Exploring Sustainable Business Practices Integrated with Changing Technology: A Bibliometric Analysis

Kinneri Jain[1], Associate Professor, Department of Commerce, Shri Ram College of Commerce, University of Delhi

Vandana Jain[2], Associate Professor, Department of Commerce, Shri Ram College of Commerce, University of Delhi

Abstract

Sustainability is the most sought after objective to be achieved since the beginning of 21st century. In almost all realms of life and businesses, people have started diverting from traditional practices to sustainable practices, to create and deliver values for various stakeholders aligned with economic, environmental and social goals. Underpinning the sustainability perspective, the present research paper aims to discuss significant areas of research related to sustainable business coupled with emerging technology and also identifying future research directions in the area. The study aims to contributes to the literature by conducting bibliometric analysis of scientific papers from Scopus database published during 2014-2024 using VOSviewer software. The study aims to identify significant authors, journals, countries, institutes conducting research in sustainable business practices and emerging research trends related to sustainable business and technology. Our study reveals that significant progress in this research field took place from 2016, immediately after Sustainable Development Goals (SDGs) were adopted by UN. The analysis revealed that China is the leading country in terms of largest number of articles being produced and United Kingdom leads in terms of maximum citations. Bocken N.M.P has been the most cited author and Evans has been the most co-cited author. Our study shows that journal named Sustainability has published maximum articles in this area and the Journal of Cleaner Production has maximum citations.

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[1] E-mail: kinneri24@gmail.com
[2] E-mail: drvandana.srcc@gmail.com

Keyword analysis reflects scope of work in the area of sustainable business integrated with topics like technology, culture, green technology, case studies, internet of things and supply chain management.

Keywords: Sustainable Business Practices, Technology, Bibliometric Analysis, VOSviewer, Scopus

1. Introduction

Sustainable Development Goals (SDGs) emerged popularly as a concept in 2016 after being adopted by member nations in 2015. The 17 SDGs primarily aim to sensitize and nurture human development through sustainable means to eradicate concurrent issues like poverty, inequality, while protecting the environment, improving health, justice and prosperity for all in all the countries. The ninth goal in particular talks about Industry, Innovation and Infrastructure which emphasizes the stakeholders should take into consideration social and ecological parameters along economic factors while taking any decision. Nowadays, significant number of companies is adopting sustainable business practices to leverage their sustainable performance thus contributing to SDGs and increase their competitive advantage (Porter and Kramer, 2011). The companies are motivated to change their management from traditional style to sustainable methods as it is imperative to find new ways in which there is integration of financial, environmental and social parameters in the business which lead to sustainable business performance. Nowadays, the stakeholders in companies take various decisions based on economic, social and ecological factors. As a result it becomes necessary for companies to transform their models from traditional to a sustainable business model. Use of technology cannot be undermined while identifying sustainable business. Numerous scientists have proved that sustainable business could not be realised without technology (Slintak *et al.,* 2018, Lopez-Cabarcos *et al.,* 2019 and Kirikklaleli and Ozun, 2019).

The present study seeks to analyze research data attributable to sustainable business and technology by conducting bibliometric analysis on sample of 436 articles drawn from Scopus database for a period of 10 years from 2014 to 2024 using VOSviewer bibliometric software tool. Bibliometric analysis is a great tool to identify visually what

are the evolving areas of research as it enables comprehensive assessment of items of a topic or a journal by analyzing the relevant literature (Wang *et al.,* 2022). Bibliometric analysis highlights current status, structure, influential authors, journals, countries and meaningful directions of a particular research field (Wang *et al.,* 2022 and Xu *et al.,* 2022). Useful information in context of area of research can be suitably identified by prudent bibliometric analysis leading to growth of the research field under study. In an attempt to draw meaningful conclusions, the study addresses the following research questions: first, what are the most influential authors, journals, institutions and countries with maximum work in the field of sustainable business practices integrated with technology?; second, to identify relevant research trends in the context of sustainable business practices integrated with technology; and third, to highlight future research directions in investigation of sustainable business practices integrated with technology.

The bibliometric study makes comprehensive assessment of the literature to assess performance in terms of number of publications and citations produced overtime (Alan and Koker, 2021; Farrukh *et al.,* 2022) along with making use of science mapping tools like co-citation analysis, co-occurrence analysis, bibliographic coupling, co-authorship and keyword analysis through network visualization for meaningful analysis (Aggarwal and Kumar, 2022).

1.1 Rationale for the Study

The paper seeks to understand the past, present and future of research in the field of sustainable business practices with proliferation of technology in the last decade when research gained momentum in this field especially after announcement of SDGs by United Nation in 2015. The enforcement of SDGs thus provoked researchers from multiple domains to undertake research in connecting fields discussing the flow of research in relation to sustainable business practices and technology. Future is going to be all about technology adoption, in order to sustain businesses it would become imperative to make use of technology for sound decision making as a responsible entity. This raises the need to adduce the current literature in the area and understand it better.

The paper is organised as follows: the present Section, Section 1 covers introduction and research objectives, Section 2 discusses the literature review while the third section demonstrates research methodology used in the paper, Section 4 highlights results of the bibliometric analysis, Section 5 discusses the future research trends, Section 6 highlights the limitations of the study, Section 7 briefly discusses the results of the study and Section 8 makes concluding remarks.

2. Literature Review

Kim M (2004) and Saeed et al. (2002) were the early researchers highlighting the significance of sustainable business models (Marczewska and Kostrzewski, 2020). Over the years there has been rise in work related to sustainable business but last decade saw substantial rise in work related to sustainable business. Bocken et al. (2014) were first to publish significant work on sustainable business models considering stakeholder interests from environmental and social perspective. They argued that to obtain competitive advantage business models should be aligned with social, environmental and economic factors in which a business operates. Geissdoerfer et al. (2018) produced a valuable review study on innovations in business model. They argued, how efficiently a company adapts and innovates business models would assess its resilience to frequent changes while providing sustainability. In study by Hajiheydari et al. (2019), sustainable business was proposed as the main research area which has contemporary significance given the social importance of sustainable, inclusive and technologically efficient business model to reach SDGs (2030 Agenda) adopted by United Nations member states in 2015 (GRI, 2015). The review paper of Evans et al. (2017) is a remarkable study which identifies that sustainable business models help businesses to achieve their goal of sustainability. According to Ludeke-Freund (2010) sustainable business model assists in achieving social and environmental sustainability in the industries. Innovative technology and industry 4.0 have emerged as prominent topics of research in the area, as integration of technology and business is crucial to achieve sustainability and produce economically meaningful systems to harness values for all the stakeholders. Despite much research on sustainable business there is a research gap in this mainstream that still needs to be addressed. Evaluation of performance of successful business in domain related to

technology needs to be researched. From this gap, stems the very initial need to analyze the research conducted in this field in recent years. Hence, this paper contributes to this research by making bibliometric analysis in the field of sustainable business and technology. Khan et al (2021) and Gupta et al (2021) in their study have analyzed that circular economy and sustainable businesses focusing on integration with technology are latest topics of research.

3. Methodology

The paper uses bibliometric analysis to conduct science mapping of literature related to sustainable business technology using VOSviewer software and Scopus database which contains millions of records. The Scopus database is an online social science database, having 20% more citation analysis than Web of Sciences and have wider journal coverage (Mongeon and Paul-Hus, 2016; Mishra *et al.*, 2021). Google scholar is not as credible as Scopus (Falagas *et al.*, 2008) hence, it has not been used. Bibliometric analysis provides an exhaustive map of scientific research consistent with recent developments (Anuar *et al.,* 2022 and Dabic *et al.,* 2020). It provides summary of extant scientific data to represent and establish the state of intellectual structure of a certain research topic (Donthu *et al.,* 2021). VOSviewer software was adopted as it allows three types of scientific maps such as network visualization, overlay visualization and density visualization (Van Eck and Waltman, 2010). It is possible to have practical and simple and superior comprehensions of large datasets in VOSviewer (Donthu *et al.*, 2021).

The search was conducted with keywords 'Sustainable Business' AND 'Technology'. It was ensured that selected keywords were there in title, abstract or keywords of the articles for far-reaching research. Employing the first research criteria generated 1036 documents, limiting the search to the years 2014-2024 generated 836 documents. Only Articles were considered for the research work which further provided 472 documents. Since authors have proficiency in English so articles published only in English language were selected. This generated 463 articles. Articles published only in Journals refined the results to 459 and considering only final publication stage yielded 436 Articles at the conclusion of the

procedure of search. The concluded sample of 436 articles was used in CSV file format for the purpose of making suitable analysis by the software.

4. Results and discussions

The following section of the paper presents the main results of the research area. The search resulted in 436 records on the topic available in Scopus database. Performance analysis and science mapping were conducted for making suitable interpretations.

4.1 Performance Analysis

It helps to analyze the development and distribution of research topic from various statistical perspectives like number of publication related to the topic, number of citations, most active institutions and countries conducting research in the area (Bota-Avram, 2023).

4.1.1 Number of Publications related to Sustainable Business and Technology

Figure 1 provides information on documents published in this area in past decade. Rapid growth in number of papers being published can be seen from 2016 to 2024, when SDGs were announced by United Nation in the year 2016, research picked up momentum in this field with an increasing number of publications in this area. Publications till May 2024 have been included in the dataset. The interest in this field has risen sharply given the fact that many countries realize the need and importance of integrating, environmental, social and financial objectives in carrying out the business.

Figure 1: No. of Articles Published, 2014-2024
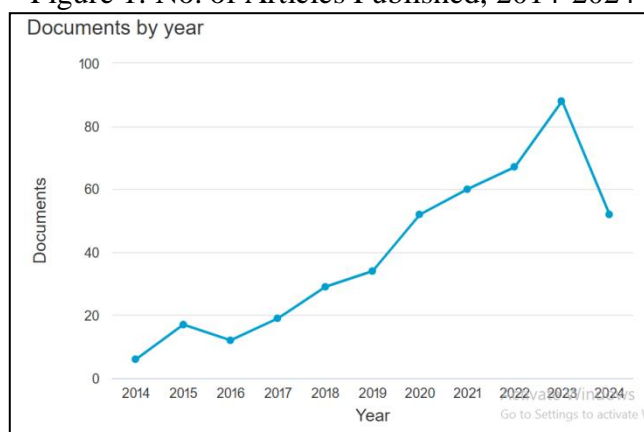
Source: Scopus database

4.1.2 Number of Citations Overtime

There is a sharp rise in number of citations of the publications in the past ten years as depicted in Figure 2. There has been a sharp increase from 2016 and the trend continues. Maximum citations (466) were accounted for the study conducted by Bocken et al. (2014) who advocated categorization of sustainable business model archetypes so that the research in this field could be broadened and unified (Bota-Avram, 2023). Significant citations (390) were received for paper by Fernando et al. (2019) related to relation between environmental innovation and sustainable business performance.

Figure 2: Number of Citations, 2014-2024

No. of Citations Over Time
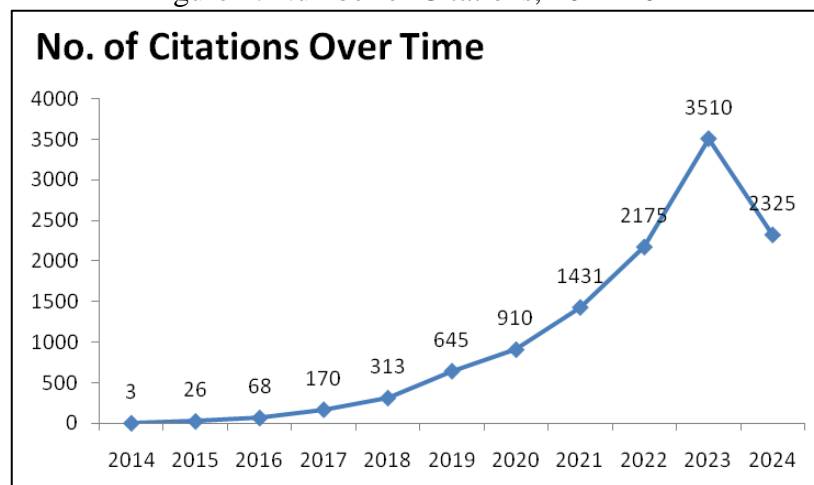
Source: Authors' compilation from the results

4.1.3 Countries Contributing to Research in Sustainable Business and Technology

Table 1 presents top 10 countries contributing to this research. China leads the research in the field in terms of number of documents whereas United Kingdom is producing the most cited research hence it is the leading country in category of citations followed by significant work from India, Italy and United States. Malaysia is also producing good quality research work reflected through its citations status. The analysis clearly indicates importance of sustainability and technology emphasized by these countries through their increasing research contribution.

Table 1: Top Ten Countries Contributing to Research in Sustainable Business and Technology

S. No.	Country	Documents	Citations	Average citation per item
1	China	54	1031	19.09
2	United Kingdom	42	2358	56.14
3	India	40	894	22.35
4	Italy	39	1503	38.54
5	United States	38	1238	32.58
6	Indonesia	23	465	20.22
7	Malaysia	22	1154	52.45
8	Spain	22	358	16.27
9	Germany	21	760	36.19
10	Taiwan	20	408	20.4

Source: Authors' compilation from the results

4.1.4   *Journals Publishing Work on Sustainable Business and Technology*

Table 2 highlights top 10 journals publishing work on sustainable business and technology. *Sustainability* journal has published maximum articles in this period followed by *Journal of Cleaner Production*, but looking at the citation of articles, the *Journal of Cleaner production* is the leading journal providing good quality papers which seem to be of academic interest to the researchers. Even *Management Decision* Journal, Journal of *Technological Forecasting and Social Change* and *Business Strategy and The Environment* Journal have good average citation per item reflecting the quality of articles published in these journals.

Table 2: Top 10 Sources of Publication related to Sustainable Business and Technology

S. No.	Source	Documents	Citations	Average citation per item
1	Sustainability (Switzerland)	76	1679	22.09
2	Journal of Cleaner Production	37	2905	78.51
3	Business Strategy and The Environment	12	289	24.08
4	Technological Forecasting and Social Change	7	258	36.85
5	Environmental Science and Pollution Research	6	103	17.16
6	Management Decision	6	256	42.66
8	Heliyon	5	24	4.8
9	Business Strategy and Development	4	1	0.25
10	Emerald Emerging Markets Case Studies	4	13	3.25

Source: Authors' compilation from the results

4.1.5   Highly Cited Authors in Sustainable Business and Technology

Table 3 lists the authors contributing meaningful literature in this field with Bocken leading with the highest number of citations (466), followed by Chiapetta Jabbour having second highest citations (435). Looking at average citation per item, authors like Fernando, Wah, Haseeb, Hussain, Jermsittiparsert, Slusarczyk have contributed meaningful research work having interest to other authors. Their average citations are very high given that they have only one document each to their credit. This shows high quality of their research work.

Table 3: Top 10 Most Cited Authors

S. No.	Author	Documents	Citations	Average citation per item
1	Bocken, N.M.P.	2	466	233
2	Chiappetta Jabbour, Charbel Jose	2	435	217.5
3	Fernando, Yudi	1	390	390
4	Wah, Wen-Xin	1	390	390
5	Haseeb, Muhammad	1	336	336
6	Hussain, Hafezali Iqbal	1	336	336
7	Jermsittiparsert, Kittisak	1	336	336
8	Ślusarczyk, Beata	1	336	336
9	Azapagic, Adisa	2	289	144.5
10	Mendoza, Joan Manuel F.	2	289	144.5

Source: Authors' compilation from the results

4.1.6   Institutions Contributing to Publications in Sustainable Business and Technology

Table 4 shows the 10 top most institutions which are conducting research in this area. It shows the total number of articles and citations of these top 10 institutions. Applied Social Sciences Department, Brazil, Belfer Center for Science and International Affairs, Harvard University, United States and Aalto University, Finland have significant citations of the work published. Table 4 reflects that not significant quantum of work has been done in the field, all the institutes have published single article, and hence there is scope for lot of research work in this area.

Table 4: Top 10 Institutions Producing Research in Sustainable Business and Technology

S. No.	Organization	Documents	Citations
1	Applied Social Sciences Department. Community University Of Chapeco Region, Brazil	1	112
2	Belfer Center For Science And International Affairs, John F. Kennedy School Of Government, Harvard University, United States	1	110
3	Aalto University, Finland	1	108
4	Antai College Of Economics And Management, Shanghai Jiao Tong University, Shanghai, China	1	71
5	Abu Dhabi University, United Arab Emirates	1	68
6	Agro-Know, 17 Grammou Str., Vrilissia, Athens, Greece	1	58
7	Alberta Children's Hospital, University Of Calgary, Canada	1	56
8	Bear Lab, Rabat Business School, UniversitéInternationale De Rabat, Morocco	1	47
9	Aalto University School Of Business, Finland	1	22
10	Aix Marseille Univ, Cnrs, Centrale, France	1	18

Source: Authors' compilation from the results

4.2 Science Mapping Analysis

The main purpose of science mapping analysis is to summarize the bibliometric structure of the research field (Donthu *et al.,* 2021) by using techniques like co-citation analysis, co-occurrence analysis, bibliographic coupling, and co-authorship analysis combined with network visualization. Graphic mapping methodology used in VOSviewer is an important methodology used in bibliometric analysis (Van Eck and Waltman, 2010). Visualisation in graph mapping is represented by a network of elements having different sizes of nodes. Size of the node varies according to the importance of a particular element, while the network connections represent how close the connector between the elements is (Marczewska and Kostrzewski, 2020).It allows us to depict and analyze the most representative connections between the elements that are related to the relevant research area.

### 4.2.1   *Co-Citation Analysis of the Authors*

Co-citation analysis is performed to evaluate the similarity between documents, authors and Journals. It assumes that the more the two items are cited together, higher is the chance of their content being related to each other (Zupic and Cater, 2014). Co-citation analysis of authors allows for identification of authors that are co-cited by other authors (one author is cited by two other authors). Table 5 analyses the authors who have received the highest number of co-citations.

Table 5: Top 10 Authors with Maximum Citations

S. No.	Author	Citations
1	Evans S.	210
2	Ludeke-Freund F.	209
3	Sarkis J.	153
4	Schaltegger S.	132
5	Bocken N.M.P.	127
6	Sarstedt M.	117
7	Rana P.	106
8	Ringle C.M.	99
9	Bocken N.	98
10	Zott C.	97

Source: Authors' compilation from the results

Figure 3: Co-Citation Network of Researchers in the Field
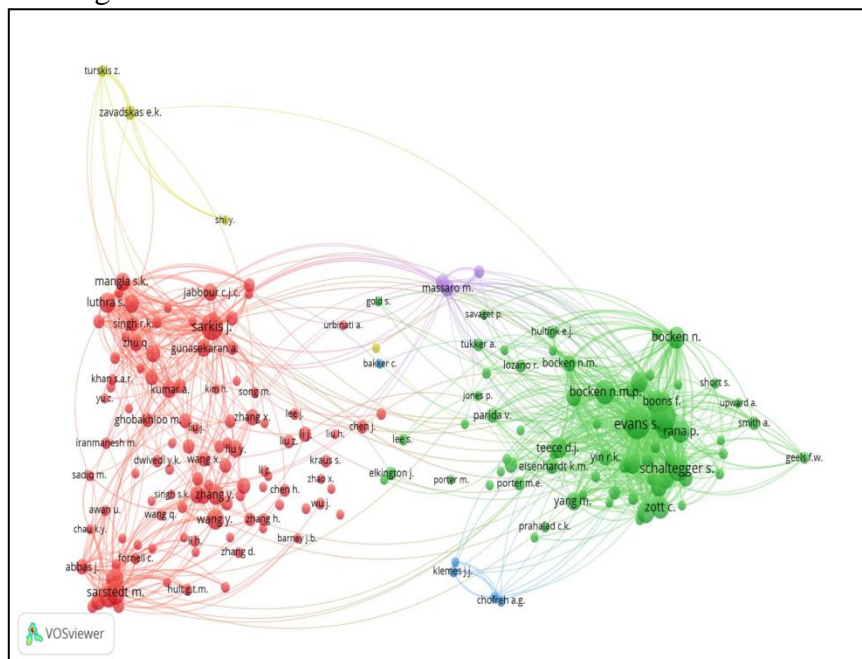
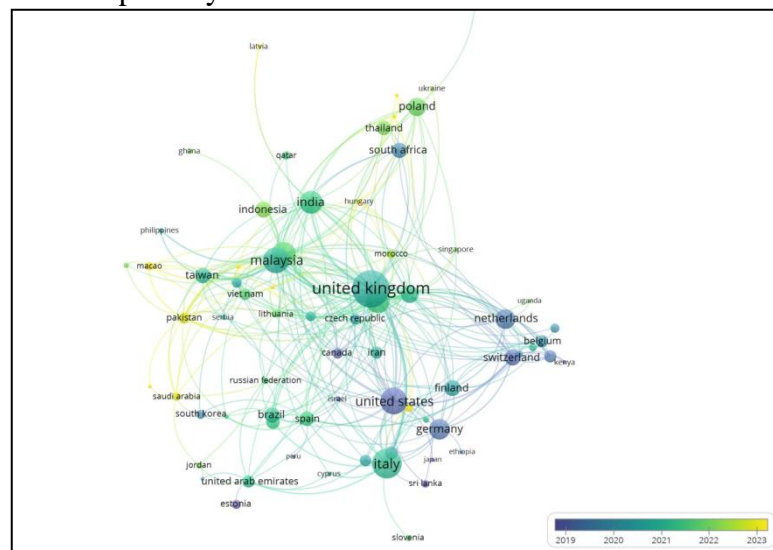Source: Authors' presentation based on VOSviewer Analysis

Figure 3 illustrates the network diagram. It represents that higher the number of citations received by an author the larger the diameter of a particular node. Larger node reflects higher number of citations received by an author. For our sample of 436 articles, 45,298 authors were identified. A minimum threshold of 20 citations of an author was considered, which contained 190 cited authors who met the threshold. Evans S. had the

highest number of citations (210). Ludeke-Freund F. is very near with 209 citations. Table 3 shows Bocken has 466 citations but co-citations are 225 (see Table 5).

4.2.2   Co-Authorship Analysis of Countries

Co-authorship analysis examines the intellectual collaboration between various countries based on number of articles produced or number of citations received. Co-authorship of countries was analyzed based on citations received, considering one as minimum number of documents per country. 84 countries were found to have met the threshold.

Figure 4: Co-authorship Analysis of Countries based on Number of Citations in the Field

Source: Authors' presentation based on VOSviewer Analysis

Figure 4 presents the overlay visualization network of co-authorship by countries based on number of citations. The figure highlights that United Kingdom has maximum citations in this area followed by Italy, United States and Malaysia. The research work gained momentum from 2020 and shows an increasing trend thereafter. A strong network could be seen in research work between United Kingdom and Italy, United Kingdom and India, United States and Germany, United States and Switzerland, Malaysia and Indonesia, highlighting the prominence of these countries in undertaking research in this field.

4.2.3   Bibliographic Coupling Analysis

Bibliographic coupling takes place when a document is commonly cited by two other documents highlighting that they have a common topic (Caputo *et al.,* 2021). Bibliographic coupling of dataset was conducted to examine network positioning between various journals and authors.
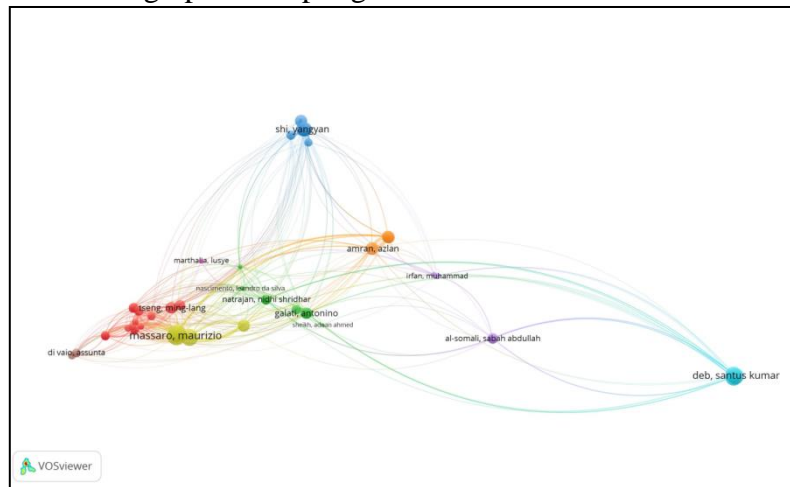
Figure 5: Bibliographic Coupling of Journals based on total link strength
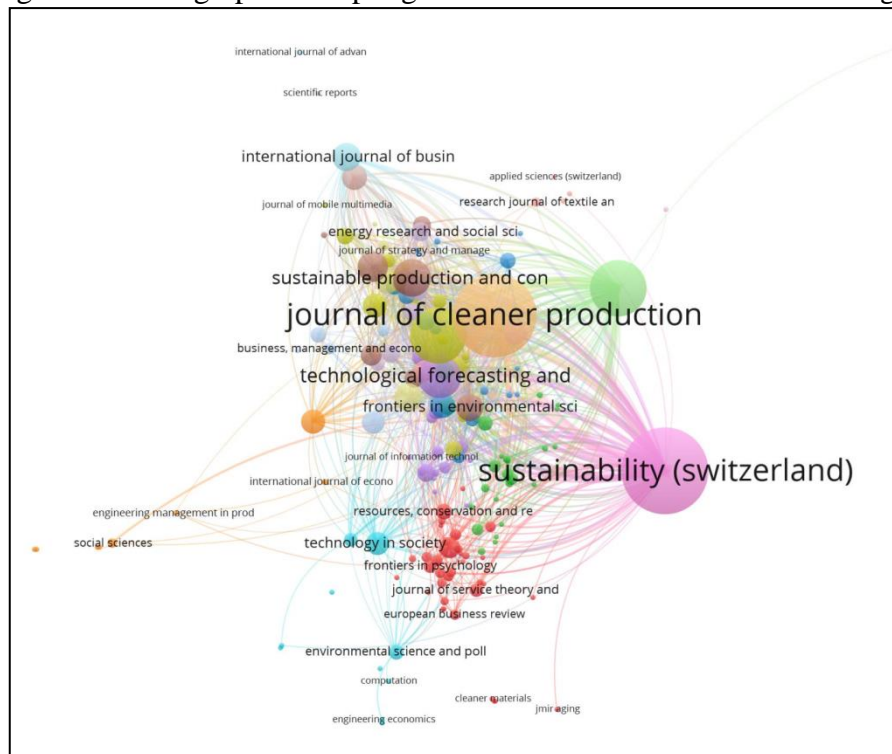
Source: Authors' presentation based on VOSviewer Analysis

To make the bibliographic coupling analysis of journals, a minimum threshold of one document per journal and zero minimum number of citations of a journal were considered, 232 journals fulfilled the criteria. Figure 5 demonstrates the prominent journals in the research area. It is clearly evident that Sustainability and Journal of Cleaner Production are the pioneers in terms of research in the area outshining other journals. Strong linkages were seen between Sustainability Journal, Journal of Business Strategy and Environment and Journal of Cleaner Production.

Figure 6: Bibliographic Coupling of Authors based on total link strength

Source: Authors' presentation based on VOSviewer Analysis

To make the bibliographic coupling of authors, a minimum threshold of two documents per author and zero citations of an author, 48 authors fulfilled the criteria. Figure 6 presents the authors with highest bibliographic coupling link strengths signifying the valuable contribution of these authors in the area (Caputo et al., 2021). Massaro, Bagmoli, Dalmas, Deb.Santus Kumar, Naïf, Valeri and Shi Yang Yan were found to be most collaborative authors in this field of research.

4.2.4   Keyword Network Analysis

Keyword network analysis helps in developing conceptual structure by establishing relationship amongst the words used in the documents (Zupic and Cater, 2013). Keywords analysis is similar to content analysis which highlights connections between keywords from the given sample of publications. Considering a minimum threshold of five occurrences of a keyword, 47 articles met the threshold, which is presented below in Figure 7.

Table 6 exhibits keywords that occurred most frequently. The word Sustainability had 84 occurrences; and sustainable business models had 35 occurrences. Nearly similar number of occurrences was seen with circular economy (34), words like sustainable business model and industry 4.0 occurred 30 and 25 times respectively in the sample. To foster an

understanding of the co-occurrence of key-words Figure 7 presents network visualization of occurrence of keywords.

Figure 7: The Co-Occurrence of Keywords Network Visualisation
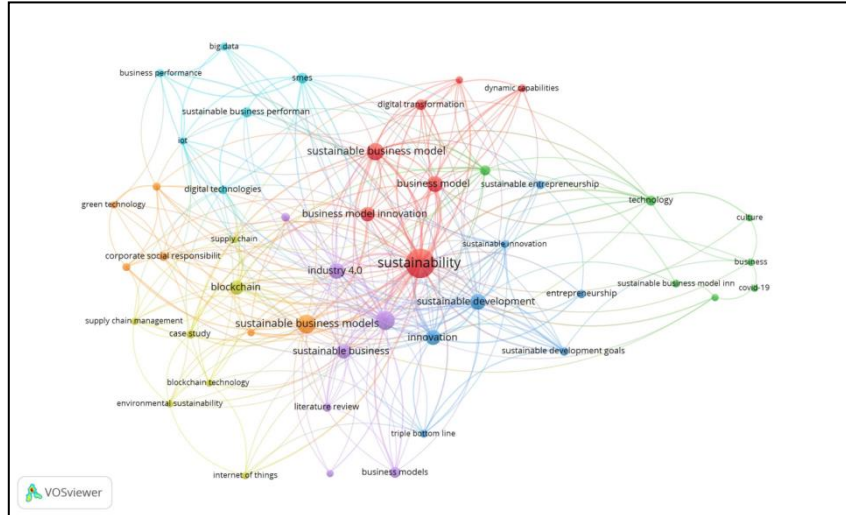
Source: Authors' Presentation based on VOSviewer Analysis

Table 6: Top 20 Keywords with Maximum Occurrences in the Publications in the Sample

S. No.	Keyword	Occurrences
1	Sustainability	84
2	Sustainable Business Models	35
3	Circular Economy	34
4	Sustainable Business Model	30
5	Industry 4.0	25
6	Business Model	24
7	Sustainable Development	24
8	Innovation	22
9	Blockchain	20
10	Business Model Innovation	20
11	Sustainable Business	20
12	Business Models	12
13	Digital Transformation	12
14	Smes	12
15	Digitalization	11
16	Sustainable Business Performance	10
17	Technology	10
18	Artificial Intelligence	8
19	Case Study	8
20	Corporate Social Responsibility	8

Source: Authors' compilation from the results

It is evident that studies on sustainable business and technology have evolved from older topic such as sustainable business models to more recent topics like innovation, block chain, digital transformation, industry 4.0, technology, artificial intelligence. Domains like digital transformation, artificial intelligence, technology, green technology, supply chain management, culture and internet of things show weak linkages with sustainability, pointing towards the future research areas for academia. This phenomenon emphasizes growing interest in the field of sustainability being researched together with inclusion of technology. As today, technology is leading humans in almost all areas like medicine, education, banking, retailing, service sector, production; it is quintessential that we integrate sustainable business and technology with corresponding research to obtain meaningful, effective and long lasting solutions.

5. Future Research Trends

The bibliometric analysis conducted in this study on various authors, journals, countries and institutes suggests emerging research trends in area of sustainable business integrated with technology, confirming that the research field is vital and of increasing interest to both academia and business. Sustainable business models are the largest stream of study suggesting an increasing academic interest in this field. The sustainability of businesses can be ensured only if traditional business models are reinstated considering social and environmental requirements. This concept of sustainable business model is now increasingly approached as a source of competitive advantage hence, it's pertinent to figure out suitable methods that lead to value creation. The circular business model approach focuses on environmentally viable solutions that aim to recycle and reuse renewable sources of energy, recognizing the limitations in planetary resources and energy use (Bocken *et al*., 2014). Geissdoerfer et al (2018) proposed sustainable business model innovation as a process to reduce negative impacts and enhance positive effects on environment, society and stakeholders. Blockchain technology and industry 4.0 can provide competitive sustainable business practices by achieving security, traceability and non-manipulability of information (Mercuri *et al.,* 2021).

Some of the future research topics that could be explored further are as follows: (a) Relationship between green technology and sustainable business; (b) Significance of technology in promoting sustainable business in industries like healthcare, agriculture, manufacturing, energy, supply chain management and real estate; (c) Integration of sustainable business and technology and circular economy in various fields; (d) Case studies on companies adopting sustainable business in various sectors; (e) Theoretical conceptualization of relation between various cultures and sustainable business; (f) Identification of various approaches integrating sustainable business and internet of things; and (g) Comparative analysis of industries/countries adopting sustainable business practices.

6. Limitations of the Study

Although the study has employed extensive bibliometric analysis, still it has following limitations. One, the publications indexed only in Scopus were used for making analysis arguing that Scopus has 20 percent more citation analysis than web of sciences having wider journal coverage (Mongeon and Paul-Hus, 2016; Mishra *et al*., 2021). Two, to have homogeneity, the study excluded books, chapters in books, conference papers, other reports. Three, quantitative analysis of the data rather than detailed qualitative content analysis is another limitation of the study. However, given the advantages of scientific map of research field provided by bibliometric analysis, it was pertinent to take it as the initial step.

7. Summary and Concluding Remarks

The results of bibliometric analysis show that there has been a significant increase in last decade in research related to sustainable business and its various domains. The number of articles rose sharply from the year 2016 immediately when SDGs were announced by United Nations and an ever increasing trend since then has been there with a steep rise in years 2019-2020 and 2022-2023. The number of citations also has been increasing since 2016 and maximum citations were received by Bocken N.M.P (466). China has produced

maximum articles (54) followed by United kingdom and India but considering average citation per article, United kingdom (2358) and Italy (1503) have produced qualitative work. Sustainability Journal has maximum articles (76) being double of articles published in Journal of Cleaner Production (37) which is second top journal. Analyzing average citation per article, Journal of Cleaner Production has 3 times more average citation per article (78.51) as compared to Sustainability Journal (22.09). Our study also revealed that Management Decisions Journal is an emerging leader with 42.66 average citations. Bocken, N.M.P and Chiapetta Jabbour have highest number of citations 466 and 435 respectively but Fernando Yudi and Wah, Haseeb, Hussain outshine in terms of average citation per document. University of Chapeco Brazil, Harvard University United States and Aalto University Finland have produced one article each in this area but citations of each reflect their significant contribution to research. Evans and Ludeke-Freund are most cited authors in terms of co-citation analysis of authors. Based on co-authorship analysis of countries, United Kingdom, Italy, United States and Malaysia have been prominent countries cited by researchers. In terms of bibliographic coupling Journal of Cleaner Production and Sustainability Journal have been cited the most and Massaro, Bagmoli, Dalmas were found to be most collaborative authors in the field. Co-occurrence of keywords reflects that greater quantum of work has been done on sustainability, sustainable business models, circular economy, industry 4.0, business model innovation but there is scope for further research in areas of technology, culture, green technology, supply chain management, internet of things and case studies in relation to sustainable business as weak linkages have been reflected by the study between them.

For decades, vital sustainability issues effecting environment and humans have not been the priority of most business models. Nevertheless, today business models are under pressure to achieve sustainable goals for their survival and to gain competitive advantage while maintaining productivity and profitability, thus creating value for triple bottom line namely economy, society and environment (Nosratabadi *et al.,* 2019). The study offers a visual image of the intellectual structure of knowledge related to sustainable business providing a comprehensive assessment of literature during the last decade. The main contribution of this study is to highlight emerging areas of research which can be integrated with research on sustainable business. Research on the various topics suggested by the study is an initial action for making meaningful sustainability decisions. This study

opens up new discussion for researchers, especially on the role of innovative technologies in sustainable performance of business, which requires further attention from business, academia as well as policy makers.

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