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ACADEMIC RESEARCH RESPONSES TO COVID-19: THE CORPORATE SOCIAL RESPONSIBILITY PERSPECTIVE

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Abstract:

This study investigates the strategic responses to the Covid-19 pandemic by academic research from the distinctive lens of corporate social responsibility (CSR). Specifically, it examines the evolution and trend of published academic research covering the CSR–Covid-19 nexus by highlighting key characteristics of published theoretical and empirical research linking the two elements. A total of 99 papers on CSR–Covid-19 nexus derived from Scopus database were analysed using bibliometrics, social network techniques and content analysis to examine the research activities since the start of the pandemic up to November 2021. The results indicate that the pandemic had effectively stimulated rapid growth of research interests examining the intertwined nature of CSR and Covid-19 as reflected in the swift proliferation of studies theoretically explaining and empirically testing the roles and impacts of CSR on various Covid-19 outcomes within myriads of domains, including but not limited to health, business practices, economics, and socials. The practical implications of this article lies on its ability to accentuate key research characteristics that early and/or mature researchers should consider when planning their future research trajectory on the link between CSR and Covid-19.

Key words: *Corporate Social Responsibility, Bibliometric Analysis, Scopus, Citation Network, Content Analysis.*

1. Introduction

Prior studies on Corporate Social Responsibility (CSR) primarily delved into issues of how a company's behaviour is shaped to meet the requirements of its workers and the people with whom they engage, such as customers, suppliers, business partners, and society at large. Such behaviours and practices are often characterised as processes through which a company strikes a balance between multiple imperatives of economic, environmental, and social while simultaneously satisfying both the shareholders' and stakeholders' expectations. It is in this regard that CSR is considered a strategic business management idea, thereby distinguishing itself from charity, sponsorship, or philanthropy.

Prior academic research on CSR has indeed proliferated extensively since its emergence more than two decades ago and further impetus for the growing interest in studying the subject is arguably due to the worldwide emergence and rapid spread of Covid-19 pandemic that has claimed the lives of millions people. The catastrophic impacts of Covid-19 could immediately be seen on the health system, social well-being and more apparently on businesses. As the pandemic necessitates the development of new protocols for almost the entire human activities, economic hardships have become evident across the globe. Recent academic and policy studies have argued that the pandemic has disparate impacts, generally hurting lower-income individuals more, potentially increasing economic inequality. In response, firms have noticeably engaged in a wide range of philanthropic CSR actions which are likely motivated by utilitarianism and deontological factors, indirectly questioning several established CSR assumptions, ideas, and practices (Timothy *et al.*, 2020).

Focusing on the acute context of CSR–Covid-19 nexus, present study attempts to investigate the strategic responses to Covid-19 pandemic by academic research from the specific perspective of CSR. Distinctively, it explores the evolution and trend of published academic research covering the CSR–Covid-19 connection by underscoring important attributes of published materials on the theoretical and empirical research linking the two elements. Utilizing a total of 99 papers linking CSR to Covid-19 derived from Scopus database, this paper analyses the extent of such research activities by using multiple analysis techniques of bibliometrics, social network and content analysis, the purpose of which is to highlight the publishing trends and intellectual framework in the area. In doing so, the core subjects and current dynamics of CSR are highlighted, and future research opportunities are also offered.

The analyses results suggest that the pandemic–driven–growth of research interests investigating the intermingled nature of CSR and Covid-19 is reflected in the rapid proliferation of theoretical and empirical studies attempting to explain and test the relationship between the two elements within multitudes research domains of among others, health, business practices, economics, and socials. This paper practically complements recent review papers (e.g., Antwi *et al.,* 2021 and Carlini *et al.,* 2021) on relevant published materials within a single research area which used systematic literature review approach alone. In contrast with these similar review studies, present paper primarily signifies the first bibliometric analysis on CSR-Covid-19 nexus which evaluation of the literature significantly differs as this study involves multitudes research domains and it utilizes manifold analysis techniques of systematic literature review, bibliometric, social network and content analysis. The results provide implications for future empirical research in the area as it accentuates key research characteristics that early and/or mature researchers should consider when planning their future research trajectory on the link between CSR and Covid-19.

The paper proceeds as follows. The following section briefly introduces CSR and its development in relation to Covid-19 pandemic, then a section explaining the strategy used to identify the data on past publications related to CSR and Covid-19, including the data analysis methods. The results section, which presents the functional analysis, is shown next.

The short discussion on this research topic is further extended using a content analysis technique. The final section discusses the implications of findings and concludes.

2. Literature Review

2.1. Corporate Social Responsibility: An Overview

The CSR primarily balances the organisation's demands with that of society's. Businesses in general have a variety of societal duties such as a duty not to harm society, give opportunities for individuals in their job, and help resolve social issues. Conceptually, CSR represents a philosophy that emphasises the integration of social and environmental issues into a corporation's normal operations in order to maximise both short and long-term profitability. Moreover, corporations must also be socially accountable for sustainable development today more than ever. It is in the specific context of Covid-19 that CSR and sustainability could play a prominent role in alleviating various economic challenges including that of labour environmental challenges (Kholaif *et al.,* 2021).

2.2 *The CSR and the COVID-19*

During the beginning and recovery phases of Covid-19, companies' actions in balancing individual health and corporate risks have significant ethical concerns. The worldwide epidemic is putting CSR to the test, and data suggests that many firms are attempting to rethink their CSR thinking and efforts to cope with the crisis and satisfy public expectations (Carroll, 2021). What choices are companies making during a pandemic? What ethical principles are the most compatible with these choices? These are among the ethical questions concerning CSR, and businesses must think beyond the box to succeed. The response depends on their resources and ingenuity and its resilient, dynamic, and proactive in the face of the pandemic, modifying traditional business models or establishing new ones (Alexandru *et al.*, 2020; Bratianu & Bejinaru, 2020; Fasan *et al.*, 2021; Vătămănescu *et al.*, 2021).

Faced with the unique conditions created by Covid-19 pandemic, corporations are all forced to discover appropriate adaptive and future-oriented solutions to combat the virus's systemic multilayered problem (Alvarez *et al.*, 2020; Hasanat *et al.*, 2020; Reeves *et al.*, 2020; Cegarra-Navarro *et al.*, 2021). The epidemic noticeably provides many economic effects, with lower-income people suffering the most, presumably increasing inequality (Timothy *et al.*, 2020). In the business spheres, family businesses are also visibly more likely to employ strategies in their organisations that encourage ethical conduct and CSR initiatives (Rivo-López *et al.*, 2021). Besides, the pandemic has also opened up new avenues for CSR development. Through their CSR initiatives, general and family businesses participate in local cooperation in various sectors and Covid-19 has made these contributions to community improvement more apparent, suggesting a paradigm shift. For example, He and Harris (2020) outline how they believe marketing is affected by this pandemic and how organisations approach their strategic marketing efforts.

The Covid-19 had also significantly impacted CSR basics by putting political and social obstacles at the forefront of the discussion, well beyond economic concerns (Pesqueux, 2020). Companies with active CSR activities pre Covid-19 period are noted to to play a significant supporting role for government and society during the pandemic (Eltoum *et al.*, 2021). In terms of CSR reporting, firms in many countries have been compelled to produce CSR reporting with some countries had enacted relevant rules such as India's Act which contains measures to improve governance and financial audits and a one-of-a-kind requirement mandating companies to spend a minimum of 2% of reported revenue on CSR activities if they meet specific size or profitability criteria (Hickman *et al.,* 2021). The new updates from Covid-19 now mandate all foreign publicly traded corporations to make their CSR policies public on their websites (see, e.g., Mason *et al*., 2021; Schröder, 2021; Garde Sanchez *et al.*, 2021). The new change means that companies will have to publish their policy and meet the criteria regarding core business objectives, social impact, transparency, and following best practice principles. Indirectly, Covid-19 has now required companies to be fully transparent and accountable for their social impact. Countries that have adopted this law now need to publicly disclose their policies and all information relating to how they comply with these policies and what they are committed to achieving in the future.

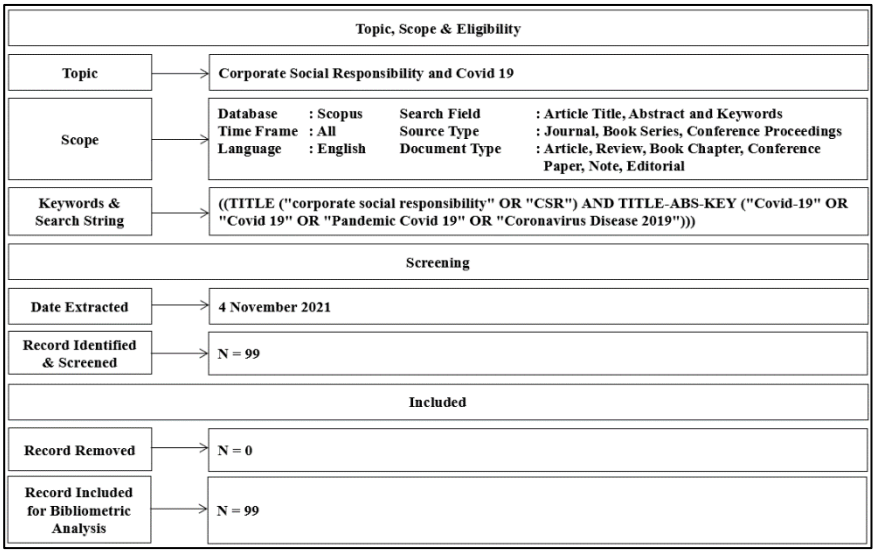
3. Methods

3.1 Bibliometric Analysis

A bibliometric analysis provides a scientific approach, using suitable statistical tools to analyze published reading materials, including books, journals, and other publications. Frequently used in library and information science, its specialized analytical tool "Citation Analysis" is a component of the bibliometric method based on citation graph building, which effectively refers to a network or graph representation of document citations (Linnenluecke *et al.,* 2020; Schaer, 2013). This phase permits impact assessment exercises on various aspects, including the study area chosen, the researchers themselves, the published material, and the exercise of determining the most significant publications within a specific field of research (Donthu *et al.*, 2021; Ellegaard & Wallin, 2015). This research uses bibliometric analysis to characterize and visualize CSR studies' intellectual structure and advancement over the pandemic period.

The data search was conducted and retrieved from the Scopus database on 4th November 2021. The data search was based on the article title for ‘corporate social responsibility’ (CSR) and the article title-abstract-keyword for ‘Covid 19’. The article title-abstract-keyword for ‘Covid 19’ was chosen because some articles did not mention Covid-19 in the article’s title, but the studies were actually conducted on Covid-19. Hence, the ‘Covid 19’ data based on the articles’ title-abstract-keyword was extracted to obtain all relevant data for the research topic. The data search processes are exhibited in Figure 1.

Figure 1: Flow Diagram of the Search Strategy



From the data query, 99 documents were obtained from the Scopus database. The authors' names, article title, abstract, keywords, year, and cited references, among other publishing metadata, were retrieved in plain text format from these entries. These data are used to conduct descriptive analysis, bibliometric analysis, network analysis, and content analysis. Descriptive analysis is performed to compute the data frequencies, i.e., the yearly trend, the most active journals, leading countries in publications, and the leading author in the research topic. All these frequencies are computed based on the total publications. Utilising Harzing's Publish or Perish software, the citation analysis was conducted to obtain the citation metrics data. The most cited articles on the research topic were also retrieved. In addition, the bibliometric analysis and network analysis are conducted using the VOSViewer software. The software assists in computing the degree of centrality, weighted degree of centrality, page rank, betweenness centrality, and eigenvector analysis. The VOSViewer software was utilized to perform the citation analysis, co-authorship analysis, co-citation analysis, literature classification, keyword analysis, and term co-occurrence analysis. Content analysis is also performed based on cluster analysis and gap analysis.

4. Results

4.1 Documents Profiles

The profiles of ninety-nine (99) research documents related to CSR and Covid-19 were sourced from Scopus database. Table I with three separate panels exhibits the types of documents (panel 1) document sources (panel 2) as well as subject area (panel 3). Panel 1 indicates that most of the documents retrieved are articles (84: 84.85%), five (5.05%) documents are review, four (4.04%) documents are book chapters, and three (3.03) documents are conference papers. Another three (3.03%) documents are note and editorial.

These documents are sourced (panel 2) from journals (92: 92.93%), book series (4: 4.04%), and conference proceedings (3: 3.03%). In terms of subject area, panel 3 shows that the top three area on the publications of CSR–Covid-19 nexus are in "Business, Management, and Accounting" area (53: 53.54%), followed by "Social Sciences" area (37: 37.37%), and the "Engineering and Sciences" area (30: 30.03%).

Table 1: Document Profile

Panel 1: Document Type

Types	Total	% (N=99)
Article	84	84.85%
Review	5	5.05%
Book Chapter	4	4.04%
Conference Paper	3	3.03%
Note	2	2.02%
Editorial	1	1.01%

Panel 2: Source Type

Types	Total	% (N=99)
Journal	92	92.93%
Book Series	4	4.04%
Conference Proceeding	3	3.03%

Panel 3: Subject Area

Subject Area	Total	% (N=99)	Subject Area	Total	% (N=99)
Business, Management and Accounting	53	53.54%	Economics, Econometrics and Finance	18	18.18%
Social Sciences	37	37.37%	Health and Medical Sciences	12	12.12%
Engineering and Sciences[@]	30	30.03%	Arts and Humanities	7	7.07%
Environmental Science	20	20.20%			

[@]Engineering, Energy, Computer Science, Decision Sciences, Earth and Planetary Sciences

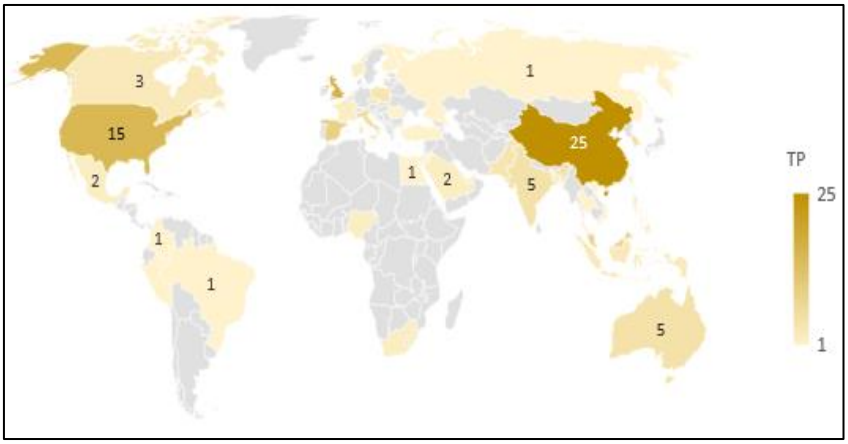
4.2 Publications activity by year and country

The research trend on CSR–Covid-19 nexus is shown in Table IV (panel 1). Out of the 99 articles obtained from Scopus, 19 (19.19%) articles were published in 2020 with 319 total citations. The publications increased to 80 in 2021. Using Harzing's Publish or Perish software, it is discovered that the first author who published a paper on CSR–Covid-19 nexus was Y. Pesqueux. The article published in 2020 entitled "Changes in the foundations of corporate social responsibility (CSR) after the 2015 Paris agreement and the 2019 coronavirus pandemic". The average citation per publication in 2020 stood at 17, and for 2021 the average citation is 2.

This study also observes the countries that are actively involved in the publications of studies linking CSR and Covid-19. A total of thirty-nine (39) countries contributed to CSR–Covid-19 nexus studies. The frequencies data were computed using Ms Excel, and the results are presented in Table II (panel 1) and visually shown in Figure 2. The list of top 10 countries contributed to the research area indicates that China had contributed the most publications (25: 25.25%) potentially driven by the fact that the first outbreak of Covid-19 disease was reported to have started in Wuhan, Hubei, China, in November 2019. Next, is

the United Kingdom with 17 (17.17%) publications, followed by the United States of America (15:15.15%).

Figure 2: **Distribution of Publications by Countries**



4.3 Publications activity by journal

All ninety-nine (99) articles obtained from Scopus database were published in 65 different journal titles. Table II (panel 2) shows the most active journals and their respective Cite Score, SCImago Journal Rank (SJR), and Source Normalized Impact per Paper (SNIP). The Cite Score shows the average citations received per document published in the serial, while SJR measures weighted citations received by the serial. The citation weighting depends on the subject field and prestige (SJR) of the citing serial. As for SNIP measures, actual citations were received relative to citations expected for the serial's subject field. Based on the frequencies data, the most active journal in the publications of CSR–Covid-19 nexus is *Sustainability Switzerland*. The title published 11 (11.11%) articles from 2020 to 2021, with a Cite Score value of 3.9, SJR value of 0.612, and SNIP value of 1.242. Next, is the *International Journal of Contemporary Hospitality Management* with 3 (3.03%) publications, followed by the *International Journal of Hospitality Management* with 3 (3.03%) publications for two years after the first outbreak of pandemic Covid–19 in November 2019.

4.4 Publication activity by author and organization

Based on the ninety-nine (99) articles sourced from Scopus database, it is found that 293 authors from 160 organizations were involved in the publications on issues related to CSR's link to Covid-19. Table III (panel 1) manifests the frequencies data of the top 10 most productive authors. The most productive author is García-Sánchez, I.M. from Universidad de Salamanca, Spain, who published 2 (2.02%) articles, followed by Han, H. from Sejong University, South Korea, and Macgregor, R.K., from Metropolitan University Prague, Czech Republic; both with 2 (2.02%) publications. The dataset also provides that there are 160 organizations involved in the publication activities and the results of top 10 most influential institutions are presented in Table III (panel 2). The most influential institution

is Metropolitan University Prague in the Czech Republic that marked 4 (4.04%) publications followed by the University of Surrey (3: 3.03%) in the United Kingdom and Universiti Utara Malaysia (2: 2.02%) in Malaysia.

4.5 Citation Network Analysis

The citation networks of all 99 publications were investigated in order to identify the most critical publications. According to Ding and Cronin (2011), citation analysis is among the most often used technique in determining the impact of a research publication. According to Baker *et al.* (2020), the citation analysis is conducted to measure the impacts of the documents related to the research topic based on the number of citations. This study utilised both the *Harzing's Publish or Perish* and the *VOSViewer* software to assist in mapping the network on the citation of the publications. The citation metrics data is presented in Table IV (panel 1). There are 515 citations (319 for 2020 and 196 for 2021) for all 99 articles with the average number of citations for each document stood at 5 citations.

4.6 Centrality analysis of citation networks

The most cited articles based on the dataset was also examined. Table IV (panel 2) shows the list of highly cited papers on CSR–Covid-19 nexus. The most cited paper entitled "The impact of Covid-19 pandemic on corporate social responsibility and marketing philosophy" was written by H. He and L. Harris. Published in 2020, the paper received 198 citations. The second highest cited article entitled "Understanding employee responses to COVID-19: A behavioural corporate social responsibility perspective", written by H. Aguinis, I. Villamor, and K.P Gabriel in 2020, which obtained 27 citations. Using the *VOSViewer* software, the network map was created to visualize the connection of cited documents among the authors. The minimum number of citations of a document is set as 1. Out of 99 documents, 49 met the threshold. However, only 21 documents are connected, generating 8 clusters based on the network map. Figure 3 (panel 1) exhibits the network map of citation by documents. The paper written by H. He and L. Harris in 2020 is marked with the largest circle based on the network map. It shows that H. He and L. Harris's paper is the most cited article and cited by other papers dealing with CSR's connection with covid-19.

Figure 3 (panel 2) shows the network visualisation map of the citation by country. The minimum number of documents of a country and the minimum number of citations of a country is set at 1. There are 39 countries involved in publications related to the research topic, but only 30 countries met the threshold. However, only 22 countries are connected and divided into 11 clusters. China is spotted with the largest circle on the network map. It shows that the articles published by China are the most cited in the range of publications in the dataset. There are 25 documents with seven links published by authors from China. Other countries in which the documents are frequently mentioned in the research topic are United Kingdom (17 documents, 21 links) and United States of America (15 documents, 16 links).

Table II: Publications Profile

Panel 1: Top 10 Countries Contributed to the Publications

Country	Total	% (N=99)	Country	Total	% (N=99)
China	25	25.25%	Italy	6	6.06%
United Kingdom	17	17.17%	Australia	5	5.05%
United States	15	15.15%	India	5	5.05%
Spain	9	9.09%	South Korea	5	5.05%
Malaysia	8	8.08%	Czech Republic	4	4.04%

Panel 2: Top 10 Most Active Source Titles

Source Title	Total	% (N=99)	Publisher	Cite Score	SJR 2020	SNIP 2020
Sustainability Switzerland	11	11.11%	Multidisciplinary Digital Publishing Institute	3.9	0.612	1.242
International Journal of Contemporary Hospitality Management	3	3.03%	Emerald	9.3	2.079	1.984
International Journal of Hospitality Management	3	3.03%	Elsevier	9.4	2.321	2.876
Journal Of Cleaner Production	3	3.03%	Elsevier	13.1	1.937	2.475
Palgrave Studies in Governance Leadership and Responsibility	3	3.03%	N/A	N/A	N/A	N/A
Accounting and Finance	2	2.02%	Wiley-Blackwell	3.3	0.645	1.517
China Finance Review International	2	2.02%	Emerald	2	0.549	0.878
Corporate Governance (Bingley)	2	2.02%	Emerald	4.1	0.634	1.26
Current Issues in Tourism	2	2.02%	Taylor & Francis	8.6	1.725	2.756
E3s Web of Conferences	2	2.02%	N/A	0.6	0.203	0.608

Panel 3: Top 10 Keywords

Keyword	Total Publication	%	Keyword	Total Publication	%
Corporate Social Responsibility	58	58.59%	Covid-19	8	8.08%
COVID-19	48	48.48%	Crisis	8	8.08%
CSR	16	16.16%	Pandemic	8	8.08%
Corporate Social Responsibility (CSR)	15	15.15%	Sustainability	8	8.08%

COVID-19 Pandemic	11	11.11%	Sustainable Development	8	8.08%

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Table III: Profiles of Authors and Institutions

Panel 1: Top 10 Most Productive Authors

Author Name	Total	% (N=99)	Affiliation	Country
García-Sánchez, I.M.	2	2.02%	Universidad de Salamanca	Spain
Han, H.	2	2.02%	Sejong University	South Korea
Macgregor, R.K.	2	2.02%	Metropolitan University Prague	Czech Republic
Morrison, A.M.	2	2.02%	University of Greenwich	Hong Kong
Pelikánová, R.M.	2	2.02%	Metropolitan University Prague	Czech Republic
Pelikánová, R.M.G.	2	2.02%	Metropolitan University Prague	Czech Republic
Sun, Y.	2	2.02%	Tianjin University of Commerce	China
Wong, I.K.A.	2	2.02%	Sun Yat-Sen University	China
Aguinis, H.	1	1.01%	G.W. School of Business	USA
Ahmed Dar, A.	1	1.01%	Shaanxi University of Science and Technology	China

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Panel 2: Top 10 Most Influential Institutions

Institution	Total	% (N=99)	Country
Metropolitan University Prague	4	4.04%	Czech Republic
University of Surrey	3	3.03%	United Kingdom
Universiti Utara Malaysia	2	2.02%	Malaysia
Zhejiang University	2	2.02%	China

Panel 3: Number of author(s) per document

Authors count	Total	% (N=99)
1	8	8.08%
2	34	34.34%
3	22	22.22%
4	23	23.23%

Guangdong University of Foreign Studies	2	2.02%	China	5	10	10.10%
Sun Yat-Sen University	2	2.02%	China	7	1	1.01%
University of Greenwich	2	2.02%	United Kingdom	8	1	1.01%
Universidad de Salamanca	2	2.02%	Spain			
Sejong University	2	2.02%	South Korea			
Tianjin University of Commerce	2	2.02%	China			

Table IV: Citation Metrics

Panel 1: Citation Metrics by Year

Year	Total Publications	%	Number of Cited Publications	Total Citations	Average Citation per Publication	Average citations per cited publication
2020	19	19.19%	19	319	16.79	16.79
2021	80	80.81%	80	196	2.45	2.45

Panel 2: Highly cited articles

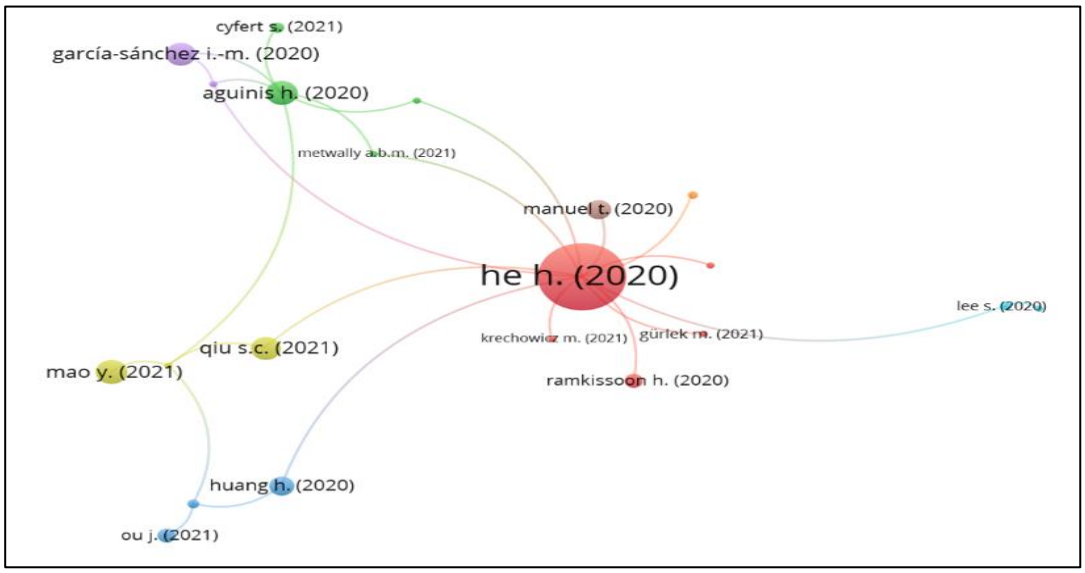
No.	Authors	Title	Year	Cites	Cites/ Year	Cites/ Author
1	H. He, L. Harris	The impact of Covid-19 pandemic on corporate social responsibility and marketing philosophy	2020	198	198	99
2	H. Aguinis, I. Villamor, K.P. Gabriel	Understanding employee responses to COVID-19: a behavioural corporate social responsibility perspective	2020	27	27	9

Panel 2: Highly cited articles

No.	Authors	Title	Year	Cites	Cites/ Year	Cites/ Author
3	Y. Mao, J. He, A.M. Morrison, J. Andres Coca-Stefaniak	Effects of tourism CSR on employee psychological capital in the COVID-19 crisis: from the perspective of conservation of resources theory	2021	25	25	6
4	K.-H. Bae, S. El Ghoul, Z.J. Gong, O. Guedhami	Does CSR matter in times of crisis? Evidence from the COVID-19 pandemic	2021	23	23	6
5	S.C. Qiu, J. Jiang, X. Liu, M.-H. Chen, X. Yuan	Can corporate social responsibility protect firm value during the COVID-19 pandemic?	2021	23	23	5
6	I.M. Garcia-Sanchez, A. Garcia-Sanchez	Corporate social responsibility during COVID-19 pandemic	2020	23	23	12
7	A. Crane, D. Matten	COVID-19 and the Future of CSR Research	2021	22	22	11
8	C. Huo, A. Ahmed Dar, A. Nawaz, J. Hameed, G. Albashar, B. Pan, C. Wang	Groundwater contamination with the threat of COVID-19: Insights into CSR theory of Carroll's pyramid	2021	18	18	3
9	E. Popkova, P. DeLo, B.S. Sergi	Corporate Social Responsibility Amid Social Distancing During the COVID-19 Crisis: BRICS vs OECD Countries	2021	18	18	6
10	T. Manuel, T.L. Herron	An ethical perspective of business CSR and the COVID-19 pandemic	2020	16	16	8
11	H. Huang, S.Q. Liu	Donate to help combat COVID-19: How typeface affects the effectiveness of CSR marketing?	2020	16	16	8

Figure 3: Network Visualisation Map of Citation

Panel 1: Network Visualisation Map of Citation by Documents



Panel 2: Network Visualisation Map of Citation by Countries

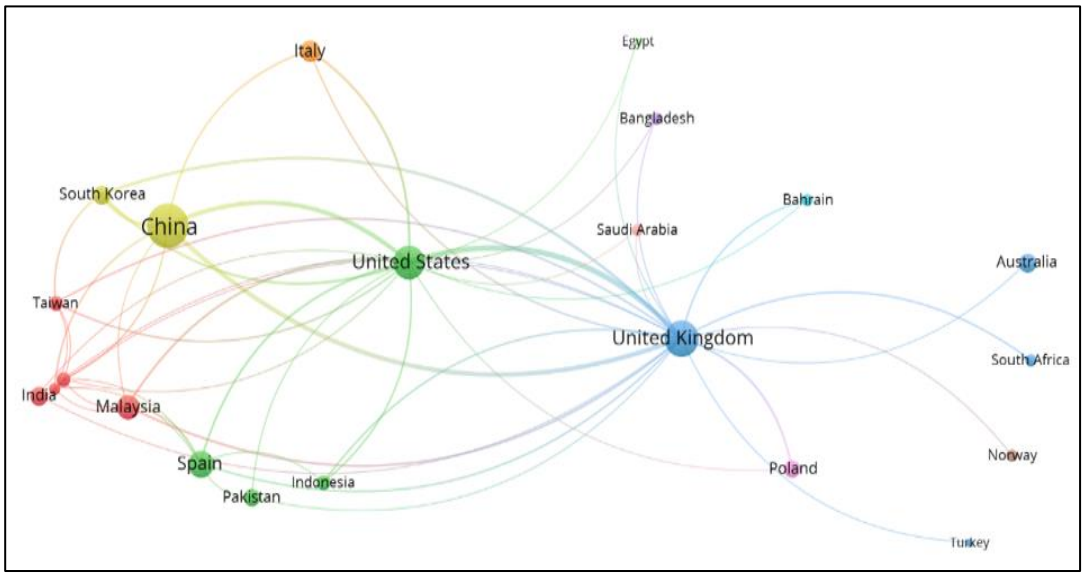
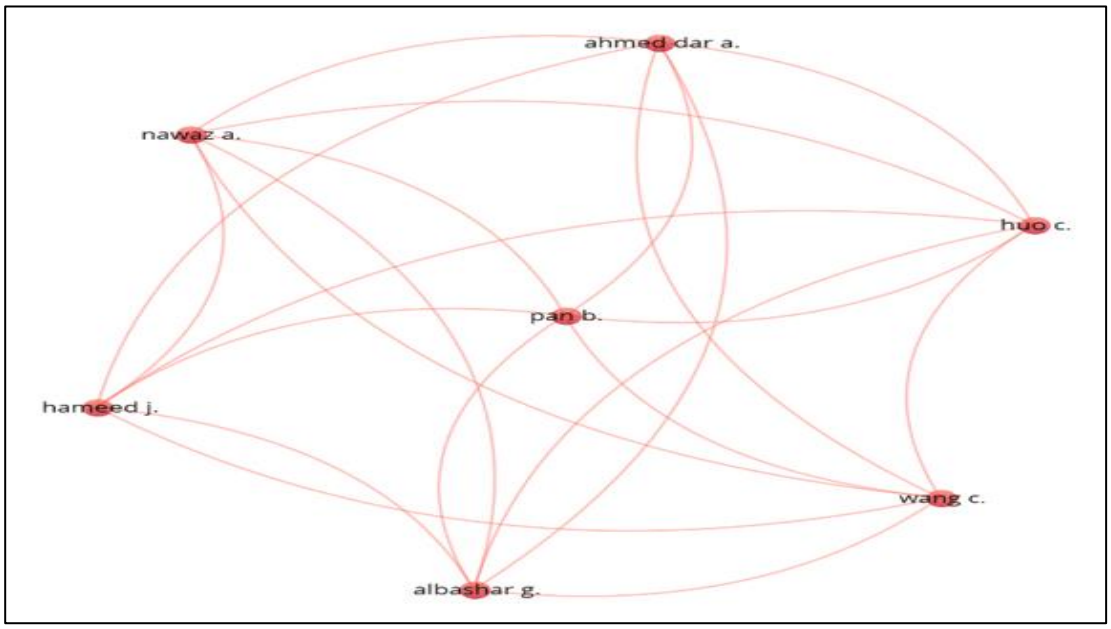


Figure 4: Network Visualisation Map of Co-Authorship

Panel 1: Network Visualisation Map of Co-Authorship by Documents



Panel 2: Network Visualisation Map of Co-Authorship by Countries

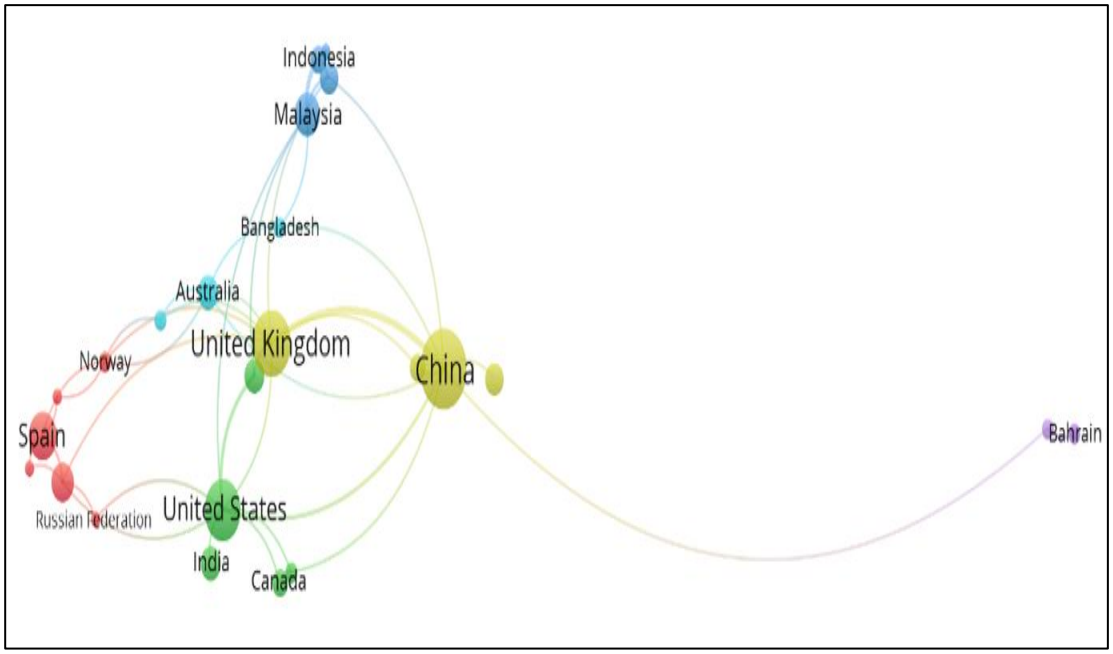
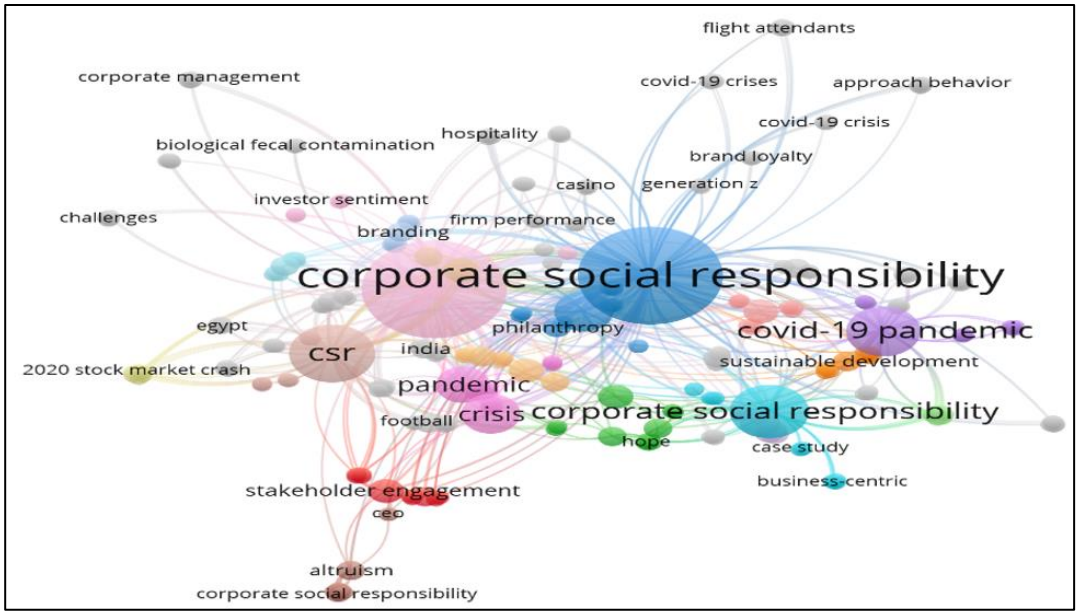
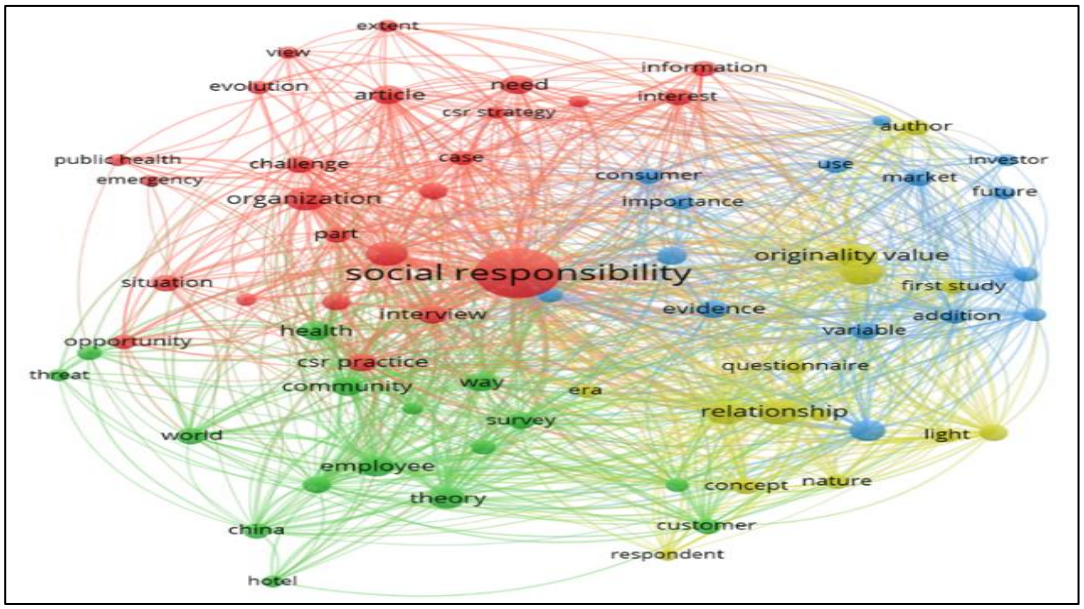


Figure 5: Network Visualisation Map of Co-occurance

Panel 1: Network Visualisation Map of Co-occurrence of Authors' Keywords



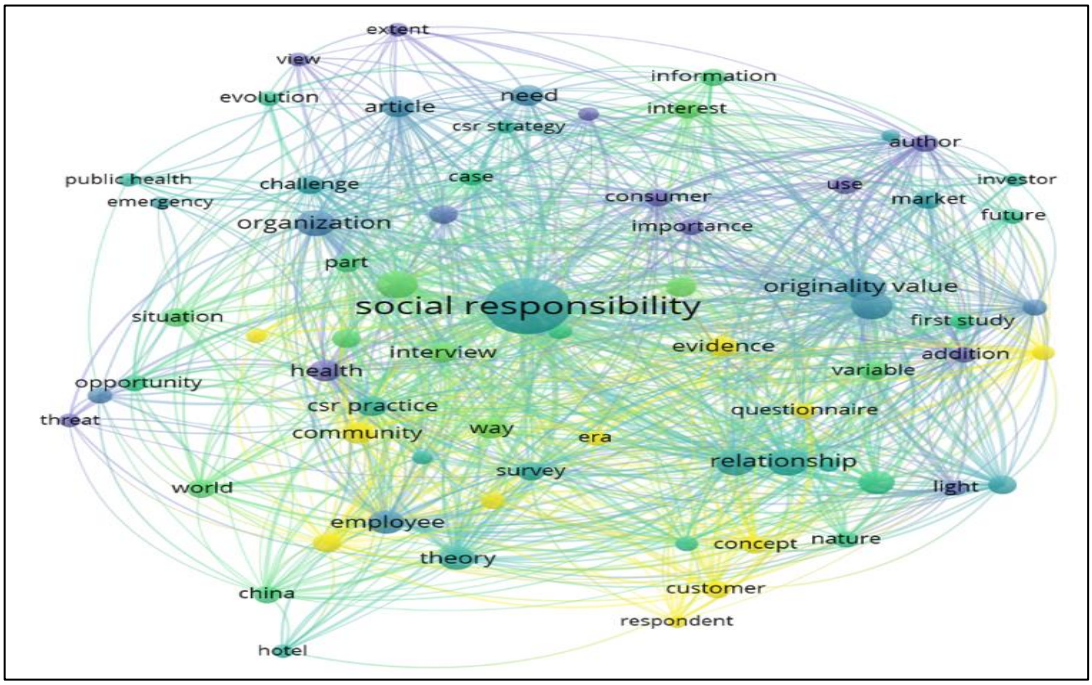
Panel 2: Network Visualisation Map of Co-occurrence of Title and Abstract Field



Panel 3: Density visualisation of term co-occurrence of title and abstract field



Panel 4: Overlay visualisation map of term occurrence of title and abstract field


extent
view
evolution
article
need
csr strategy
information
interest
author
public health
emergency
challenge
case
organization
consumer
use
market
investor
future
importance
part
social responsibility
originality value
first study
situation
interview
evidence
addition
health
variable
opportunity
threat
csr practice
questionnaire
community
way
era
relationship
survey
world
light
employee
concept
nature
theory
china
customer
respondent
hotel

4.7 Co-authorship Analysis

The current state of associations among the authors was also analysed in examining the progress of collaborations among authors in the area. Based on the data subset, there are 293 authors involved in the publication of 99 articles in the area. This study examined the number of authors associated with a document using Ms. Excel. Table 3 (panel 3) presents the number of authors related to an article. Based on the frequencies data, the minimum number of authors in a paper is one (1) author, and the maximum number of authors in a paper is eight (8) authors. There are 8 (8.08%) articles with one (1) author. Thirty-four (34.34%) articles have two (2) authors, and twenty (20.20%) articles have three authors. It is essential to indicate that the authors' data for two (2) research topic articles are unavailable in the Scopus database.

Figure 4 manifests the network map of co-authorship between authors with full counting option is chosen, and the minimum number of documents of an author and the minimum number of citations of an author are set at 1. From 280 authors, 153 authors met the threshold. However, only seven authors are connected with one (1) cluster on the network map. The cluster in co-authorship of authors (panel 1) shows the collaboration between the authors in respective areas in the research topic. The network visualisation map of co-authorship based on countries is also created and presented in panel 2. Full counting method was used and the minimum number of documents of a country and the minimum number of citations of a country is set at 1. Out of 39 countries involved in the publication activities, only 30 countries met the threshold. However, only 25 countries are connected. Panel 2 shows the authors' six (6) collaboration clusters from different countries. It indicates that authors from China, the United Kingdom, and the United States of America commonly collaborate with authors from other countries in publishing articles related to CSR–Covid-19 linkage.

4.8 Keywords and term co-occurrence analysis

According to Baker *et al.* (2020), co-occurring keywords occur when two keywords appear together in an article, showing a relationship between the two keywords. In identifying the popular keywords used among authors studying CSR–Covid-19 nexus, the data frequencies of keywords used in the research topic was computed. Table 2 (panel 3) exhibits the frequencies data of top 10 keywords used in the publications of the CSR–Covid-19 research area. As expected, corporate social responsibility and its abbreviation of CSR as well as COVID-19 are the most popular keywords which constitute the top 5 most frequently used by all papers in the dataset.

The keywords co-occurrence analysis was also done using the *VOSViewer* software to generate the network map whereby full counting with at least one keyword used in the publications was chosen. All 311 keywords met the threshold, but only 284 were connected. The network map was generated on those that show only the

corresponding keywords. Figure 5 (panel 1) presents the network map of co-occurrence of the authors' keywords. The largest circle marked the keyword of corporate social responsibility as the most used keyword by authors, followed by COVID-19 and CSR.

In examining the conceptual framework underpinning the CSR–Covid-19 publications, this study explored the term co-occurrences of the title and abstract field to observe the content of publications. Using the *VOSViewer* software, a binary counting was chosen and set at least five times the occurrence of a term in the title and abstract of publications. Out of 2,608 terms, 115 terms met the threshold. By default, the software considered 60% of the threshold significant; hence 69 terms were deemed relevant. Figure 5 (panel 2) shows the network map of term co-occurrence of the title and abstract of the 99 documents obtained from the Scopus database. The visual presents four (4) clusters in the network map. Based on the largest circle of each colour representing the cluster, it is noted that the red theme emphasises study on social responsibility while the green theme emphasises the study on CSR of the employee and the community. The blue theme emphasises performance, and the yellow theme emphasises the study of the relationship of CSR with pandemic Covid-19.

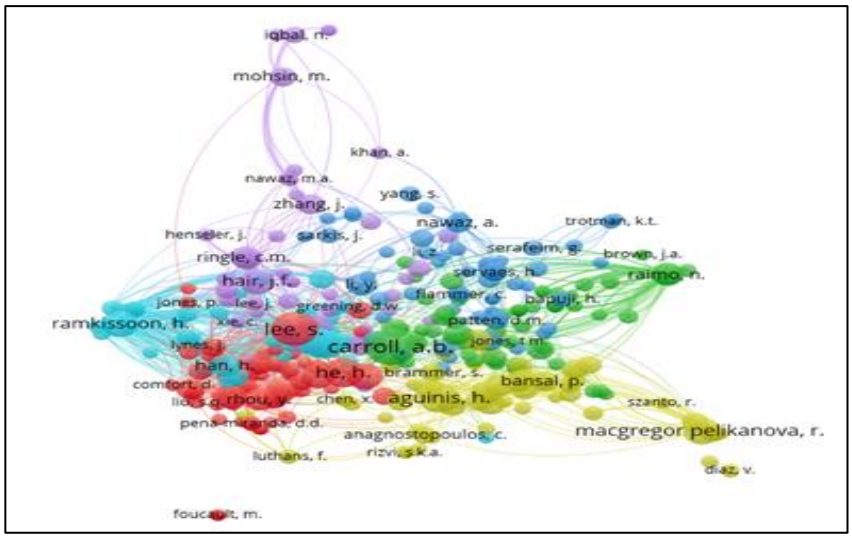
Panel 3 further shows the density visual of the term co-occurrence of title and abstract field in the CSR–Covid-19 publications. When the colour of the node becomes brighter and yellow, it shows the research's focus. From the density visual, the currently published studies focus on social responsibility, relationships, and the original value of the study. These indicate that many areas related to the research topic could be explored further in future research. The research path could also be traced by observing the overlay visual map of term occurrence of title and abstract among the 99 articles in the dataset (Figure 5 panel 4). The research path moves from the dark blue colour of the circles (previous studies) towards the yellow colour of the circles (recent studies). When the first outbreak of Covid 19 was detected in November 2019, researchers were concerned about health issues. Next, the studies move towards the organisation and social responsibility. The researchers extended their studies to market, sustainability, and CSR strategy where the relationship, practical implication, and theory were observed. Looking at the outbreak in China, many case studies were conducted to study the organisation's opportunity, performance, challenges, and initiative towards exercising corporate social responsibility. In 2021, the concerns were seen moving towards the impact of CSR on the community, whereby the research collected evidence through interviews and questionnaires.

4.9 Co-citation analysis

Co-citation is defined as the number of times two articles are cited together (Small, 1973). According to Rossetto *et al.* (2018), co-citation analysis in bibliometric study reveals a field’s intellectual structure. Liu *et al.* (2015) opines that it is also helpful to show the directions, structure, and developments in a particular research domain. In answering the question of what conceptual framework underpins the present CSR–

Covid-19 studies, this study focuses on understanding the intellectual structure of the research area using co-citation and content analysis. The co-citation network among the cited authors is observed by generating the network visualisation map of co-citation of cited authors using the *VOSViewer* software. Full counting is used with at least five citations of an author and the results are presented in Figure 6. From 9,062 authors, 328 authors met the threshold, and 6 clusters appeared on the network map. The authors in the same cluster cited each other in their publications. Each cluster represents a different area of discussion related to CSR.

Figure 6: Network visualisation map of co-citation of cited authors



5. Content Analysis

This study further delves into the issue surrounding the question of what kind of elements obstruct the research on the link between CSR and Covid-19 by conducting a content analysis based on the themes by co-occurrences of the title and abstract field. The content analysis was done based on the themes using the term co-occurrences of the title and abstract field and identified four clusters in the network map (Figure 5, panel 2). Ten (10) papers were chosen from each cluster for the content analysis.

5.1 Cluster 1 (Red): Social responsibility

Based on the largest circle of each colour representing the cluster, the red theme emphasises the study of “social responsibility”. The studies elaborate on many perspectives related to CSR before, during, and after the pandemic outbreak of Covid-

19, such as social, economic, and environmental dimensions. Following Covid-19, many companies shifted towards more authentic and genuine CSR activities. It encouraged them to contribute to addressing urgent environmental and global social challenges. Many studies, therefore, explore the evolution of CSR practices among companies to salvage and rescue their stakeholders, especially in the hospitality, tourism, and restaurants industries (see e.g., Shin *et al.*, 2021; Han *et al.*, 2021; Ou *et al.*, 2021). Some studies also provide better intuition on the relationship between CSR and Industry 4.0 (see e.g., Cyfert *et al.*, 2021). Besides, researchers conducted empirical studies to observe how well employees, managers, and consumers responded to CSR initiatives. Among the findings are that the organizational CSR is found to be positively related to employee social responsibility but negatively associated with customer social responsibility (Ramkissoon *et al.*, 2020). However, employee social responsibility is negatively associated with customer social responsibility and delight; customer social responsibility is associated with customer happiness and satisfaction (Ramkissoon *et al.*, 2020).

5.2 Cluster 2 (Green): CSR of the employee and the community

By referring to the largest circle of the theme in green, it primarily emphasises the study of CSR from the perspectives of employee and the community. After the pandemic outbreak, the whole world has been struggling with the multitudes impacts of Covid-19 on communities, customers, businesses, and employees. In response, they worked together with commitment and supported each other in any means possible with all the uncertainties and fear. As companies are expected to react in maintaining the stakeholders' trust, the pandemic manifests the ethical implications for businesses to balance individual health and firm risks during and after the pandemic outbreak. The activities conducted must protect the employees whilst benefiting the society. Hence, empirical studies in this area observe and examine differing effects of CSR on self-efficacy, hope, resilience, and optimism (Mao *et al.*, 2021). Some of the empirical results show that companies displayed their regards to their employees and concern about the trust between corporations, customers, and communities during the pandemic (see e.g., Mao *et al.*, 2021; Manuel & Herron, 2020).

One of the studies claims that the effect of CSR on the safety behavior of employees in critical situations remains a gap in the literature, especially in hospitality (Zhang *et al.*, 2021). The CSR practices in the hospitality industry are crucial in mitigating the negative impacts of the crisis, promoting employee safety behavior, and assisting recovery and future development (Zhang *et al.*, 2021). Gürlek & Kılıç (2021) found that 50% of hotels organized CSR activities for the community, 76% for their employees, and 87% for their customers. In addition, some studies highlighted the significant theoretical application and practical implication on business duty to communities and future research on CSR as a solid arm to deal with a critical disaster like the Covid-19 (Mahmud *et al.*, 2021).

5.3 Cluster 3 (Blue): CSR with market performance

The largest blue circle indicated CSR studies in the context of Covid-19 within the businesses market performance. Some studies examined the connection between CSR and the stock market returns during pandemic Covid-19-induced market crash and post-crash recovery. The pandemic was primarily perceived to cause a significant decline in the worldwide stock market. Among the various sectors, companies in the hospitality industry were facing severe financial problems. Hence, it is crucial to find ways to preserve and protect the firm value in helping hospitality companies to sustain. Noticeably however, different results were obtained from various studies conducted in this specific area. Some studies disclosed that engaging in CSR activities can increase stakeholder attention and the stock returns of hospitality companies during the pandemic. A study by Qiu *et al.* (2021) found that CSR activities related to the community compared to the customer and employee-related CSR have a more substantial and more prompt effect on stock returns. However, Bae *et al.* (2021) found no evidence that CSR had impacted the stock returns during the crash period. Nevertheless, based on additional cross-sectional analysis, some supporting evidence was found, albeit weak, that during the pandemic-related crisis, the relation between CSR and the stock returns is more positive when CSR is consistent with a firm's institutional environment (Bae *et al.,* 2021).

5.4 Cluster 4 (Yellow): Relationship of CSR with Pandemic Covid-19.

The largest circle in the yellow cluster shows studies on the relationship between CSR and Covid-19. Studies were conducted to critically incorporate and integrate conceptual and empirical research on CSR and its usefulness and necessity, especially during Covid-19. In this regards, various research objectives are observed, with some studies explore the associations of CSR, authentic leadership, and business model flexibility during unforeseen crises, especially during the pandemic. Other studies seek to examine to what extent companies can balance their business interest with social interest through various CSR activities such as health-related or behavioral perspectives and how CSR knowledge assists in explaining the potential impact of Covid-19. Other studies examine how CSR could help stabilizes the society facing the economic calamity due to the pandemic. Although many studies discuss how CSR could assist the employee, businesses, society, and community (see e.g., Aguinis *et al.*, 2020; Fox *et al.*, 2020), few studies claim that the pandemic had practically challenged some of the existing CSR concepts, practices, and assumptions (see e.g., Crane & Matten, 2021). Based on the findings, the impacts and implications of the pandemic on firm's CSR activities in different spheres or sectors worldwide were empirically explored and

uncovered. Indeed, the consumers, communities, and employees have been affected significantly, thereby putting the current CSR activities to the test. The evidence obtained from these studies has driven the companies to rethink and reset their CSR initiatives to meet society and communities' expectations, thus, systematically suggesting future research on CSR from the acute context of Covid-19.

6. Avenues for Future Research

Below are some preludes to futile research area on CSR–Covid-19 nexus for interested research scholars to consider.

1. *Stakeholders:* Future studies will be needed to establish whether pandemic-related CSR has distinct long-term implications for firms than in the pre-pandemic context. Existing models have explored restricted and acute business catastrophe charitable reactions. Given the intensity, pervasive scope, and length of the crisis, business reactions to Covid-19 virus are one-of-a-kind. During the epidemic, businesses are expected to serve society, safeguard workers, and sustain stakeholder confidence. Therefore, future research should focus more on sustaining and entrusting shareholders.
2. *CSR and societal risks:* Theoretical and empirical studies are warranted to explore and subsequently test the link between CSR and societal risks, showcasing how the former could help to reduce the societal risks arising from the pandemic.
3. *Responsibility in supply chains:* The study on the strategic role of CSR in the context of supply chains which aims at mitigating potential disruptions during the pandemic is theoretically and empirically promising as it helps to ensure and support the sustainability of businesses and the wellbeing of the society.
4. *The political, economy, and social impact of CSR post Covid-19:* Research on the impact of CSR and pandemics could be interesting future research. In many industrialized nations, the political consequences of the coronavirus might be just as significant as the economic consequences.
5. *The use of Artificial Intelligence (AI) in CSR related areas*: The AI technology might have a broad influence, with a new CSR vein concentrating on preventative tactics. Future research should focus more on the impact of AI usage and provide an in-depth analysis of international best practices and focus investment choices in the practical applications (see, e.g., Calandra & Favareto, 2020).

7. Conclusion

The coronavirus pandemic which claimed to have originated from an animal market in Wuhan province in China had indeed provided multitude implications on all spheres of life. In the specific context of academic research, the pandemic had effectively reinforced our understanding of the intermingling nature of CSR with that of

the pandemic during the crisis period. This is made possible with the highly triggered and renewed sense of interests to investigate the relevant questions of what roles and how CSR should ideally be operationalized in time of crisis, particularly that of Covid-19 pandemic. This study examined by way of bibliometric methodology, the strategic responses to Covid-19 pandemic by academic research from the specific CSR lens. Specifically, this paper examined the evolution and trend of published academic research covering the CSR–Covid-19 nexus by highlighting key characteristics of published theoretical and empirical research linking the two elements.

Utilizing a total of 99 published papers linking CSR with Covid-19 obtained from Scopus database, this study analysed the emerging literature repertoire using bibliometrics, social network techniques and content analysis with the aim of examining the research activities since the start of the pandemic in 2020 up to November 2021. Analysing the research trail based on the selected dataset, this paper focused on CSR–Covid-19 nexus issues related to the market, sustainability, and CSR strategy focusing on the link, practical implications, and theory. Essentially, the pandemic had effectively intensified the rapid growth of research interests exploring the intermingled nature of CSR and Covid-19 as reflected in the swift proliferation of studies theoretically explaining and empirically testing the roles and impacts of CSR on various Covid-19 outcomes covering various areas including but not limited to health, business practices, economics, and socials. Specifically, it was observed that several case studies were undertaken in response to the pandemic in China, the purposes of which are to examine the organisation's opportunities, performance, problems, and initiative in terms of CSR. Most of these studies gathered information via interviews and questionnaires in 2021, with the focus shifting to the effect of CSR on the community.

Despite the apparent importance of this research endeavour in highlighting the current frontier of CSR–Covid-19 research, one observable limitation is noted. The established literature repertoire used in the analysis is limited to those indexed in the Scopus database up to November 2021 only. The database is however has been generally acknowledged as the most extensive academic research collection. Thus, despite their potential importance, papers from other sources were technically omitted from the analysis. This particular constraint, nevertheless, provides exciting avenues for future research on the same subject. Similar research in the future should also consider using additional methodological tools, such as multiple combination analyses and databases, in addition to bibliometric analysis. As the world is gradually recovering from the pandemic, future studies should also consider examining the pandemic's systemic consequences, particularly on how disruptive and in what ways Covid-19 has altered people’s lives and emphasis on sustainability/CSR. Such research might reveal if stakeholders' interest in social and environmental sustainability problems has remained consistent or has shifted in response to the pandemic's various societal, political, environmental, healthcare, and economic challenges.

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