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Article

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Social Sustainability Studies in the 21st Century: A Bibliometric Mapping Analysis Using VOSviewer Software

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Abstract

The purpose of this study is to provide a bibliometric analysis of social sustainability literature in the business and management field, produced from 2001 to April 2021. The information was retrieved from the WoS database and the VOSviewer Software was used for data analyses. The analyses allowed us to identify the most influential authors, the most cited articles, the most highly cited journals, and the countries that have made the most relevant contribution to building this field of knowledge. Likewise, we conducted a references co-citation to identify the author and topics that constitute the foundations of this topic in the business area. Likewise, the co-occurrence network analysis for popular keywords was conducted, obtaining 4 clusters that indicate the main streams of the study of social sustainability research. Besides, a content analysis was conducted in the five resultant clusters of bibliographic coupling identifying the main themes studied in social sustainability in the business and management field. Finally, a co-citation analysis was conducted. This bibliometric mapping research concludes that social sustainability has acquired an increasing academic interest by scholars, according to the number of publications retrieved in WoS. Furthermore, result is corroborating by the co-word analysis, which shows that social sustainability in business and management has been mainly centred on corporate social responsibility and sustainable development. The detailed results of this bibliometric study and its practical implications are discussed.

Keywords: social sustainability, sustainable organizations, bibliometric studies, bibliometric mapping, big data.

1. Introduction

Sustainable development is a widely used and very prominent concept that originated from the Brundtland report in 1987 by United Nations Commissions on Environment and Development. The report stated that "humanity can make development sustainable – to

ensure that it meets the needs of the present without compromising the ability of future generations to meet their own needs" (Commission on Environment and Development, 1987). Later on, in 2015, the world further strengthened its long-term assurance of sustainable development with the 2030 agenda associated with the 17 interlinked global goals (General Assembly, 2015). Sustainable development has been increasingly significant in the world community (Kajikawa et al., 2014).

Sustainable development and sustainability have been creating buzz for the past few decades, which is advocated in some novel research undertakings (Abid et al., 2019, 2020; Hahn & Kühnen, 2013; Hernandez-Lara et al., 2021; Ilyas et al., 2020; Toussaint et al., 2021). Both the terms are often described as being split into the triple bottom aspects, i.e., environment, society, and economic (Di Fabio & Peiró, 2018). The three aspects are often presented as interconnected rings (Giddings et al., 2002). Environmental researchers are concerned with investigating the effect of human actions on the environment and exploring the ways to manage, minimize and/or eliminate the adverse impacts, like; as pollution, damage to attractive landscapes, and biodiversity. At the same time, the scientist belongs to the economic field studying the use, exchange, and ownership of scarce resources. Social sustainability is simply a measure of people's welfare. It is a process for sustainable and fruitful places that support well-being by considering what individuals need from where they work and live.

Sustainable development is focused on bringing the triple bottom ring in a balanced and organized way (Giddings et al., 2002). The split of anyone diverts the central theme and connection between environment, society, and economy. All three are impediments to moving towards sustainable development. The priority is given as most debates and research about sustainable development are on the economy and/or the environment. This fact influences the priorities of the sustainability approach that advertising uses to promote the sustainability of a brand and enhance its benefits. An example of this is that environmental aspects have a greater impact in promoting the sustainability of a brand than the other dimensions of sustainability (Sander, et al., 2021). Thus, it is argued that less devotion and consideration have been given to the social aspect of sustainability (Abid et al., 2020).

Although the research on social sustainability has advanced hastily since the good impact research papers published in the Information System Research in 2001, the dynamics of this field have yet to be thoroughly analyzed visually, qualitatively, and quantitatively. Therefore, it justifies the comprehensive review to accumulate the literature on social sustainability in the business field, specifically through science mapping named bibliometric analysis. These are very efficient review techniques considered to determine any underlying scholarly field's trajectory and broad state (Costa et al., 2017). To advance further the comprehensiveness and objectiveness of the review, we identify and classify the mainstreams of research in orientations in social sustainability in the business and management field through a widely accepted method of bibliometric analysis i.e., content analysis on high-quality impact papers. Therefore, the objective of this method is to disclose the trajectory and the dynamics of the research on social sustainability in the business field using quantitative bibliometric mapping review and content analysis. Hence, the present bibliometric mapping research aims to answer the following question:

- What are the significant trends and broad states on social sustainability in the business and management field?

The outcomes of our study support both academia and industry by proposing a bibliometric review of the research stream on social sustainability in the business and management field. Specifically, the present review discloses the business domain's trajectory and dynamics, offering a comprehensive overview of the research community. Also, our study recognized performance, management, responsibility, social sustainability, innovation, supply chain management, capabilities, competitive advantages, and challenges for firms as major conceptual orientations by clustering high-impact articles. Furthermore, the scrutiny of each further offers a profound understanding of the associated research domains that will help in promoting academic investigation and sustainable practices. In sum, the results of this study would be useful for scholars, managers, and practitioners interested in social sustainability issues. For scholars, this research approach will allow them to identify the most studied and influential topics in this area of knowledge and the gaps that have to be addressed in further studies. For managers and practitioners, this review will help them recognize the main areas that have to be considered in the companies to become more sustainable while letting them understand the evolution of this concept and the future development trends in a crucial topic for the organizations.

The rest of this study is structured as follows: the second section addresses the methodology developed, from the search inquiry to the WoS database; the third section presents the results, which start with a comprehensive analysis of social sustainability literature from 2001 to 2021 through WoS and then focused on the business and management, the analysis of the maps of the bibliographic data using the VOSviewer software. The fourth section presents the main discussions and conclusions.

2. Methods

To achieve the objective of this study, we conduct a bibliometric analysis using metadata extracted from Web of Science's primary collection (quantitative approach) and a content analysis of the resultant clusters (qualitative approach). VOSviewer versión 1.6 was used to conduct the analysis. This is widely accepted software for performing bibliometric research (Costa et al., 2017). This software is frequently used by the researchers for visualizing and constructing bibliometric networks. These networks comprise of researchers, journals, publications and they can be easily constructed based on co-citation, citation, co-authorship relation, and bibliographic coupling. It is also useful for text mining which might be used to visualize and construct co-occurrence networks for the topic and/or theme extracted from the high impact literature. The research process involved five consecutive stages (Figure 1).

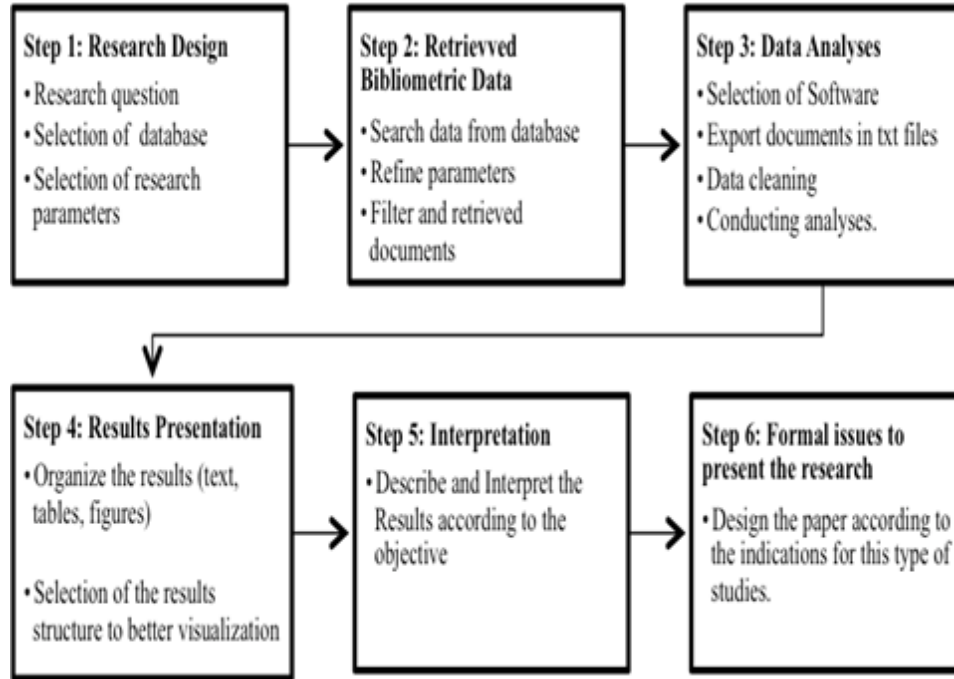


Figure 1: Research Process

2.1 Composing of Bibliometric Data

Bibliometric data search was done in April 2021 in two steps. First, we wanted to overview the advances of the literature on social sustainability in the present century, and second, we wanted to analyze the contribution of the business and management field in such a subject. The Web of Science (WoS) database Core Collection was used. The first search query was: TITLE: (social sustainab*) Timespan from 2001 to 2021. Indexes SCI-EXPANDED, SSCI, A&HCI, BKCI-S, BKCI-SSH, ESCI. This search returned 3,497 records from them; 81% are articles. As can be seen, the interest in social sustainability has grown in a relevant way in academics from different fields of knowledge (Figure 2). We do not include 2021 in the graph because it is not comparable to complete years with three months of the current year.

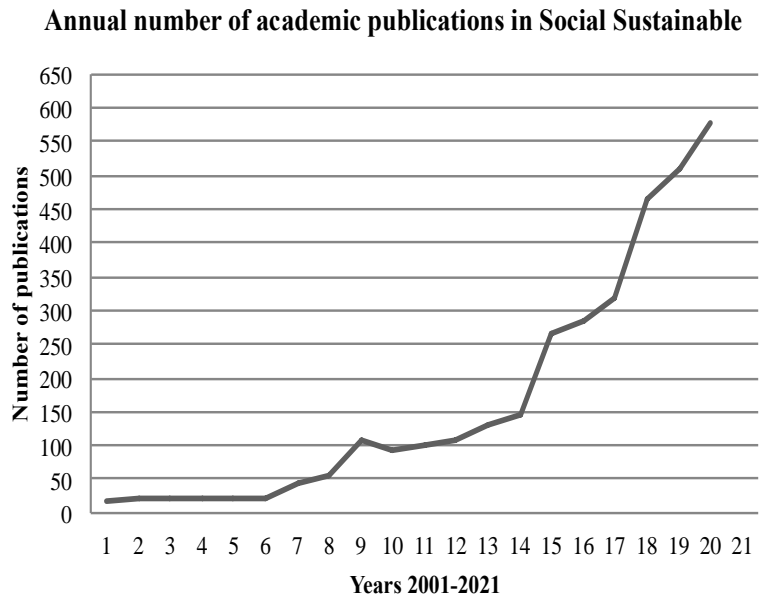


Figure 2: Academic Documents Published in Social Sustainability

Then, we want to search the main areas of knowledge that have made a more relevant contribution to social sustainability. Business and management joined to achieve the 24%. In figure 3, the five most relevant areas and their contribution are presented.

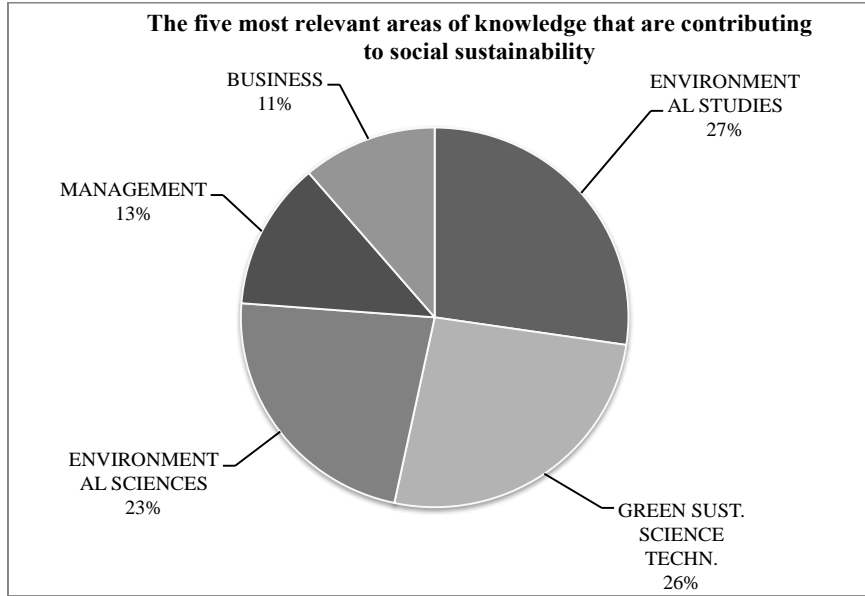


Figure 3: According to WoS Categories, the Five Main Areas of Knowledge are Making a Relevant Contribution to Social Sustainability

Regarding the countries, United States, England, and Spain are the countries that have produced more literature about social sustainability (Figure 4).

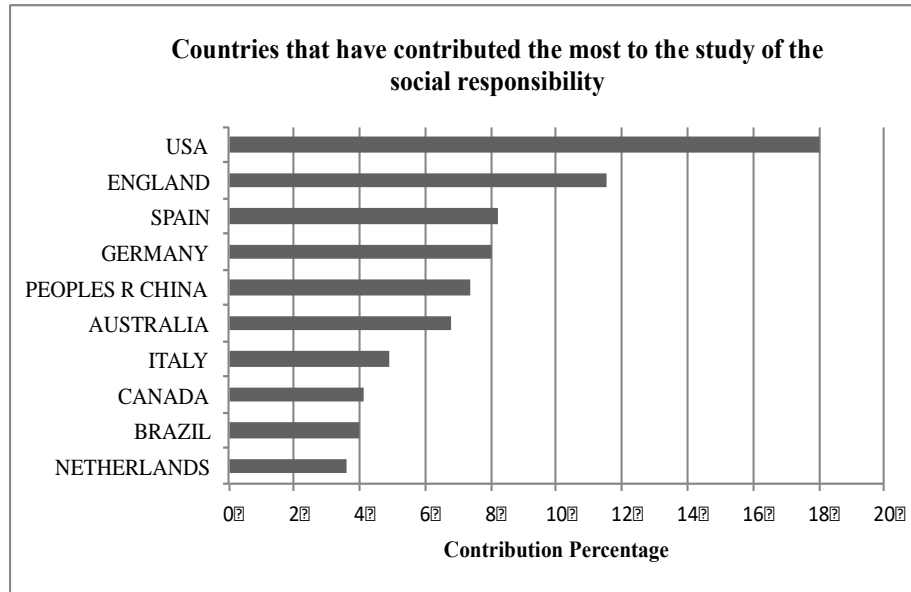


Figure 4: Countries that Have Contributed the Most to Social Responsibility Literature

Then we applied other filters to our first search query to know precisely the contribution of the business and management field regarding social sustainability. The second search query was: TITLE: (social sustainab*) Refined by: WEB OF SCIENCE CATEGORIES: (MANAGEMENT OR BUSINESS) AND DOCUMENT TYPES (ARTICLE). Indexes SCI-EXPANDED, SSCI, A&HCI, BKCI-S, BKCI-SSH, ESCI. The initial search query was 654 items but filtered by articles as shown in the search equation; the database returned 558 items. The following analyses were made with this number of items.

It is interesting to note that there is an essential growth of interest in the field of Business and Management. The number of academic products in social sustainability has had a significant development (figure 5).

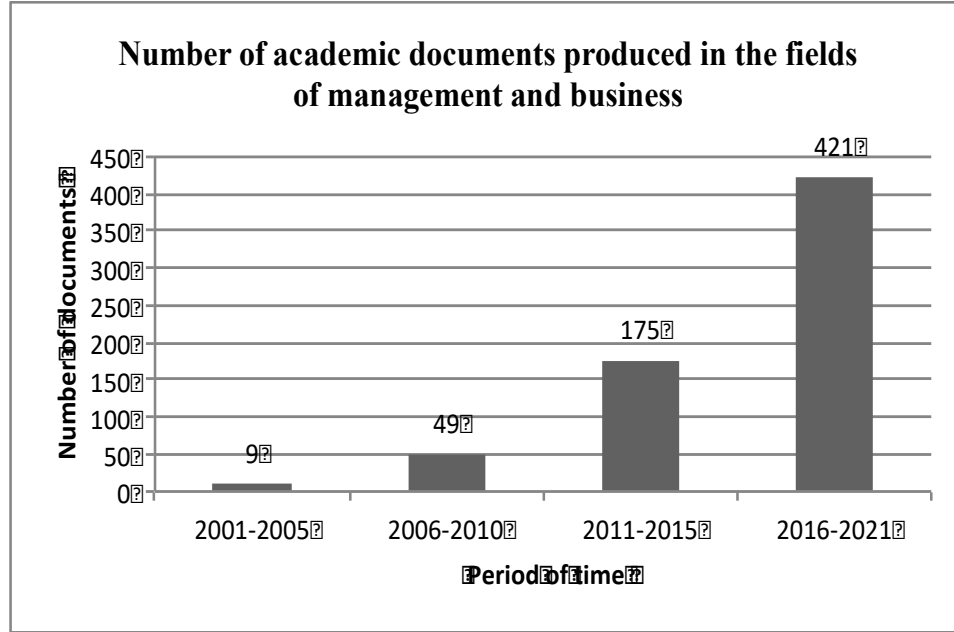


Figure 5: Academic Documents Related to Social Sustainability in Business Management Field

3. Results

3.1 Bibliometric Analysis

This section presents the results obtained through the bibliometric analysis. VOSviewer versión 1.6 was used to conduct the analysis. This is widely accepted software for performing bibliometric research (Costa et al., 2017).

3.1.1. Productive and Highly Cited Articles

As for the most cited article, Butler's (2001), entitled "membership size, communication activity, and sustainability: A resource-based model of online social structures," occupies the first place with 356 citations. This paper was published in Information Systems

Research, and it could be considered a highly influential article. Table 1 shows the top 10 most highly cited articles with their number of citations.

Table 1: The Top 10 Most Cited Articles and the Number of Citations

Authors	Year	Title	Journal	Citation
(Butler, 2001)	2001	Membership size, communication activity, and sustainability: A resource-based model of online social structures	Information systems research	356
(McWilliams, & Siegel, (2011)	2011	Creating and capturing value: Strategic corporate social responsibility, resource-based theory, and sustainable	Journal of management	335
(Orlitzky et al., 2011)	2011	Strategic corporate social responsibility and environmental sustainability	Business & society	312
(Montiel, 2008)	2008	Corporate social responsibility and corporate sustainability: Separate pasts, common futures.	Organization & Environment	282
(Pullman et al., 2009)	2009	Food for thought: social versus environmental sustainability practices and performance outcomes.	Journal of supply chain management	271
(Kolk & Tulder, 2010)	2010	International business, corporate social responsibility and sustainable development.	International business review	257
(Kolk, 2016)	2016	The social responsibility of international business: From ethics and the environment to CSR and sustainable	Journal of World Business	205
(Sarkis, Gonzalez-torre, et al., 2010)	2010	Stakeholder pressure and the adoption of environmental practices: The mediating effect of training.	Journal of operations Management	190
(Upward & Jones, 2015)	2015	An ontology for strongly sustainable business models: Defining an enterprise framework compatible with	Organization & Environment	163
(Amran et al., 2013)	2013	The influence of governance structure and strategic corporate social responsibility toward sustainability reporting quality	Business Strategy and the environment	162

3.1.2. Productive and Highly Cited Journals

Table 2 shows the ten most highly cited journals with their category, impact factor percentage, and the number of citations. As can be seen, the Journal of Business Ethics has the first place with 23 articles and 1080 citations.

Table 2: The Top 10 Most Highly Cited Journals, Categories, Impact Factor, Number of Articles and Citations

Journal	Quartile Category	Impact Factor	Number of articles	% of 159	Citations
Journal of Business Ethics	Q1-Q2	4.141	26	16.352%	1080
Corporate Social Responsibility and Environmental Management	Q1	4.542	60	37.736%	911
Business Strategy and the Environment	Q1	5.483	20	12.579%	699
Organization & Environment	Q2	3.333	7	4.403%	515
International Journal of Operations & Production Management	Q1	4.619	7	4.403%	324
Technological Forecasting and Social Change	Q1	5.846	11	6.918%	284
Systems Research and Behavioral Science	Q3-Q4	0.731	8	5.031%	216
International Journal of Consumer Studies	Q4	1.538	6	3.774%	160
Journal of Business Research	Q1	4.874	5	3.145%	146
Amfiteatru Economic	Q2-Q4	1.625	9	5.660%	75

3.1.3. Co-occurrence Analysis for Popular Keywords

This analysis is conducted to observe the scope of the study of social sustainability research. The most popular keywords were in total of 2301. We selected 10 as a minimum number of keyword occurrences at least ten times. 68 meet the threshold. From each of the 68 keywords, the total strength of the co-occurrence links with other keywords was estimated. The keyword with the highest link strengths was identified. These keywords are classified into 4 clusters (Figure 6).

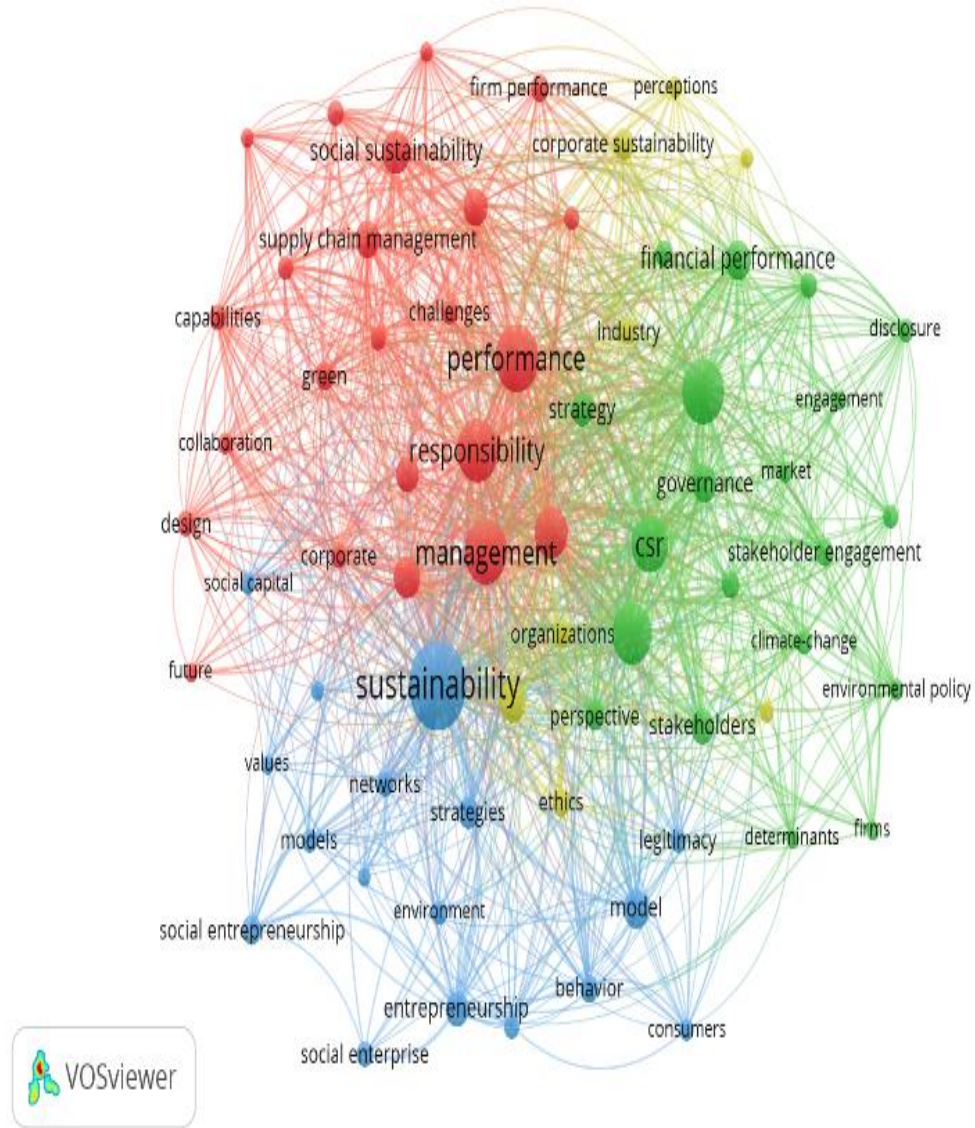


Figure 6: Co-Occurrence of Author Keywords

3.1.4. Clusters of Keywords and Number of Occurrences

All most popular Keywords grouped in clusters represent the main research streams in social sustainability in the business management field. Cluster 1 comprises 23 keywords: performance, management, and responsibility, the most popular with 85, 79, and 74, respectively (Table 3). Cluster 2 comprises 20 keywords. Corporate social responsibility, sustainable development, and CSR are the most popular with 78, 70, and 65. In this case,

combining corporate social responsibility and CSR because both concepts are the same, it gives us 143 cites, making this subject the most popular topic studied (Table 4). Cluster 3 Comprises 17 keywords. Sustainable, model and entrepreneurship are the most popular (141, 31, and 26 respectively) (Table 5), and finally, in Cluster 4, the most popular keywords are Business, corporate sustainability, and perspective with 35, 21, and 20 occurrences respectively (Table 6).

Table 3: Cluster 1- Most Popular Keyword, Number of Occurrences and Total Link Strength

Keyword	Occurrences	Total Link Strength	Keyword	Occurrences	Total Link Strength
1. Performance	85	374	13. Design	14	62
2. Management	79	320	14. Firm	14	84
3. Responsibility	74	329	15. Challenges	13	64
4. Impact	53	255	16. Corporate	13	65
5. Social Sustainability	37	125	17. Resource-based view	13	85
6. Innovation	34	143	18. Environmental Sustainability	12	45
7. Supply Chain Management	30	153	19. Environmental Management	12	78
8. Framework	29	145	20. Collaboration	11	56
9. Social Responsibility	27	87	21. Competitive Advantage	10	57
10. Green	18	85	22. Conceptual-Framework	10	52
11. Firm Performance	16	69	23. Future	10	36
12. Capabilities	15	83			

Table 4: Cluster-2: Most Popular Keyword, Number of Occurrences and Total Link Strength

Keyword	Occurrences	Total Link Strength	Keyword	Occurrences	Total Link Strength
1. Corporate Social Responsibility	78	309	11. Stakeholder Theory	14	65
2. Sustainable Development	70	256	12. Climate-change	12	49
3. CSR	65	270	13. Disclosure	12	50
4. Financial Performance	33	147	14. Environmental Performance	12	60
5. Governance	29	141	15. Environmental Policy	11	67
6. Stakeholders	26	124	16. Market	11	50
7. Strategy	25	108	17. Determinants	10	42
8. Stakeholder Engagement	18	95	18. Engagement	10	42
9. Information	16	81	19. Firms	10	39
10. Companies	14	73	20. Perspectives	10	46

Table 5: Cluster-3: Most Popular Keyword, Number of Occurrences and Total Link Strength

Keyword	occurrences	total link strength	keyword	occurrences	total link strength
Sustainability	141	460	Legitimacy	13	69
Model	31	98	Models	13	63
Entrepreneurship	26	83	Environment	12	38
Strategies	21	94	Consumers	11	33
Social Entrepreneurship	19	42	Social Capital	11	49
Behavior	18	62	Identification	10	37
Networks	14	59	Knowledge	10	40
Social Enterprise	14	33	Values	10	42
Consumption	13	48			

Table 6: Cluster-4: Most Popular Keyword, Number of Occurrences and Total Link Strength

Keyword	Occurrences	Total Link Strength	Keyword	Occurrences	Total Link Strength
Business	35	167	Ethics	17	82
Corporate Sustainability	21	72	Industry	14	71
Perspective	20	99	Leadership	11	36
Organizations	19	79	Perceptions	11	54

Thus, according to the keyword analysis, social sustainability in business and management has been mainly oriented towards managing corporate social responsibility and sustainable development through models and performances in both business and entrepreneurship. Since sustainability is much more than corporate social responsibility, it is time that researchers should broaden their focus of interest to make a higher contribution to sustainability from the social dimension.

3.1.5. Bibliographic coupling and document analyses

The bibliographic coupling allows identifying the papers that use the same set of cited articles, showing the authors that are bibliographically coupled by clusters showing the most influential authors and identifying the networks that the authors are built between them.

From 558 documents, we selected the minimum number of document citations to be 60. As a result, 45 articles met the threshold, and the total strength of the bibliographic coupling links with others was estimated. The articles with the greatest total link strength were selected. Due to five documents that have been highly cited were not connected, they were eliminated and not included in the analysis. These five eliminated papers are the following: (Casper, 2007); (Rist & Dahdouh-Guebas, 2006); (Willis, 2013); (Edum-Fotwe & Price, 2009) and (Valentinov, 2014). Thus, analysis was done with 40 items (Figure 7). Besides showing the most influential and representative authors because of their number of citations (Butler, Mcwilliams, Orlitzky, Montiel, and Pullman), this analysis allows us to identify the authors' networks.

The 40 documents of these five clusters were identified and analyzed in both the topic and the method used. Table 7 shows the distribution of these 40 documents in the five clusters and the label proposed according to the content analysis. Table 8 shows the content analysis of each article in the cluster and the used method. Table Cluster 1: 15 documents, Cluster 2: 9 documents, Cluster 3: 6 documents, Cluster 4: 6 documents, and Cluster 5: 4 documents.

Table 7: Label of the Five Clusters Obtained by Bibliographic Coupling

	Label	Number of Documents
Cluster 1	Social sustainability and CSR. Elucidation of a concept and its strategic competitive advantage	15
Cluster 2	Sustainability and human behavioral factors	9
Cluster 3	Drives of social sustainability	6
Cluster 4	Evaluation of the impact of social sustainability	6
Cluster 5	Strategic approach to sustainability	4

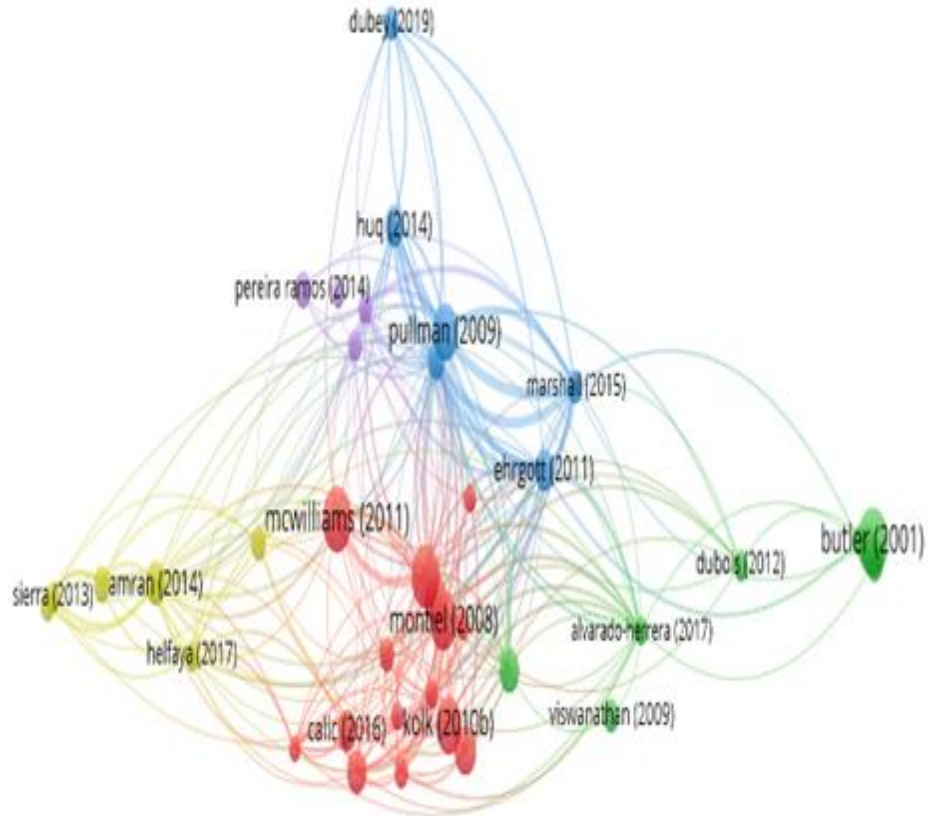


Figure 7: Five Clusters of Bibliographic Coupling of Authors and Content Analysis

Table 8: Content Analysis and Method Used in the Articles That Comprises of the Five Clusters of Bibliographic Coupling

Cluster	Authors and year	Topic	Method/sample
Cluster 1 (15 documents)	(Brønn & Vidaver-cohen, 2009)	Corporate motives for engaged in social initiatives.	Exploratory, quantitative. Managers from over 500 Norwegian companies
	(Calic & Mosakowski, 2016)	Sustainability orientation affects entrepreneurs' ability to acquire financial resources through crowd funding.	Quantitative, data of 87,261 projects were collected from the Kickstarter website.
	(Kleine & Hauff, 2009)	Presents a method for the realization of the Corporate social responsibility (CSR) concept on the basis of sustainability issues.	Theoretical approach
	(Kolk & Tulder, 2010)	Corporate social responsibility (CSR) activities and sustainable development in research IB.	Theoretical approach
	(Kolk, 2016)	Social responsibility issues in international business, developments and implications	Theoretical approach
	(Lokuwaduge & Heenetigala, 2016)	Environmental, social and governance (ESG) in business strategy and strategic performance	Exploratory, quantitative. Empirical research about the indicators of ESG issues in the Australian Securities Exchange.
	(McWilliams, & Siegel, (2011)	CSR as sustainable competitive advantage, The strategic value of CSR, economic and pricing models.	Theoretical approach
	(Moizer & Tracey, 2010)	Variables that influence the sustainability of social enterprises. Strategic alternatives to social enterprises are discussed.	Theoretical approach

	(Montiel, 2008)	Different definitions of CSR are revised. Differences and congruence between CSR and corporate sustainability (CR) reported in the management literature is discussed.	Theoretical approach
	(Orlitzky et al., 2011)	A review of theoretical approaches to strategic CSR and sustainability in terms of firm's competitiveness and reputation.	Theoretical approach
	(Reilly & Hynan, 2014)	Comparison between Green and Not Green firms regarding the sustainability corporate communication and the social media usage.	Collected data included annual reports, CSR reports, company websites, and social media platforms.
	(Sarkis, Helms, et al., 2010)	Reverse logistics practices for social sustainability. Social and ethical dimensions of sustainability.	Theoretical approach
	(Seto´-Pamies & Papaoikonomou, 2016)	It is proposed an integrative and holistic approach to integrate ethics, CSR and sustainability in management education to improve the students' knowledge and attitudes.	Theoretical approach
	(Strand et al., 2014)	CSR and sustainability in Scandinavian context	Theoretical approach
	(Thompson et al., 2015)	A comparative analysis between social, sustainable, and environmental entrepreneurship.	Theoretical approach
Cluster 1. Social sustainability, CSR. Elucidation of a concept and its strategic competitive advantage			

Cluster 2 (9 documents)	(Alvarado-Herrera et al., 2017)	Develop and validate a measurement scale for consumer's perceptions of corporate social responsibility	Empirical research. 1147 tourists from 24 countries.
	(Butler, 2001)	Analyze the role of size and communication activity in sustainable online social structures.	Data from a random sample of e-mail-based Internet social structures (listservs).
	(Griskevicius et al., 2012)	The ways that marketers, policymakers, and social entrepreneurs can contribute to eradicate environmental and social problems are presented.	Theoretical approach
	(Minton et al., 2012)	How to encourage sustainable thought and behavior effectively, especially in social media and cross-cultural research.	A total of 1,018 respondents from the United States, Germany, and South Korea completed an online survey. The motives for sustainable behaviors were examined.
	(Phipps et al., 2013)	The interactive nature of personal, environmental, and behavioral factors of consumption are explored.	Theoretical approach. Two examples are used to illustrate the sustainable consumption.
	(DUBOIS & DUBOIS, 2012)	A strategic model of human resource management is proposed as a framework for environmental sustainability in the business context.	Theoretical approach.
	(Salazar et al., 2012)	The social influence that peer groups (colleagues, family, and friends) exert in the decision to choose environmentally friendly products is studied.	Experimental methods

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	(Upward & Jones, 2015)	A framework of a sustainable business model, with its propositions and principles, is presented.	Theoretical approach
	(Viswanathan et al., 2009)	Sustainable market orientation for businesses is discussed. The analysis taking a bottom-up orientation beginning from a micro-level (psychological and sociological aspects) with macro-level implications.	Qualitative research and case study.
Cluster 2. Sustainability and human behavioral factors			
Cluster 3 (6 documents)	(Dubey et al., 2017)	Effects of big data and predictive analytics on social and environmental performance.	Sample of 205 Indian manufacturing organizations
	(Ehrgott et al., 2011)	Examining how pressures from customers, the government, and employees determine the firms' decisions to select emerging economy suppliers.	Using data from 244 U.S. and German corporations.
	(Huq et al., 2014)	It is investigated why developing country suppliers are adopting socially sustainable practices.	A multi-case study approach.
	(Marshall et al., 2015)	It is examined what drives the adoption of different social sustainability supply chain practices.	A survey of 156 supply chain managers in multiple industries in Ireland.
	(Pullman et al., 2009)	Environmental and social elements of sustainability in the food industry are analyzed.	Interviews and surveys to food and beverage producers in the U.S. Pacific Northwest
	(Quarshie et al., 2015)	The knowledge focusing on sustainability and CSR issues in supply chains is contrast and analyzed.	Theoretical approach. The systematic review covered 195 articles.
	Cluster 3. Drives of social sustainability		

Cluster 4 (6 documents)	(Amran et al., 2013)	The role of the board of directors in sustainability reporting quality (SRQ) in the Asia-Pacific region is analyzed.	A cross-sectional study of 113 companies from 12 countries in the Asia-Pacific region.
	(Alonso-almeida et al., 2014)	The worldwide diffusion of the Global Reporting Initiative's (GRI) Sustainability Report in all economic sectors from 1999 to 2011 is analyzed.	Theoretical approach
	(Helfaya & Moussa, 2017)	The impact of the board's CSR strategy and their orientation on the quantity and quality of environmental sustainability disclosure in UK-listed firms is investigated.	Empirical research
	(Kolk et al., 2010)	The notion of CSR in China is studied, through an exploration of a small sample of large retailers, both Chinese and non-Chinese companies.	Four largest Chinese retailers and four largest international ones are included
	(Morhardt, 2010)	The environmental and social performance on the corporate internet sites is studied using the Pacific Sustainability Index.	Corporate internet sites of 454 Fortune Global 500 and Fortune 1000 companies in 25 industrial sectors are analyzed.
	(Sierra et al., 2012)	Determinants for external assurance reported in the literature (industry, size, profitability, leverage) and their impact on the decision of companies to assure their CSR reports are studied.	Information published in reports
Cluster 4. Evaluation of the impact of social sustainability			

Cluster 5 (4 documents)	(Longoni & Cagliano, 2015)	Operations strategy configuration models and environmental and social priorities are studied evaluating the success in the short and long term.	Data from the International Manufacturing Strategy Survey (2009), including companies in the assembly industry in 21 different countries.
	(Rodrigues et al., 2014)	Tactical and operational planning decisions of reverse logistics systems are studied, considering economic, environmental, and social objectives.	Case-study
	(Wangel, 2011)	How social structures and agency have been included in backcasting studies for sustainable development is analyzed.	Theoretical approach (literature review)
	(White & Lee, 2009)	The potential of operational research (OR) in sustainable development is discussed.	A case study
Cluster 5: Strategic approach to sustainability			

According to the resultant clusters, social sustainability has five study focuses. First, a significant effort has been made to conceptualize the concept of social sustainability as a strategic advantage to the companies. Secondly, studies have been oriented to understanding the human behavioral factors related to the social dimension of sustainability. The third topic is introduced to the drives of sustainability, and the impact evaluation of social sustainability mainly guides the fourth trend. Finally, the fifth group of studies addresses the companies' strategic approach to social sustainability. The analysis shows how the topics were addressed in each cluster regarding the methodology. We observed that the method responds to the topics that comprise the clusters and labeled in this study. Thus, and as expected, the first cluster has been addressed mainly from a theoretical approach while the second cluster, despite including a wider variety of methods, continues the theoretical approach to be quite significant. The rest of the clusters predominates the empirical research.

3.1.6. Co-citation analysis

The co-citation analysis is conducted. The unit of analysis is the cited references. For this analysis, the minimum number of citations of a cited reference selected was 20. Of the 27743 cited references, 27 meet the threshold conforming 3 clusters (Table 9). Figure 8 shows the bibliometric map of cited references.

Table 9: Co-Citation Analysis by Cited References. Three Clusters Were Obtained

		Cited References (12 documents)	Citations	Total link strength
Cluster 1	(Bowen, 1953)	Bowen, H. (1953), <i>Social Responsibilities of the Businessman</i> , Harper & Row, New York, NY.	21	70
	(Campbell, 2007)	Campbell, J. L. (2007). Why would corporations behave in socially responsible ways? An institutional theory of corporate social responsibility. <i>Academy of management Review</i> , 32(3), 946-967.	25	99
	(Carroll, 1979)	Carroll, A. B. (1979). A Three-Dimensional Conceptual Model of Corporate Performance, <i>Academy of Management Review</i> 4(4), 497–505.	37	122
	(Carroll, 1999)	Carroll, A. B. (1999). Corporate social responsibility: Evolution of a definitional construct. <i>Business & society</i> , 38(3), 268-295.	26	74
	(Dahlsrud, 2008)	Dahlsrud, A. (2008). How corporate social responsibility is defined: an analysis of 37 definitions. <i>Corporate social responsibility and environmental management</i> , 15(1), 1-13.	27	64
	(Donaldson & Preston, 1995)	Donaldson, T., & Preston, L. E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. <i>Academy of management Review</i> , 20(1), 65-91.	24	96
	(Freeman, 1984)	Freeman, R. E. 1984. <i>Strategic management: A stakeholder approach</i> . Boston: Pitman	42	133
	(Margolis & Walsh, 2003)	Margolis, J. D., & Walsh, J. P. (2003). Misery loves companies: Rethinking social initiatives by business. <i>Administrative science quarterly</i> , 48(2), 268-305.	24	74
	(Matten & Moon, 2008)	Matten, D., & Moon, J. (2008). "Implicit" and "explicit" CSR: A conceptual framework for a comparative understanding of corporate social responsibility. <i>Academy of management Review</i> , 33(2), 404-424.	21	76
	(McWilliams & Siegel, 2001)	McWilliams, A., & Siegel, D. (2001). Corporate social responsibility: A theory of the firm perspective. <i>Academy of management review</i> , 26(1), 117-127.	29	109
	(Orlitzky et al., 2003)	Orlitzky, M., Schmidt, F. L., & Rynes, S. L. (2003). Corporate social and financial performance: A meta analysis. <i>Organization studies</i> , 24(3), 403-441	24	95

	(Kramer & Porter, 2006)	Porter, M. & Kramer, M. (2006). Estrategia y Sociedad. El vínculo entre ventaja competitiva y responsabilidad social corporativa. <i>Harvard Business Review América Latina</i> , Diciembre, 84 (12) 78-91	49	140
Cluster 2	(Seuring & Müller, 2008)	Seuring, S., & Müller, M. (2008). From a literature review to a conceptual framework for sustainable supply chain management. <i>Journal of cleaner production</i> , 16(15), 1699-1710.	29	96
	(Suchman, 1995)	Suchman, M. C. (1995). Managing legitimacy: Strategic and institutional approaches. <i>Academy of management review</i> , 20(3), 571-610.	20	51
	(World Commission on Environment and Development. 1987. <i>Our Common Future</i> , n.d.)	World Commission on Environment and Development (1987) <i>Our Common Future</i> (Oxford Univ Press, Oxford), pp 8–9.	26	37
	(Carter & Rogers, 2008)	Carter, C. R., Rogers, D., S.,(2008), A Framework of Sustainable Supply Chain Management. <i>International Journal of Physical Distribution and Logistics Management</i> , 38(5), 360-387.	26	82
	(Carter & Easton, 2011)	Carter, C.R. & Liane Easton, P. (2011). Sustainable supply chain management: evolution and future directions. <i>International Journal of Physical Distribution & Logistics Management</i> , 41(1), 46-62.	21	75
	(DiMaggio & Powell, 1983)	DiMaggio, Paul J. and Walter W. Powell (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. <i>American Sociological Review</i> , 48 (April), 147-60.	20	47
	(Dyllick & Hockerts, 2002)	Dyllick, T., & Hockerts, K. (2002). Beyond the business case for corporate sustainability. <i>Business strategy and the environment</i> , 11(2), 130-141.	24	49
	(EISENHART, 1989)	Eisenhardt, K. M., & Graebner, M. E. (1989). Theory building from case study research. <i>Academy of Management Review</i> , 14(4), 532-550.	24	42

	(Elkington, 1997)	Elkington, J. (1997). <i>Cannibals With Forks: The Triple Bottom Line of 21st Century Business</i> . Oxford: Capstone Publishing.	31	77
	(Mair & Martí, 2006)	Mair, J., & Martí, I. (2006). Social entrepreneurship research: A source of explanation, prediction, and delight. <i>Journal of world business</i> , 41(1), 36-44.	20	15
Cluster 3	(Bansal, 2005)	Bansaal, P. (2005). Evolving Sustainability: A Longitudinal Study of Corporate Sustainability Development. <i>Strategic Management Journal</i> , 26(23), 197-218.	22	64
	(Barney, 1991)	Barney, J. (1991). Firm resources and sustained competitive advantage. <i>Journal of management</i> , 17(1), 99-120.	30	102
	(Fornell & Larcker, 1981)	Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. <i>Journal of marketing research</i> , 18(1), 39-50.	29	59
	(Hart, 1995)	Hart, S. L. (1995). A natural-resource-based view of the firm. <i>Academy of management review</i> , 20(4), 986-1014.	30	106
	(Podsakoff et al., 2003)	Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. <i>Journal of applied psychology</i> , 88(5), 879.	24	56

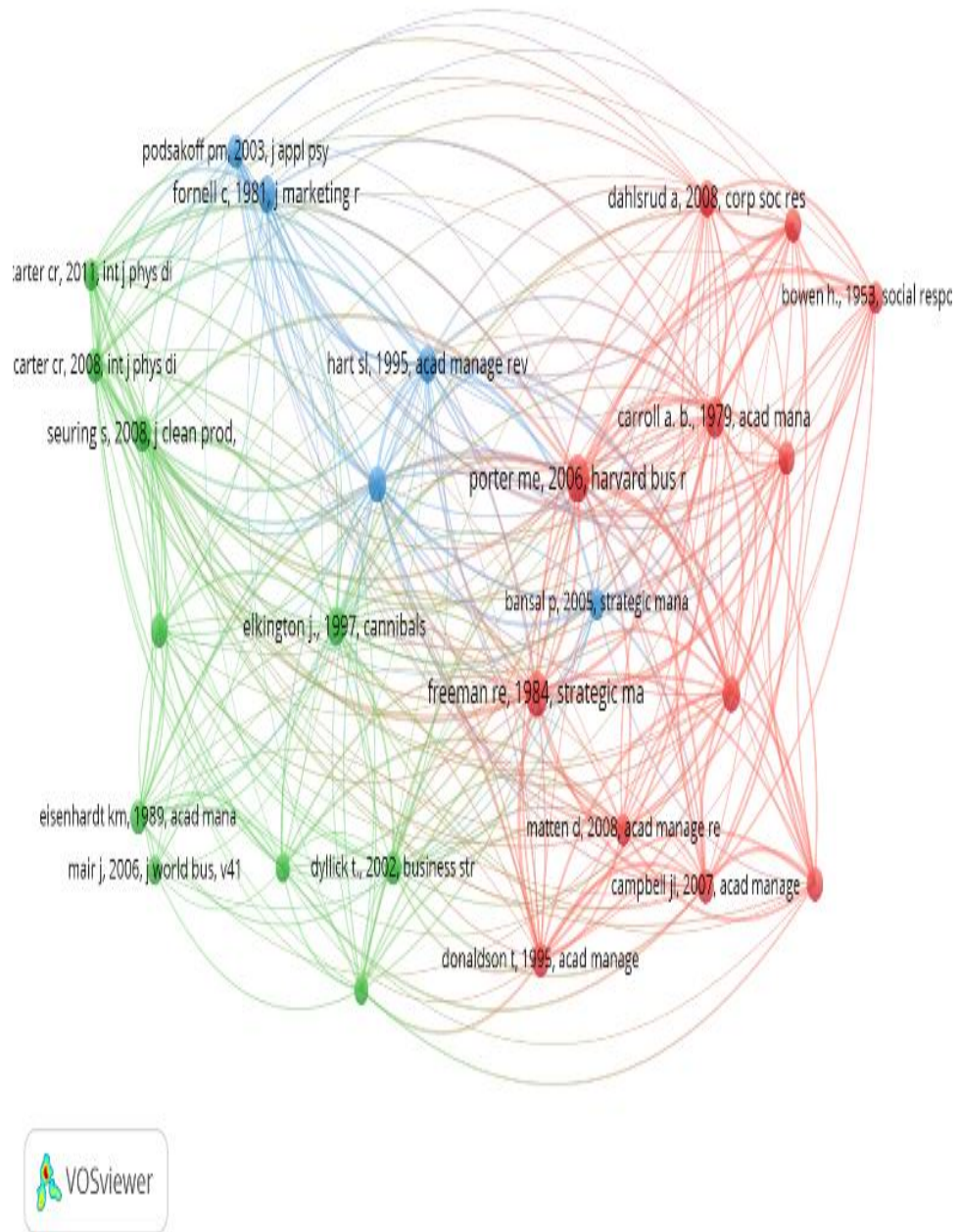


Figure 8: The Bibliometric Map of Cited References

Co-citation analysis assumes that articles that are cited together are thematically connected, showing the topics that underlie a field of knowledge (Donthu et al., 2021). Thus, analysis of these clusters shows the foundations of social sustainability as a field of study. As can be observed in the first cluster, Corporate Social Responsibility is the main topic that has given support to social Sustainability. The second cluster is more oriented to the framework of corporate sustainability that goes beyond corporate social responsibility. In this frame, the main studied topic is Supply Chain management. The third cluster is the smaller one and shows a preliminary attempt to measure the impact of sustainability as a competitive advantage for companies. According to this cluster, statistical analysis used seems to be oriented toward the structural equation models.

3.1.7. Co-citation analysis of cited sources

Finally, a co-citation analysis of cited sources was conducted. The counting method selected was the whole counting. Total counting means that each co-authorship, co-occurrence, bibliographic coupling, or co-citation link has the same weight. The unit of analysis was the cited sources. The minimum number of citations of a source was 20. Of the 12084 sources, 202 meet the threshold. For each of the 202 sources, the total strength of the co-citation links with other sources was calculated. The sources with the greatest total link strength were selected. Five clusters were obtained. Table 10 shows the sources with more citations and more strong links with others.

Table 10: Journals with More Citations and More Strength Links with Others

Source	Citations	Total Link Strength
Journal of Business Ethics	1345	60684
Academy of Management Review	685	32568
Journal of Cleaner Production	582	24677
Corporate Social Responsibility and Environmental Management	576	22244
Academy of Management Journal	439	21859

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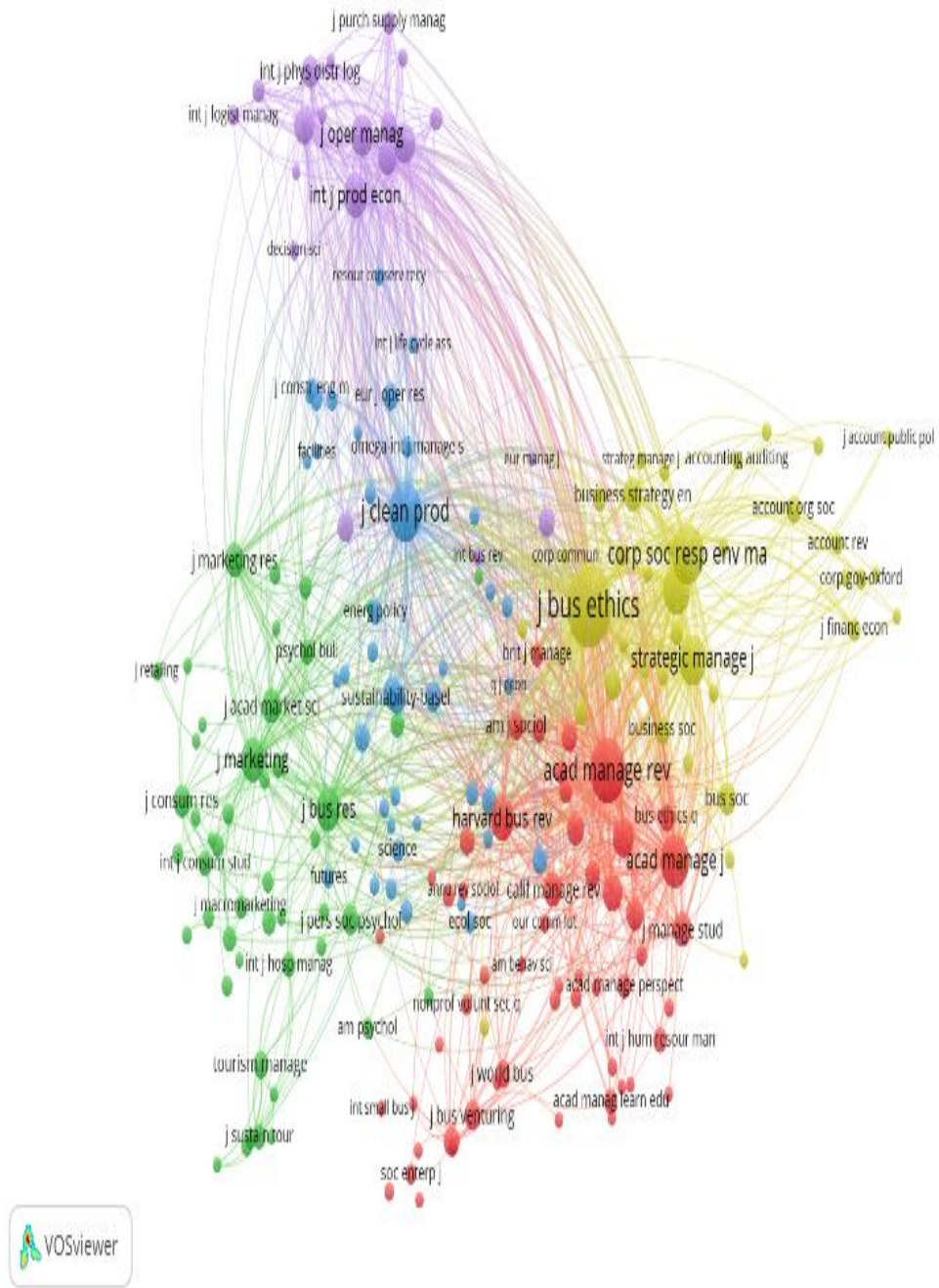


Figure 9: Map of Co-citation of Cited Sources

3.1.8 Co-citation Analysis of Cited Authors

Finally, we analyze the co-citation of authors to identify the networks grouped. We select authors with more than 50 citations. We obtained 13 authors in 3 clusters. Table 11 shows the strength of the links between the 13 co-authors grouped in the three resultant clusters. Porter, Carter, and Carroll are the most influential authors in these networks. Figure 10 allows identifying how these networks are grouped.

Table 11: Co-Citation of Cited Authors Identified in the Three Clusters and Total Link Strength

Author	Citations	Total link strength
Porter, M.E.	123	431
Carter, C.R.	111	429
Carroll, A.B.	106	399
Freeman, R.E.	94	350
Elkington, J.	97	306
Mcwilliams, A.	72	293
Hart, S.L	74	275
Seuring, S.	54	223
Bansal, P	63	217
Kolk, A	81	211
Hair, J.F.	67	197
European, Commission	69	181
United, Nations	52	108

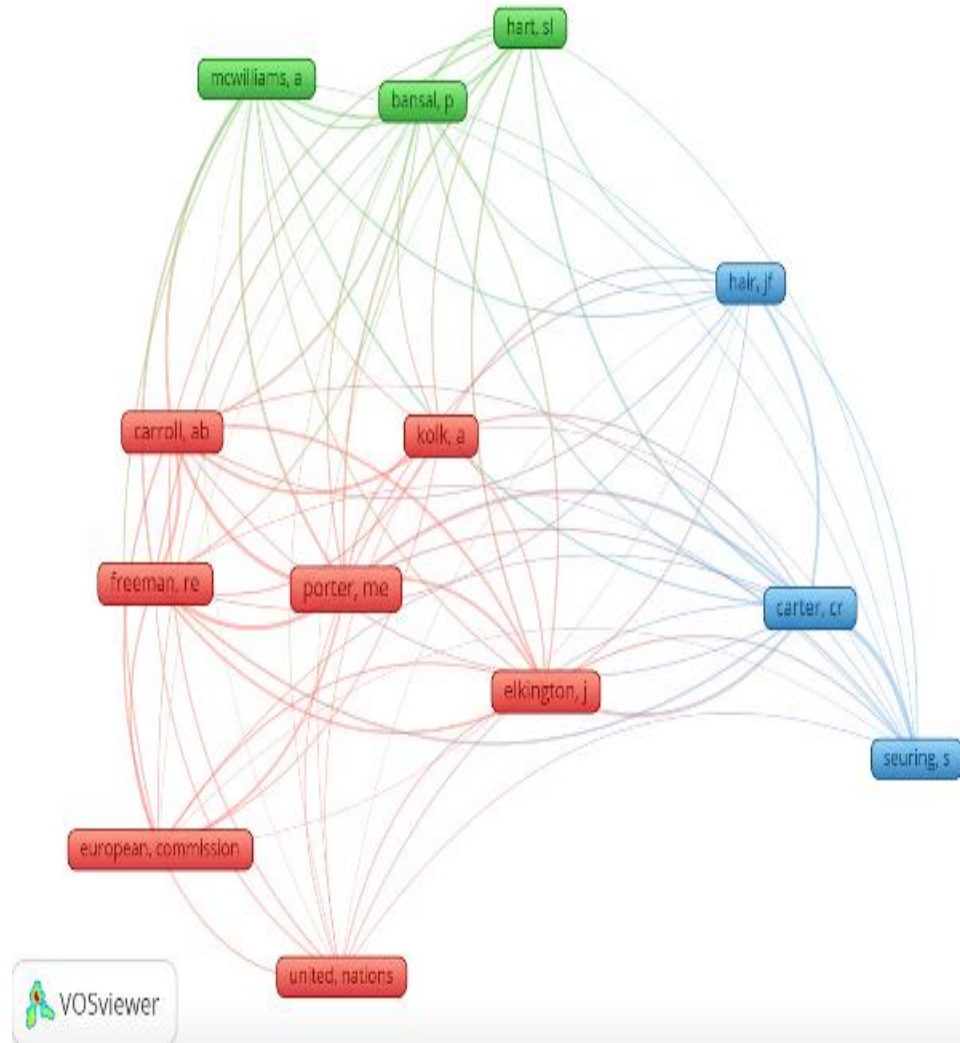


Figure 10: Map of Co-Citation of Cited Authors

4. Discussion and Implications

The findings of this content and bibliometric research offer significant implications for academia and industry on current ongoing concerns, research themes, and theoretical perspectives on social sustainability in business and management. However, the limitation of this bibliometric analysis should be acknowledged. First, the content analysis is performed via Web of Science (a single source); hence some new emerging topics and minor themes may be overlooked. Through standardization of references is possible with the use of one big dataset (do Prado et al., 2016), the conclusions of the detailed analysis are restricted to one database.

4.1 Suggestions for Future Studies

Depending on the findings of our content and bibliometric examination, four suggestions for further studies on social sustainability in the field of business and management are identified by five clusters, i.e. 1) social sustainability, CSR, elucidation of a concept and its strategic competitive advantage, 2) sustainability and human behavioural factors, 3) drivers of social sustainability, 4) evaluation of the impact of social sustainability, and 5) strategic approach to sustainability (see tables 8, the five cluster obtained by Bibliographic coupling). Based on the results of the bibliometric investigation, the following suggested themes are enlightened, i.e. diversified contextual research, multi-disciplinary studies, diversified research method, and social sustainability research in the business and management field.

4.1.1. Diversified Contextual Research

According to the analysis findings (see Figure 3), the geographic region of social sustainability literature is relatively concentrated more in developed countries like the United States, England, Spain, Germany, China, Australia, Italy, Canada, Brazil, and Netherland. With the purpose of improving the feasibility, depth and breadth of social sustainability in business and management research, future studies could involve more regional studies from developing countries.

4.1.2. Multi-Disciplinary Studies

According to our bibliometric investigation of disciplinary distribution and progression of social sustainability, research in the business and management field is highly focused on the topics like CSR, sustainability, human behavioural factors, elucidation and drivers of social sustainability, and impact of social sustainability. It lacks a multi-disciplinary effect on other fields. Likewise, the management and business field has affected other fields over time, but the volume of multi-disciplinary research is relatively more minor. The majority of the literature is similar to the business and management field, like entrepreneurship, leadership, ethics, social enterprise, governance, firm performance, innovation, supply chain management, and performance management (Table 4-6). Future research could encompass further multi-disciplinary studies, like operation management, sociology, environmental and ecology studies, and green and sustainable science, to promote social sustainability and sustainable development.

4.1.3. Diversified Research Method

This bibliometric analysis of social sustainability's mainstream impact articles under consideration involves a theoretical approach and case studies. The literature review, qualitative research, case studies, and conceptual studies are adopted (see Table 8). Only a few studies have adopted the experimental and empirical survey method designs. To reduce the common method biases, we recommended that scholars utilize diversified research methods, namely empirical surveys using multi-time and multi-source data. Furthermore, future studies could emphasize the mixed-method design and experimental design, which are best to investigate the causation.

4.1.4. Social Sustainability in Business and Management Field

As Figure 2 shows, the mainstream research on social sustainability domain mainly concentrated on environmental management and sciences, environmental performance, environmental policy, and climate change, etc. According to the bibliometric analysis, about 76% of impact articles selected from the Web of Science dataset are classified into environmental sustainability, and the remaining about 24% are related to business (11%) and management (13%). However, the number of publications related to business and management is relatively more minor; it keeps increasing from 2011 till 2021. The number of impact articles published between 2011 and 2015 is 175. It jumped to 421 in the next period from 2016-2021 (an increase of approximately 241 %). This significant jump shows the importance of this emerging field for future research. Hence, we recommended that scholars take into account social sustainability as a relevant research topic, specifically business and management.

4.2. Practical Implications

Grounded on the primary research orientation, three practical implications are offered to attain sustainable development goals. First, to ensure the community's well-being and promoting healthy lives in achieving sustainable development goals, organizations are suggested to focus more on safe working environments, flexible working hours, career growth opportunities, and offering educational opportunities for the workforce. Second, top management should design a comprehensive business strategy as it is essential in achieving social sustainability and sustainable development goals. Sustainable business plans and social business models are very effective in reducing poverty. Third, top management is advised to take greater corporate social responsibility to accomplish sustainable goals as it promotes social development in regions by offering various activities like giving health care services, improving labour policies, follows ethical business practices, renewable energy, health, safety, and environmental programs, purchasing fair trade products, etc.

4.3. Policy Implications

Based on the research outcomes, the following are the policy implications that may help achieve sustainable development goals. The results highlight the importance of collaboration among communities and organizations in sustaining long-term success as the community supports promoting social capital and easy access to the leading marketplace. The governments could play a significant role as intermediaries among social networks and organizations to offer the opportunities for bridging them together. Second, it is vital to promote corporate social responsibility to attain sustainable development around the globe. Though, it is tough to believe that organizations willingly expand their corporate social responsibility due to the scarce resources. The regulatory bodies are advised to address the incongruity between the public welfare and business interest through intervention strategies to promote social responsibilities. Third, micro-financing services assist in achieving sustainable development by way of easing poverty. To gain a competitive advantage, the smaller firms need financial assistance for industrialization to enhance productivity and alleviate poverty. Hence, the government should help microfinancing with better monetary policy, low markup rate, and minimum reserves.

Fourth, it is found that innovation significantly influences a firm's long-term survival and sustainability. It is suggested to re-work the organizations' business strategy, models, and products and services by offering sustainable innovation.

5. Conclusion

As a result of this bibliometric study, we can conclude that social sustainability has had massive growth since 2001 in several disciplines and fields of knowledge, mainly in environmental sciences (76%), and 24% belong to the business and management field. As we asserted before, it is crucial to increase the multi-disciplinary research in further studies to provide a more integral perspective of social sustainability and enhance the impact of companies and society in a broad sense. On the other hand, high-quality scholarly production (included in the WoS database) is concentrated in developed countries, such as the United States, England, and Germany. Developing countries have to increase their contribution because the conditions are pretty different, and the knowledge produced cannot always be extrapolated. In general terms, it is essential to conduct projects on social sustainability from the business and management field to contribute to the sustainable goals, improving people's work-life conditions. Regarding the data, we highlight that according to our analysis, the most cited article with 356 citations was published in 2001 in the journal *Information systems research*. The article titled "Membership size, communication activity, and sustainability: A resource-based model of online social structures" was published by Butler, B. The most productive and highly cited journal is the *Journal of Business Ethics*. This journal is also the most cited in the area and maintains the more strength link with others. Analyzing the authors' co-citation, Porter M.E. is the author with more strong links in the networks. Regarding the most popular keywords, we found four clusters. The most highly cited them in each cluster were Performance and management (Cluster 1), corporate social responsibility and Sustainable Development (Cluster 2), sustainability and model (Cluster 3), and business and corporate sustainability (Cluster 4). Finally, according to the bibliometric coupling analysis, it could be concluded that the main streams of social sustainability in the business and management science have been focused on elucidating the concept of social sustainability, the human factors involved, the advantage that it gives to the companies be responsible socially, the impact evaluation, and the inclusion of social sustainability in the corporate strategy. This bibliometric mapping research concludes that social sustainability has acquired an increasing academic interest by scholars, according to the number of publications retrieved in WoS. Through the co-citation analysis (past), we found out that Corporate Social Responsibility constitutes the foundation notion of social Sustainability. Regarding the current developments, bibliographic coupling analysis shows that both topics, Social sustainability and CSR, have been studied together. This last result is corroborating by the co-word analysis, which shows that social sustainability in business and management has been mainly centred on corporate social responsibility and sustainable development.

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