilli, 2020). The phenomenon confirms that companies need to rethink and reevaluate the state of their company's resilience. Resilient companies can identify and mitigate vulnerabilities before

they occur, and can react and recover quickly and cost-effectively post-disruption (Ali, Mahfouz, & Arisha, 2017; Ali, Arslan, Khan, & Tarba, 2021).

Previous research on *resilience* is interdisciplinary, although many theoretical and empirical works in areas such as psychology (Joyce et al., 2018; Oshio, Taku, Hirano, & Saeed, 2018), economics (Lazzaroni & van Bergeijk, 2014), business management (Bhamra, Dani, & Burnard, 2011; Linnenluecke, 2015) and supply chain management (Johnson & Nagarur, 2012; Meriton & Graham, 2017), but the conceptualization remains fragmented. Bibliometric analysis plays a role in evaluating the results of scientific research and mapping the field of science, tracking the development of new knowledge in specific fields related to core journals in international publications on the interrelationships of research in the resilience of family companies facing the shock of change. Bibliometric indicators are calculated over a period of time and generally use two approaches, namely (1) the number of publications, indicators that measure productivity; and (2) the number of citations, an indicator that measures the impact of the resulting article (Mongeon & Paul-Hus, 2016).

Bibliometrics and science was introduced in 1969 by Pritchard, Nalimov and Mulchencko. Pritchard argues that bibliometrics is a way of applying mathematics and statistics to books and other communication media. Nalimov and Mulchenko define scienceometrics as a qualitative method by viewing the analysis of science as an information process (Eck & Waltman, 2014). Bibliometrics is a set of mathematical and statistical methods used to analyze and measure the quantity and quality of books, articles and publications (Valérie & Pierre, 2010). In quantitative literature network analysis, researchers often use a combination of mapping and clustering techniques. However, usually the mapping and grouping techniques used together depend on very different ideas and assumptions.

An integrated approach to mapping and grouping bibliometric networks suggests that VOS mapping techniques and weighted and parameterized variants of modularity-based groupings can both be derived from the same basic principle (Waltman, van Eck, & Noyons, 2010). This approach aims to generate a mapping and combined grouping of the most frequently cited publications that appear for a given period related to the resilience of the company.

The following research aims to answer research problems: (1) How the development of international scientific publications on the topic of corporate resilience from 1991-2021 in reputable international journals; (2) How many core journals in international publications use the concept of toughness; (3) How to map the development of international publications of corporate resilience research topics based on keywords. The purpose of this study is to determine: (a) the development of the number of international publications on the topic of corporate resilience from 1991-2021; (b) a development map of international research publications on the topic of corporate resilience based on its keywords and article authors.

Bibliometric

Bibliometric coponents consist of three categories, namely: a) bibliometrics for bibliometrics for bibliometricians, is the main domain of bibliometric research and is traditionally used as a research methodology; b) bibliometrics for scientific *information*), given that researchers work scientifically, their interest is very strong in their field of specialization and allows for the existence of a common frontier with quantitative research in information retrieval; c) bibliometrics for policy and management sciences (*science policy*), is the realm of research evaluation in a variety of research topics (Glenisson, Glänzel, Janssens, & De Moor, 2005). Bibliometric analysis is a quantitative method of analyzing bibliographic data contained in articles/journals. This analysis is typically used to examine

references to academic papers cited in journals, map journal subjects, and categorize academic papers by areas of study. This method can be used in sociology, humanities, communications, marketing and other social groups.

Methods used in bibliometric analysis include citation analysis, which examines whether an article is cited by a single article, and co-citation analysis, which examines whether an article is cited by two or more articles. The concept of science contained in a document can be seen through the words (*co-words*) used. *Co-word* analysis based on the *co-occurrence* analysis of words or keywords from two or more documents used to index documents (Zupic & Čater, 2015).

Bibliometrics with VOSviewer

VOSviewer is software that can be used to build and visualize bibliometric networks. The network includes individual journals, journal researchers, or publications, which may be based on citations, bibliographic aggregations, co-citations, or co-author relationships. VOSviewer also provides text mining capabilities that can be used to build and visualize a network of important terms that appear together from a scientific literature. VOSviewer is a computer program that can be used to explore knowledge maps of metric literature (Shah, Lei, Ali, Doronin, & Hussain, 2020). VOS on VOSviewer stands for "*Visualization of Similarities*". The algorithm used in the program is almost identical to *Multi Dimensional Scaling* (MDS). VOSviewer database files support four types of bibliographic database files: *Web of Science* files, *Scopus* files, *Dimensions* files, and *PubMed* files. The advantage of VOSviewer over other analysis applications is that the program uses *text mining* capabilities to identify relevant noun phrase combinations through mapping and an integrated grouping approach for the purpose of studying co-citation data and *co-occurrence* networks. There are many programs for analyzing textual unit and matrix similarity, but VOSviewer's strength lies in visualization. The program's interactive options and features make it easy to access and explore quantitative literature data networks, including citation counts and co-occurrences of key terms and concepts.

Bibliometric data search "*Firm Resilience*" is carried out using Scopus data which isn *abstract* databases and citations and indexers containing highly reputable international scientific publications. Abstracts and citations are the result of *peer-reviewed* literature of journals, scholars, proceedings, books, and other conference articles. Scopus can be used tosearch bibliographies as a database source. The selection to use Scopus is because Scopus is one of the data centers of scientific literature owned by the world's leading publisher, Elsevier. Scopus was introduced in general in 2004 (Chadegani et al., 2013). The data that take center stage on bibliometric analysis tend to be massive (their number is usually hundreds, and even thousands); is objective (for example, the number of citations and publications, the occurrence of keywords and topics); nevertheless its interpretation often relies on objective (e.g., performance analysis) and subjective (e.g., thematic analysis) evaluations established through informed Techniques and procedures (Donthu, Kumar, Mukherjee, Pandey, & Lim, 2021).

2. Research Method

It uses data from international publications sourced from the Scopus database (*www.scopus.com*). Data collection was carried out through a search with the keyword "*Firm Resilience*" with a total of 1,356 reputable international journal articles (Figure 1).

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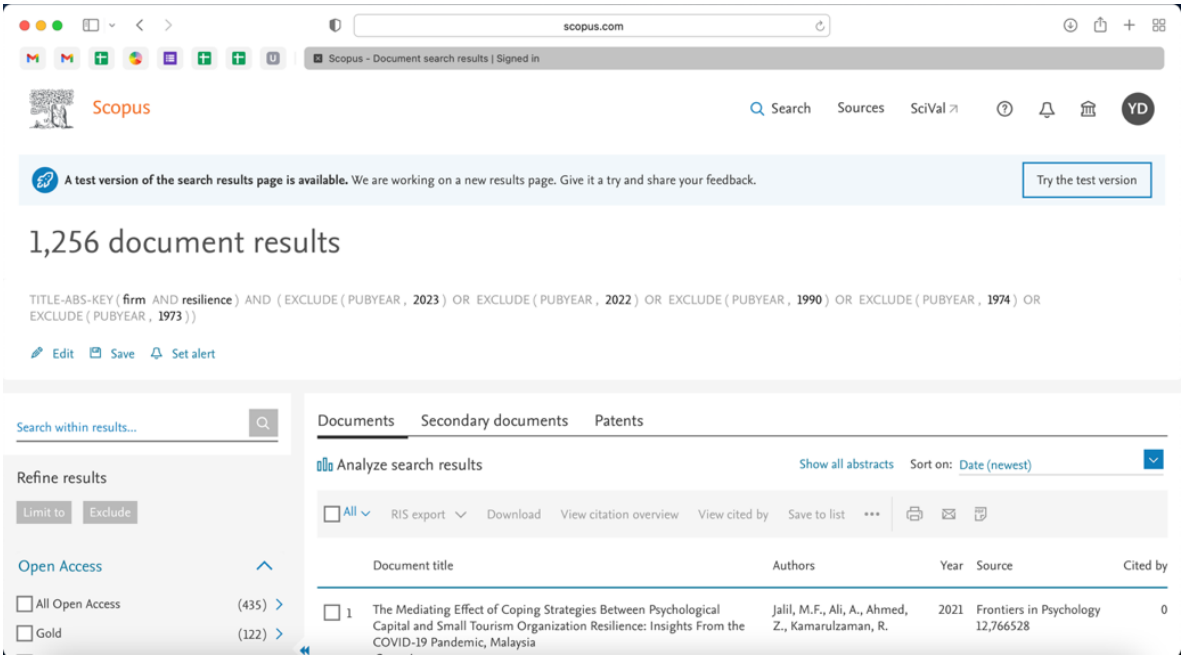

Figure 1. Bibliographic Search Within the Scopus Application
Source: www.scopus.com

The data obtained through the search on Scopus were analyzed using bibliometric analysis consisting of four steps according to (Julia et al., 2020) as follows: 1) search stage, 2) filtering stage, 3) bibliometric attribute check, and 4) bibliometric analysis. The explanation of each of these stages is as follows.

Search Stage

Scopus is used to search for a bibliography as the source of the database to be used. The choice to use Scopus is because Scopus is one of the largest databases providing *peer-reviewed* literature and publications. In this study, the search for the bibliography to be used for analysis was limited to several aspects. First, the type of bibliographic document search based on journal article tittle, abstract, and keywords. Second, the key words used are "*firm resilience*". Thirdly, restrictions are placed on English search. Fourth, searches are limited to a 30-year period, i.e. from 1991 to 2021.

Filtering Stage

At the filtering stage, a selection is made to select the journal to be analyzed. The bibliography selected and used is based on article titles, abstracts, keywords, articles or reviews. An initial data search through the Scopus application yields 1. 256 bibliographies, with limited search criteria with the keyword "*firm resilience*". Furthermore, screening of article titles that use English produces 1. 236 bibliographies (in table 1).

Table 1. Bibliography Filtering Results

Year of publication	Selected	Not Selected	Total
2021	305	5	310
2020	170	1	171
2019	132	3	135
2018	126	4	130
2017	90	1	91

2016	81	1	82
2015	72	2	74
2014	52	1	53
2013	37	1	38
2012	29	–	29
2011	21	–	21
2010	29	–	29
2009	17	–	17
2008	13	–	13
2007	14	–	14
2006	8	–	8
2005	8	–	8
2004	7	–	7
2003	0	–	0
2002	3	–	3
2001	5	–	5
2000	1	1	2
1999	2	–	2
1998	0	–	0
1997	5	–	5
1996	2	–	2
1995	1	–	1
1994	1	–	1
1993	2	–	2
1992	1	–	1
1991	2	–	2
TOTAL	**1.256**	**20**	**1.236**

Attribute checks and bibliometric analysis

This research analyzes based on three points contained in the problem formulation. Analisis bibliometric carried out is expected to answer questions in the formulation of problems that have been stated at the beginning related to the development of international scientific publications, the number of core journals in international publications, and mapping the development of international publications related to the topic of corporate resilience research (*firm resilience*). A VOSviewer application is used to assist with bibliometric analysis by visualizing the results of the analysis. VOSviewer is a computer program used to visualize bibliometric maps. The *text-mining* function is used in visualizing a network or relationship (*co-relation*) of article citations. VOSviewer can present and visualize specific information about bibliometric graph maps so that it is easier to interpret a relationship or network (Jan van Eck & Waltman, 2010).

The first stage of bibliometric analysis is a filtered document on scopus that has been given criteria restrictions on export by selecting the Excel CSV type (Figure 2). Furthermore, the exported file can be used in the VOSviewer application.

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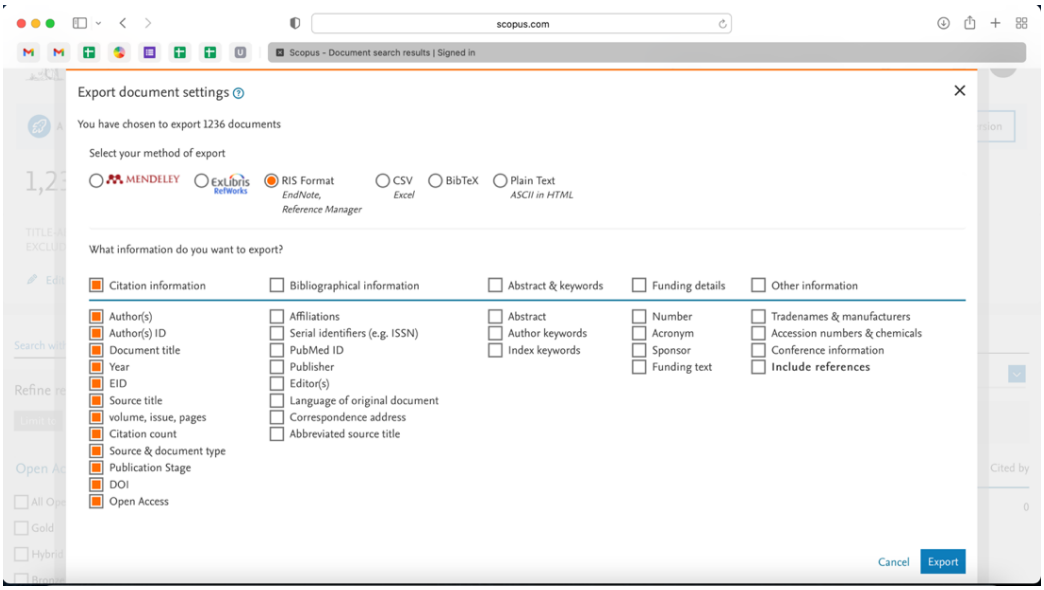

Figure 2. Export documents on Scopus App
Source: www.scopus.com

The second step is to select *create* in the VOSviewer application. Then select *create a map base on* bibliographic data, click next, select *read data from bibliographic database files (Supported file types: Web of Science, Scopus, Dimensions, and PubMed)*, click *next*, select *scopus*, input files that have been extracted from scopus (in the form of . CSV file), click Next, then select *Co-occurrence/ Co-authorship/ CO Citation*, click *Next*, click *Finish*.

3. Results and Discussion

Citation Analysis

Citation analysis is a form of bibliometric analysis based on the relationship of citations of scientific papers. This method is used to analyze various journals, articles, cited objects, and cited phenomena to determine the inherent properties of econometric literature analysis methods. One way he assesses the quality of scientific publications is by counting the number of times the research has been cited by other researchers. Citations from scientific papers have useful implications in the field of science (Benjamin, 2012). Afrequently cited work suggests the work is often the subject of discussion among researchers (Benjamin 2012). For research related to the topic of firm resilience, the results of the citation analysis from the Scopus website show that the number of citations from 1991-2021 is 17,028 citations. When viewed per year, the most citations occurred in 2021, namely 4,838 citations.

Analyze Publication Trends

The productivity of the top 10 researchers on the topic of firm resilience in 1991-2021 indexed by Scopus shows that researcher productivity ranges from 4-10 publications. Based on Figure 3, it can be seen that researchers Ivanov, D. have the largest productivity of 10 publications, while the smallest are researchers Cainelli, G., Danes, S.M., Duarte Alonso, A., and Gallegati, M. which are 4 publications each. Researchers Mandal, S., Rajesh, R., and Stevenson, M. each with 6 publications; researchers Blackhurst, J. and Zobel, C.W. each with 5 publications.

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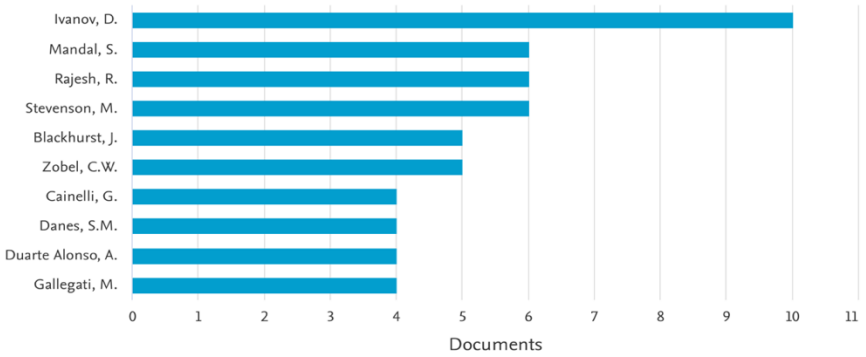

Figure 3. The ten largest authors of firm resilience article from 1991-2021
Source: www.scopus.com

Area Subject Analysis

Based on Figure 4, you can see the 3 largest area subjects, namely *Business, Management & Accounting* as many as 26.7% or 634 documents, *Social Sciences* as many as 14.8% or 352 documents and Economics, Econometrics & Finance as much as 13% or 308.

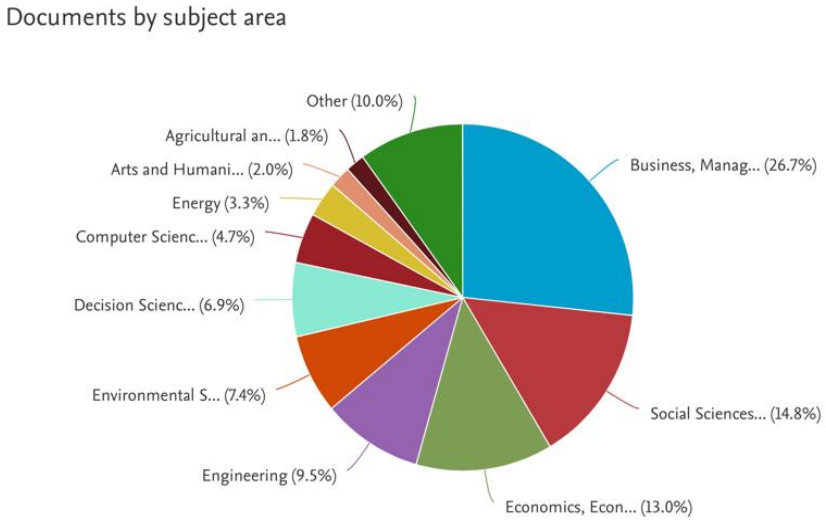

Figure 4. Subjects of the publication area on the topic of firm resilience from 1991-2021
Source: www.scopus.com

Author Collaboration Analysis

Collaboration in research is expected, because research is not always carried out individually (Saleem, Isha, Yusop, Awan, & Naji, 2023). Therefore, cooperation between researchers and between agencies is needed both in terms of ideas, funds, facilities and infrastructure as well as opportunities to share certain knowledge and techniques to support the development of a science. In this study, out of 2,992 authors, 4 authors had a strong relationship, namely Li, Y., Ivanov, D., Dolgui, A., and Blackhurst, J. Each author in each link group was different. The author who has the most links is Ivanov, D.

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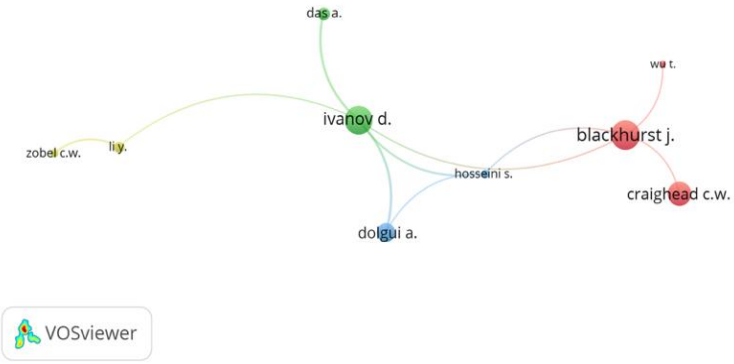

Figure 5. Author Collaboration
Source: VOSviewer, 2022.

Trend Terms Analysis

This analysis aims to analyze the content, patterns and trends of the document set by measuring the strength of terms and counting the number of keywords that appear simultaneously in the article under study (Russell & Rousseau, 2015). There were 6,265 keywords, using the minimum number of occurrences of 5 conditions, then the results found as many as 351 relevant. There are 6 clusters, cluster 1 is red with 114 items, cluster 2 is green with 78 items, cluster 3 is dark blue with 73 items, cluster 4 is yellow with 51 items, cluster 5 is purple with 23 items, and cluster 6 is light blue with 12 items . The term in the title that is most used in articles on the topic of *firm resilience* is "*resilience*" with a total of 290 events (Figure 6).

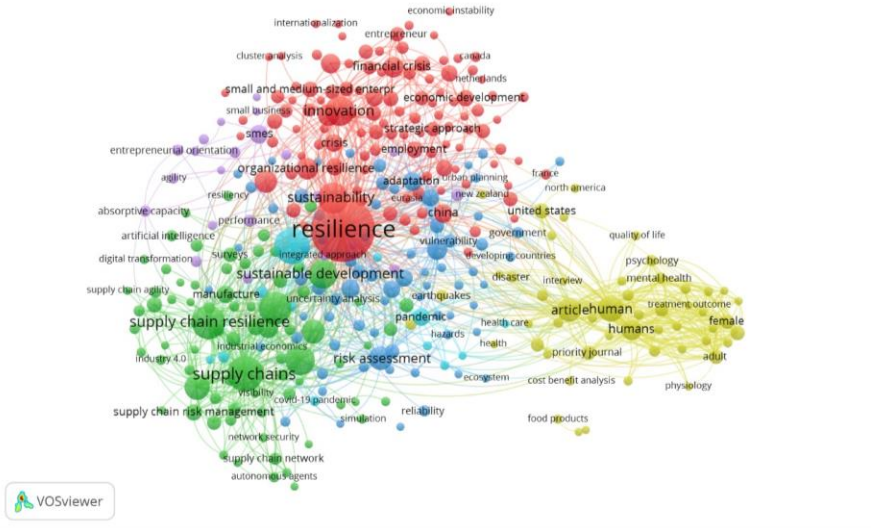

Figure 6. Connectedness Visualization in Corporate Resilience Article
Source: VOSviewer, 2022.

Trend Analysis Terms Author Keywords

At the trend terms author keywords analysis stage, it was found that 3,289 author keywords were used in selected articles and using a minimum of 10 events, 38 author keywords had a strong relationship. The term "*covid-19*" is the term most often used by authors with a total connectedness strength of 87 continuances, followed by the term "*supply*

chain resilience" with a total connectedness strength of 47 canals, and the term "*innovation*" of 44 canals . The term "*economic resilience*" is the least used term with 4 canals (Figure 7).

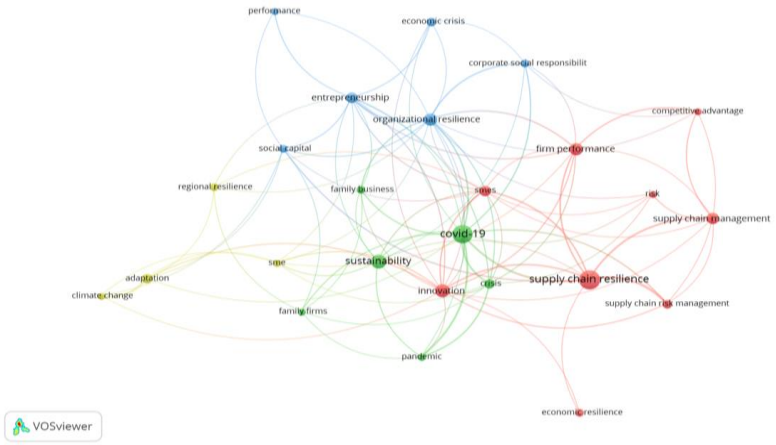

Figure 7. Author Keyword Network Visualization in Corporate Resilience Article
Source: VOSviewer, 2022.

State Statistical Analysis

Contributors to the results of research in articles on the topic of Firm Resilience on the Scopus application, it can be identified that the authors of the articles are spread across different countries. The most countries that issue corporate toughness articles are the United States with 303 articles, the United Kingdom with 207 articles, Italy with 104 articles, Australia with 75 articles, and Germany with 74 articles (Figure 8).

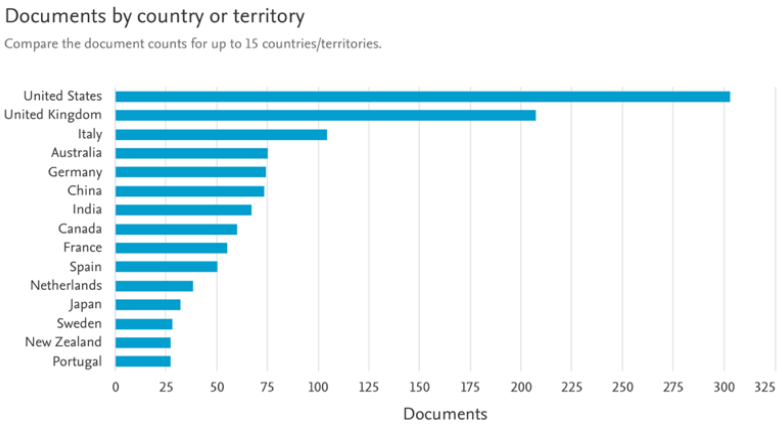

Figure 8. Article Distribution by Country
Source: www.scopus.com, 2022.

Document Affiliation

Figure 9 shows that research on corporate resilience comes from the following top five affiliates: The Ohio State University, Università Bocconi, Arizona State University, Hong Kong Polytechnic University, Alma Mater Studiorum Università in Bologna.

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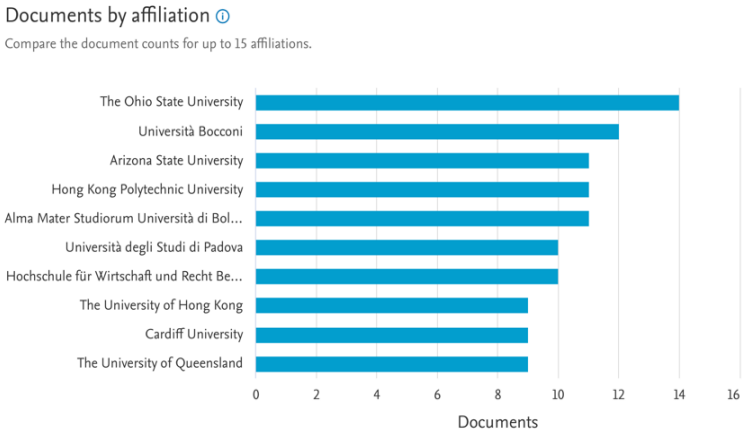

Figure 9. Article Distribution by Affiliation
Source: www.scopus.com, 2022.

The Role of VOSviewer in Finding Research Gaps

VOSviewer supports the process of finding *research gaps* from observed phenomena that have been published in previous scientific journals. In the results of the analysis of trend terms author keywords, it appears that research related to resilience involves research that is also related to clusters of the following concepts: *organizational resilience* (blue), *family business* (green), *competitive advantage* (red), *adaptation* (yellow). Therefore, the development of a firm resilience model in the midst of a crisis can be seen from the connectedness of the concepts of *organizational resilience* using *competitive advantage* and *adaptation* from *family business* subjects. Further exploration in developing the research model still needs to be done with the support of core journals related to the proposed concept.

4. Conclusion

Bibliometric analysis is a scientific method that can be useful for researchers who want to obtain a broad and rich field retrospective in a research topic. Based on the results and discussion, it can be concluded that publications about the firm resilience during the 1991-2021 period showed that the highest Scopus index occurred in 2021 which reached 305 publications. This is most likely because during the COVID-19 pandemic, there is more and more interest from researchers around the firm resilience in the face of disruption. The country that publishes the most corporate toughness articles is the United States (303 articles). Ivanov, D. is the researcher who has the largest productivity of 10 publications, besides that the articles from the researcher also have the strongest relationship with other researchers on the topic of firm resilience. The subject area that produces the most corporate resilience articles is the Business, Management & Accounting area (26.7%). In the title term trend analysis, 6 clusters were formed. The term in the title most used in firm resilience articles is "resilience" with a total of 290 events. While the keyword "covid-19" is the term most often used by authors and has a total connectedness strength of 87 continuations. The addition of new keywords is needed to get more research results so that it is more comprehensive. Proposed future research related to bibliometric analysis of firm resilience can be focused on collecting data from published literature on factors that influence firm resilience. At a later stage, proposed research may involve collecting primary data through questionnaires or interviews with stakeholders, such as company managers, financial analysts and academics. Questionnaires or interviews can be focused on the factors identified from the

bibliometric analysis, such as risk management, innovation, marketing strategy and human resources. Furthermore, research can use multivariate analysis techniques, such as multivariate, to analyze the relationship between these factors and firm resilience. The results of this study can help managers to understand what factors need to be considered to increase the resilience. In addition, this research can provide researchers and academics with insight into the latest research trends and future research directions in the field of firm resilience.

References

Ali, A., Mahfouz, A., & Arisha, A. (2017). Analysing supply chain resilience: integrating the constructs in a concept mapping framework via a systematic literature review. *Supply Chain Management*, *22*(1), 16–39. Retrieved from http://dx.doi.org/10.1108/SCM-06-2016-0197

Ali, I., Arslan, A., Khan, Z., & Tarba, S. Y. (2021). The Role of Industry 4.0 Technologies in Mitigating Supply Chain Disruption: Empirical Evidence From the Australian Food Processing Industry. *IEEE Transactions on Engineering Management*, *PP*, 1–11. https://doi.org/10.1109/TEM.2021.3088518

Ali, I., & Gurd, B. (2020). Managing operational risks through knowledge sharing in food supply chains. *Knowledge and Process Management*, *27*(4), 322–331. https://doi.org/10.1002/kpm.1645

Bhamra, R., Dani, S., & Burnard, K. (2011). Resilience: The concept, a literature review and future directions. *International Journal of Production Research*, *49*(18), 5375–5393. https://doi.org/10.1080/00207543.2011.563826

Chadegani, A. A., Salehi, H., Md Yunus, M. M., Farhadi, H., Fooladi, M., Farhadi, M., & Ale Ebrahim, N. (2013). A comparison between two main academic literature collections: Web of science and scopus databases. *Asian Social Science*, *9*(5), 18–26. https://doi.org/10.5539/ass.v9n5p18

Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, *133*(May), 285–296. https://doi.org/10.1016/j.jbusres.2021.04.070

Eck, N. J. Van, & Waltman, L. (2014). Measuring Scholarly Impact. In *Measuring Scholarly Impact*. https://doi.org/10.1007/978-3-319-10377-8

Glenisson, P., Glänzel, W., Janssens, F., & De Moor, B. (2005). Combining full text and bibliometric information in mapping scientific disciplines. *Information Processing and Management*, *41*(6), 1548–1572. https://doi.org/10.1016/j.ipm.2005.03.021

Horne, J. F., & Orr, J. E. (1998). ASSESSING BEHAVIORS THAT CREATE RESILIENT ORGANIZATIONS. *Employment Relations Today*, *24*(4), 29–39. Retrieved from https://onlinelibrary.wiley.com/doi/epdf/10.1002/ert.3910240405

Ivanov, D., & Dolgui, A. (2020a). A digital supply chain twin for managing the disruption risks and resilience in the era of Industry 4.0. *Production Planning and Control*, *32*(9), 775–788. https://doi.org/10.1080/09537287.2020.1768450

Ivanov, D., & Dolgui, A. (2020b). Viability of intertwined supply networks: extending the supply chain resilience angles towards survivability. A position paper motivated by COVID-19 outbreak. *International Journal of Production Research*. Retrieved from https://www.tandfonline.com/doi/abs/10.1080/00207543.2020.1750727

Ivanov, D., & Dolgui, A. (2021). Stress testing supply chains and creating viable ecosystems. *Operations Management Research*. https://doi.org/10.1007/s12063-021-00194-z

Jan van Eck, N., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, *84*(2), 523–538. https://doi.org/10.1007/s11192-009-0146-3

Johnson, A. R., & Nagarur, N. (2012). A discussion on supply chain robustness and resiliency. *IIE Annual Conference. Proceedings*. Retrieved from http://search.proquest.com/openview/fc2a3e5c3c4659aa22e209c09d68078c/1?pq-origsite=gscholar&cbl=51908

Joyce, S., Shand, F., Tighe, J., Laurent, S. J., Bryant, R. A., & Harvey, S. B. (2018). Road to resilience: A systematic review and meta-analysis of resilience training programmes and interventions. *BMJ Open*, *8*(6), 1–9. https://doi.org/10.1136/bmjopen-2017-017858

Julia, J., Supriatna, E., Isrokatun, I., Aisyah, I., Hakim, A., & Odebode, A. A. (2020). Moral education (2010-2019): A bibliometric study (Part 2). *Universal Journal of Educational Research*, *8*(7), 2954–2968. https://doi.org/10.13189/ujer.2020.080724

Lazzaroni, S., & van Bergeijk, P. A. G. (2014). Natural disasters' impact, factors of resilience and development: A meta-analysis of the macroeconomic literature. *Ecological Economics*, *107*, 333–346. https://doi.org/10.1016/j.ecolecon.2014.08.015

Linnenluecke, M. K. (2015). Resilience in Business and Management Research: A Review of Influential Publications and a Research Agenda. *International Journal of Management Reviews*, *00*(1), 1–27. https://doi.org/10.1111/ijmr.12076

Linnenluecke, M. K., Griffiths, A., & Winn, M. (2012). Extreme weather events and the critical importance of anticipatory adaptation and organizational resilience in responding to impacts. *Business Strategy and the Environment*, *21*(1), 17–32. https://doi.org/10.1002/bse.708

Meriton, R., & Graham, G. (2017). International supply chain resilience: A big data perspective. *Proceedings of the 21st Cambridge …*. Retrieved from http://eprints.whiterose.ac.uk/121463/

Mongeon, P., & Paul-Hus, A. (2016). The journal coverage of Web of Science and Scopus: a comparative analysis. *Scientometrics*, *106*(1), 213–228. https://doi.org/10.1007/s11192-015-1765-5

Oshio, A., Taku, K., Hirano, M., & Saeed, G. (2018). Resilience and Big Five personality traits: A meta-analysis. *Personality and Individual Differences*, *127*(17), 54–60. https://doi.org/10.1016/j.paid.2018.01.048

Paul, S. K., & Chowdhury, P. (2021). A production recovery plan in manufacturing supply chains for a high-demand item during COVID-19. *International Journal of Physical Distribution and Logistics Management*, *51*(2), 104–125. https://doi.org/10.1108/IJPDLM-04-2020-0127

Russell, J. M., & Rousseau, R. (2015). BIBLIOMETRICS AND INSTITUTIONAL EVALUATION. *SCIENCE AND TECHNOLOGY POLICY*, *II*.

Saleem, M. S., Isha, A. S. N., Yusop, Y. M., Awan, M. I., & Naji, G. M. A. (2023). *Mindfulness Research: A Bibliometric Analysis BT - Innovation of Businesses, and Digitalization during Covid-19 Pandemic* (B. Alareeni & A. Hamdan, Eds.). Cham: Springer International Publishing.

Salvato, C., Sargiacomo, M., Amore, M. D., & Minichilli, A. (2020). Natural disasters as a source of entrepreneurial opportunity: Family business resilience after an earthquake. *Strategic …*. Retrieved from

https://onlinelibrary.wiley.com/doi/abs/10.1002/sej.1368

Shah, S. H. H., Lei, S., Ali, M., Doronin, D., & Hussain, S. T. (2020). Prosumption: bibliometric analysis using HistCite and VOSviewer. *Kybernetes*, *49*(3), 1020–1045. https://doi.org/10.1108/K-12-2018-0696

Valérie, D., & Pierre, A. G. (2010). Bibliometric idicators: Quality masurements of sientific publication. *Radiology*, *255*(2), 342–351. https://doi.org/10.1148/radiol.09090626

Waltman, L., van Eck, N. J., & Noyons, E. C. M. (2010). A unified approach to mapping and clustering of bibliometric networks. *Journal of Informetrics*, *4*(4), 629–635. https://doi.org/10.1016/j.joi.2010.07.002

Wong, C. W. Y., Lirn, T. C., Yang, C. C., & Shang, K. C. (2020). Supply chain and external conditions under which supply chain resilience pays: An organizational information processing theorization. *International Journal of Production Economics*, *226*(December 2019), 107610. https://doi.org/10.1016/j.ijpe.2019.107610

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