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FIRM'S SUSTAINABILITY AND PERFORMANCE: CRITICAL INSIGHTS FROM BIBLIOMETRIC REVIEW AND CONTENT ANALYSIS

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Abstract *The concept of sustainability has gained paramount importance in business, economic, and financial literature. Despite numerous research studies being conducted on the relationship between firm's sustainability and performance, there is still a paucity of a comprehensive review on this topic. Hence, a bibliometric analysis of 1183 articles have been conducted with an aim to identify research gaps and propose the scope for future research. Data retrieved from SCOPUS and Web of Science has been screened using PRISMA framework. The study focusses on comparative analysis, performance analysis, and scientific mapping of sorted data. The results suggest a growing interest of academicians in sustainability. Additionally, co-word analysis has been conducted to ascertain frequently used words in the literature. Furthermore, content analysis has been conducted for highly cited documents to identify prominent theories guiding the relationship and preferred parameters of both sustainability and performance. This study would be helpful for aspiring researchers in understanding the historical background, the advancements and comprehending the idea.*

Keywords: *Bibliometric Analysis, Content Analysis, ESG, Firm's Performance, Sustainability*

JEL Classification: *C88, L21, L25, M14, Q56*

INTRODUCTION

Since no business can operate entirely on its own and depends on society to meet its requirements, therefore, it has a moral obligation to pay back to society. This implies that a business must give due consideration to environment and society while making efforts to earn high profits (Tai & Chuang, 2014). Hence, creating value for all stakeholders holds equal importance. Kaplan (2023) also asserts that besides maximising profits, creating value for all stakeholders is the company's primary objective. Therefore, every business organisation is expected to behave as a 'better citizen' (Orsato, 2006) besides being profitable. Gao et al. (2021) also propagates that an organisation's overall strength relies more on Environment, Social, and Governance (ESG) and sustainable development and is not restricted to high profitability and market value. Accordingly, there is a shift in investor preferences, as they are now interested in sustainable businesses (Bocken, 2015) besides organisations, traditionally being evaluated based on their accounting (Mandal & Mitra, 2023) and market performance (Eccles et al., 2012).

The term 'sustainable business' has been defined differently across the literature (Lian & Lim, 2023; Soppe, 2004) over the years. Initially, its focus lies on environment consciousness with the goal of minimising adverse impacts of business operations on the environment, such as pollution, climate change, and carbon emissions. This was followed by the introduction of Corporate Social Responsibility (CSR), which focuses on organisations' responsibility towards society as a whole, i.e., a combination of environmental and social concerns (Singh et al., 2021). Sturdivant and Ginter (1977) propagated that firms with more CSR activities outperform those with low or no CSR activities. However, many companies failed, and the Cadbury Report (1992) identified poor governance as a major reason for their failure, therefore stimulate need to include good governance policy in business resulting in implementation of a holistic strategy of ESG in business. Soon in 1994, John Elkington introduced Triple Bottom Line (TBL) approach, which corresponds to

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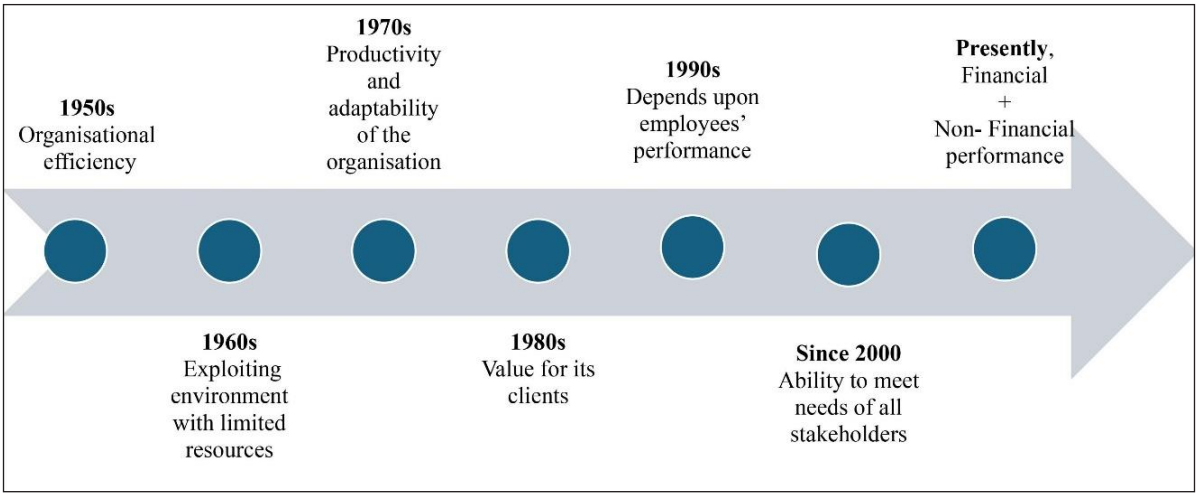
Sustainable Development as coined by the United Nations Brundtland Commission in 1987. TBL focusses on three major parameters of corporate sustainability: Economical (Profits), Social (People), and Environment (Planet), as discussed in the literature[1].

Joseph (2016) stated a firm is believed to have performed well if it has achieved aforementioned parameters in an anticipated way, i.e., by fulfilling needs of each stakeholder. Accordingly, sustainable business organisations derive benefits from their actions, which indicates a significant correlation between the business's sustainability and performance. Firm performance is a broad term, which opted different connotations over the years. Fig. 1 provides a concise overview of its evolution.



Source: Compiled by author considering explanation for Firm Performance by Taouab, O., & Issor, Z. (2019).

Fig. 1: Growth in the Concept of Firm's Performance

Initially, firm value was considered equivalent to operational performance (evaluated in terms of organisational efficiency). Subsequently, its focus shifted to exploitation of environment with limited resources in 1960s. In 1970s, firm performance was measured considering its productivity, adaptability and efficiency. However, Freeland (1975) highlights importance of increasing customer value to improve corporate profitability, thus, changed computation measure of business performance to value delivered to clients in 1980s. Later, in 1990s, it expanded its ambit to include other categories of stakeholders and was subsequently associated with the efficiency of employees. This highlighted significance of all stakeholders as key drivers of firm performance (Bassioni et al., 2005) hence emphasising on business's adherence to Stakeholder Theory of Ethics (Richter & Dow, 2017) for enhancing its performance. Haigh and Hoffman (2011) propagated that competition now-a-days is not restricted to the quality of goals and services but also on its impact on society and the environment. Recently, the definition of a company's performance expanded and now includes both financial and non-financial performance (Agostini et al., 2022; Taouab & Issor, 2019). Additionally, Sharma et al. (2019) and Haigh & Hoffman (2011) emphasise that sustainability driven organisations enjoy competitive advantage, indicating its positive association with organisational performance (Majeed, 2011).

Kumar et al. (2016) highlighted 'firms meeting ESG criteria generally exhibit less volatility thereby denting risk while still having higher returns. Consequently, several authors analysed the relationship between sustainability or ESG and firm value (market performance) (Abdi et al., 2020). Since, sustainability is not limited to affect market performance (firm value), it rather affects all aspects of business operations. Accordingly, researchers expand their purview by considering other dimensions of performance along-with firm value, thus, considering the relationship between sustainability performance and firm's overall performance (Hoang et al., 2020). Moreover, literature clearly demonstrates the concept's extensive exploration since 2010 though it has been introduced since the last decades of 20th century.

Despite numerous research studies being conducted on the relationship between firm's sustainability and performance

[1] Please see Bozesan (2016); Smith (2016); Soto-Acosta et al. (2016)

over the past two decades, only two studies have been found with comprehensive review of related literature[2], Therefore, this study incorporates dual analytical approach, involving bibliometric analysis and content analysis of scholarly publications to analyse both historical and contemporary patterns. The article comprises several sections: *Section 2* outlines the need of conducting study, *Section 3* limns the methodology employed, *Section 4* focusses on conclusions drawn from results of analysis and *Section 5* provides scope for future work.

NEED OF THE STUDY

Wahyuningrum et al. (2023) propounded 'sustainability reporting and performance' being prominent theme associated with environmental sustainability. Recently, numerous studies have been conducted on the relationship between sustainability and firm's performance (Kumar et al., 2022) or ESG and firm's value[3] or sustainability and firm's value (Abdi et al., 2020). Scholars claimed that bibliometric analysis is one of the best ways to effectively highlight dominant themes and new research directions in a field of study[4]. Furthermore, it has been observed from accessible literature that majorly studies conducted bibliometric analysis on the holistic approach of firm's sustainability (Meseguer-Sánchez et al., 2021), its related strategies (Kitsios et al., 2020) and its relationship with risk (Nobanee et al., 2021). However, few studies examined the literature on sustainability and various aspects of firm's performance (Park, 2023). Therefore, the need arouses to explore and analyse the related literature to acquire a broader perspective and comprehend the history of underlying subject prior to conducting research.

Since, this study summarises the pertinent information and inferences to aid aspiring researchers in comprehending the idea, identifying research gaps, and utilising their valuable time that ordinarily be consumed in retrieving information to understand the historical background, recent advancements, and interconnections between themes across different related publications. Consequently, five underlying research questions guiding this review of literature have been finalised (Fig. 2).

Source: The authors.

Fig. 2: Research Questions

MATERIALS AND METHODS

This study has been completed in three stages categorised as: data retrieval, data sorting, and data analysis.

Data Retrieval

For data retrieval for bibliographic research, SCOPUS and Web of Science (WoS) have been selected as databases on being relatively advantageous as compared to other

[2] Please see Atz et al.(2023); Khan (2022)

[3]Please see Behl et al. (2021); Brooks & Oikonomou (2018)

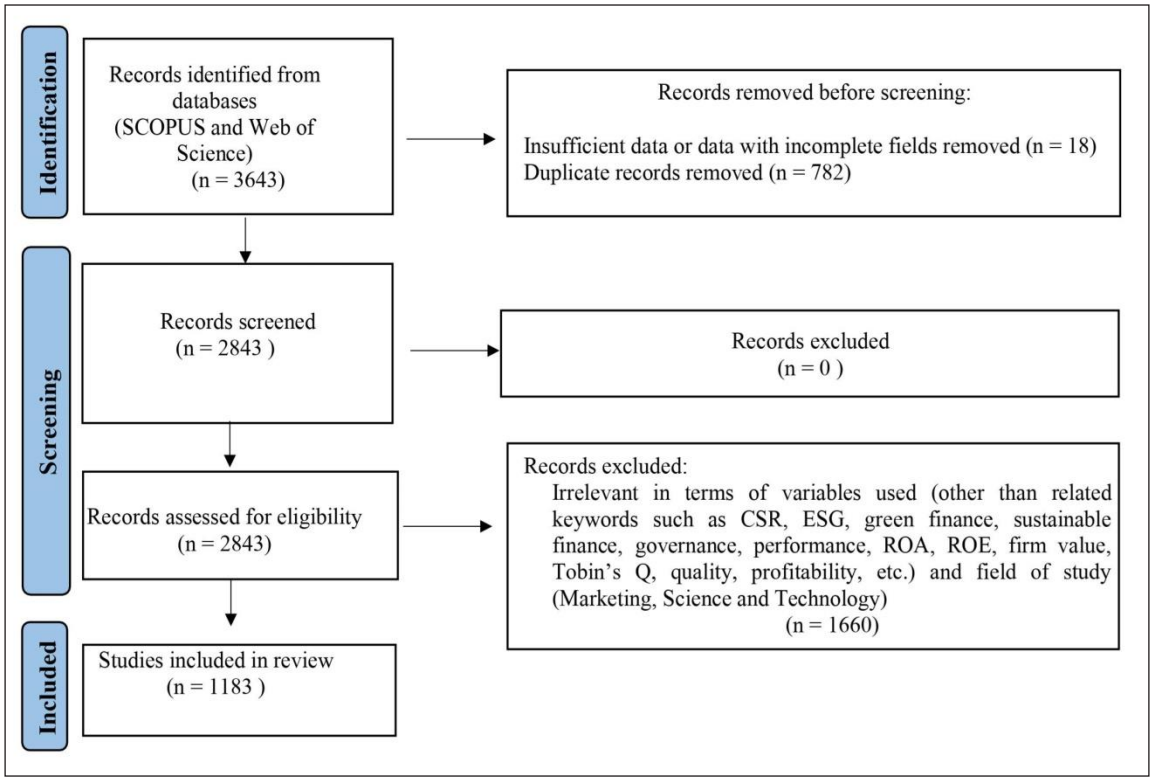
[4]Please see Abdullah et al. (2023); Bota-Avram (2023)

databases and having wider coverage in social sciences (De Giuli et al., 2023). Moreover, these two databases are readily accessible. SCOPUS is preferred because of the convenience in exporting data (Gao et al., 2021) whereas WoS is preferred for catering to the needs of a wide spectrum by providing exhaustive data, though it features only selected number of journals (Sánchez-Garcia et al., 2023).

Databases were explored on April 26, 2023, to obtain publications using keywords: 'ESG', 'sustainability', 'green finance', 'firm performance' and 'firm value' with preferred language: 'English' and time frame under study: 'Since 2000'. A total of 3643 publications were retrieved from the databases.

Data Sorting

Four separate CSV files were obtained two from SCOPUS and two from WoS, subsequently merged and then underwent screening through Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework, a widely accepted and a standard procedure for screening and refining in academia (Kumar & Gupta, 2023; Sánchez-Garcia et al., 2023).



Source: The authors.

Fig. 3: PRISMA Screening of Documents

Fig. 3 exhibits a process of obtaining the final dataset (1183 publications) after eliminating duplicate papers, papers with inadequate information, and irrelevant studies. It encompassed studies conducted between 2009 and 2023.

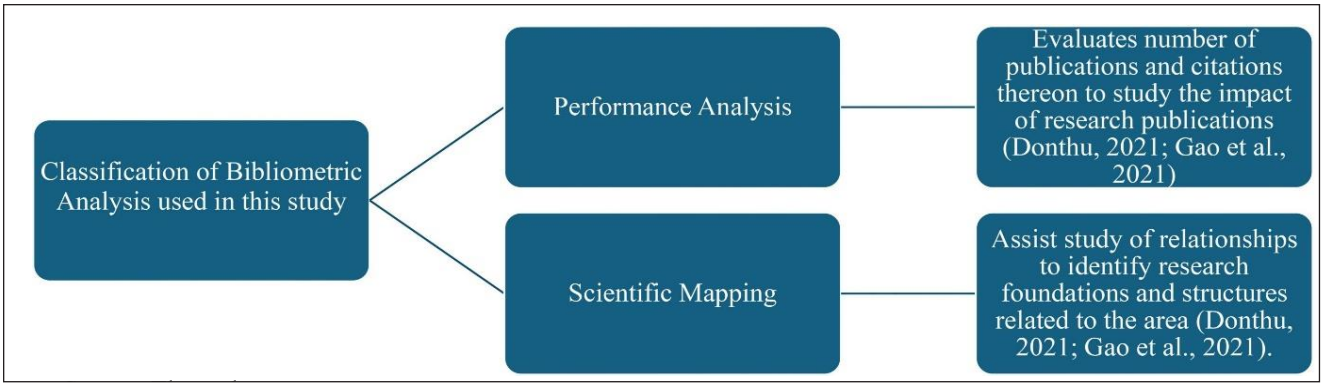
Data Analysis

Sorted data has been analysed using Bibliometric Analysis and Content Analysis.

Bibliometric Analysis

Bibliometrics is an analysis introduced by Alan Pritchard in 1969 (Roig-Tierno et al., 2017) for measurements of published documents (Osareh, 1996). De Giuli et al. (2023) propagated its importance as a tool of literature review in recent times.

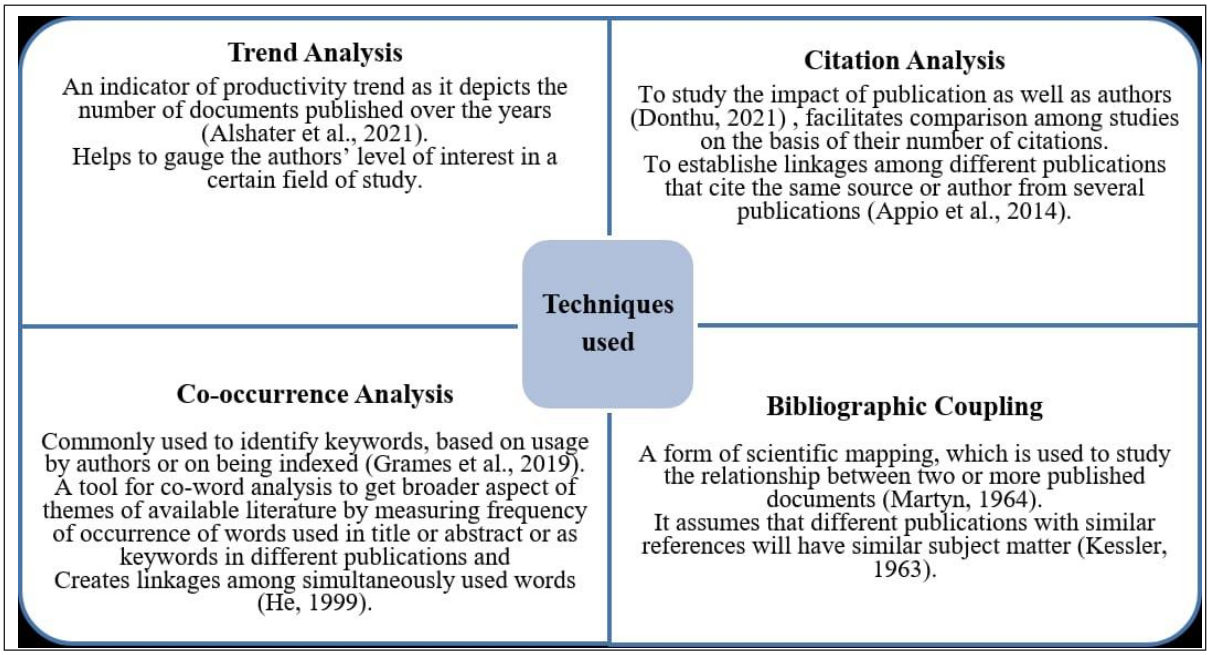
Fig. 4 illustrates various forms of bibliometric analysis used in this study.



Source: The authors.

Fig. 4: Classification of Bibliometric Analysis

To accomplish the study's purpose, four data analysis techniques have been employed (Fig. 5).

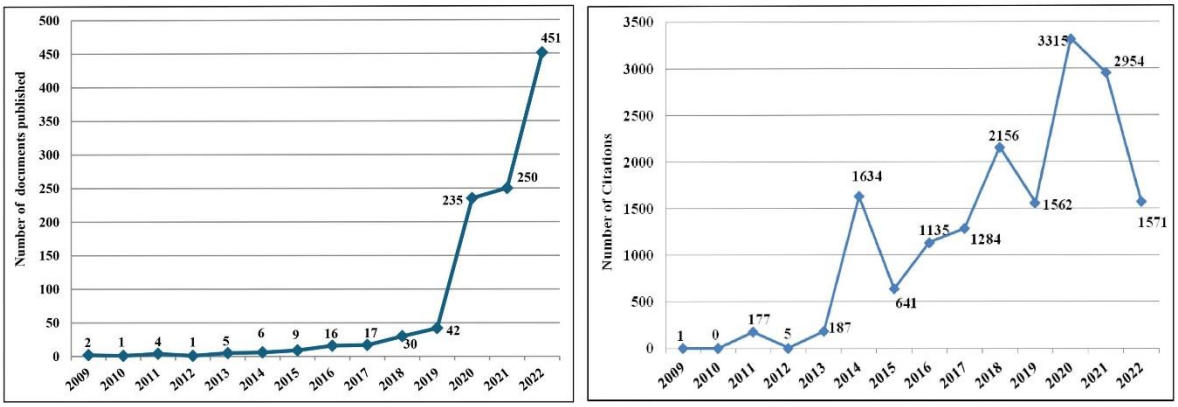


Source: The authors.

Fig. 5: Techniques of Bibliometric Analysis Used

Publication Trends

For analysing the publication trends, we purposefully omitted data from 2023, as presenting data for a few months of 2023 would result in an unbalanced distribution. It has been performed using MS-Excel to ascertain periodic fluctuations in the number of papers and citations thereon from 2009 to 2022 in the underlying subject and depicted in Fig. 6.



Source: The authors.

Fig. 6: Trends of Publications and Citations

Fig. 6 demonstrates an upward trend for the number of documents published which indicates an increase in publications over the time. It demonstrates a gradual increase in the number of relevant studies since 2016 and in the number of citations for studies until 2020, attaining a peak (3315 citations) for published documents in 2020.

It clearly indicates a substantial rise in the number of studies conducted over the past three years (since the COVID outbreak). Moreover, 451 out of 1069 studies (42.19%) have been published in 2022. Furthermore, more than fivefold rise in the number of documents published in a year (42 in 2019 to 235 in 2020) is observed. This increase in research is a sign of a concept's gaining academic appeal (Aras & Crowther, 2008; Soppe, 2004).

Most Influential Publications

Since, published literature serves as foundation for future research (Snyder, 2019; Zhang et al., 2019), an attempt has been made to identify highly cited documents. Table 1 has been created using MS-Excel to display influential publications (14 studies), each with a minimum of 150 citations.

Table 1: List of Most Influential Publications

Title	Year	Journal	No. of Citations
Corporate social responsibility and access to finance.	2014	Strategic Management Journal	1404
Green R&D for eco-innovation and its impact on carbon emissions and firm performance.	2015	Journal of Cleaner Production	290
The effects of environmental, social, and governance disclosures and performance on firm value: A review of literature in accounting and finance.	2018	British Accounting Review	262
Firms and social responsibility: A review of ESG and CSR research in corporate finance.	2021	Journal of Corporate Finance	257
The impact of environmental, social, and governance disclosure on firm value: The role of CEO power.	2018	British Accounting Review	256
Corporate social responsibility governance, outcomes, and financial performance.	2017	Journal of Cleaner Production	240
Corporate social responsibility and financial performance: A non-linear and disaggregated approach.	2016	Economic Modelling	236
Do environmental, social, and governance activities improve corporate financial performance?	2019	Business Strategy and the Environment	226
Do ESG controversies matter for firm value? Evidence from international data.	2018	Journal of Business Ethics	204

Title	Year	Journal	No. of Citations
Corporate immunity to the COVID-19 pandemic.	2021	Journal of Financial Economics	199
Business sustainability performance and cost of equity capital.	2015	Journal of Corporate Finance	187
Green practices and financial performance: A global outlook.	2017	Journal of Cleaner Production	184
Green entrepreneurial orientation for enhancing firm performance: A dynamic capability perspective.	2018	Journal of Cleaner Production	179
Environmental, Social and Governance (ESG) scores and financial performance of Multilatinas: Moderating effects of geographic international diversification and financial slack.	2021	Journal of Business Ethics	159

Source: The authors.

Table 1 reveals that the highest-cited studies have been conducted after 2013, and 50% of articles have been published during 2018 (4 articles) and 2021 (3 articles). Four highly-cited articles are published in 'Journal of Cleaner Production' with a total of 893 citations, thereby indicating that it has published articles of high quality.

Country-Wise Analysis

This section comprises an analysis of articles based on countries contributing to research in similar aspects and countries with high quality research. It will assist the potential authors to know the performance of their own country and the scope of further research in their country in this field of research. A total of 98 countries around the world have at least one published article on the relationship under study.

Leading Countries in Research

Among the 98 identified countries, the top 21 countries, each with a minimum of 20 documents are enlisted in descending order of the number of documents published in Table 2.

Table 2: List of Most Productive Countries

Country	No. of Documents
China	147
United States	140
India	105
United Kingdom	100
Malaysia	81
Australia	60
South Korea	54
Pakistan	53
Italy	51
Indonesia	50
France	46
Vietnam	46
Spain	45
Canada	42
United Arab Emirates	36
Germany	35
Taiwan	35
Saudi Arabia	28
Tunisia	28
Turkey	26
Bahrain	20

Source: The authors.

China is leading among 21 countries in addressing the total number of publications on the underlying issue (Table 2). Remaining four among top five countries are the United States, India, United Kingdom and Malaysia. It is worth noting that among these 21 countries, 11 are developed countries (Table 2), which suggests that developed nations have published more than 50% of the world's total published documents.

Table 3 enlists the top 19 countries (around 19.39% of the total 98 countries), with a minimum of 300 citations on published documents, arranged in descending order of number of citations. It also comprises of results of average citations per document (AC/D) with an objective to analyse the quality of publications produced by a country.

The United States ranks first with 4299 citations on its published documents, followed by the United Kingdom with 3643 citations. However, the level of research conducted in Belgium and the United Kingdom is quite high as Belgium has the highest AC/D, followed by the United Kingdom. Moreover, the majority of these countries (12 out of 19 countries) are developed countries, thereby indicating their contribution to high calibre research.

Table 3: List of Leading Countries

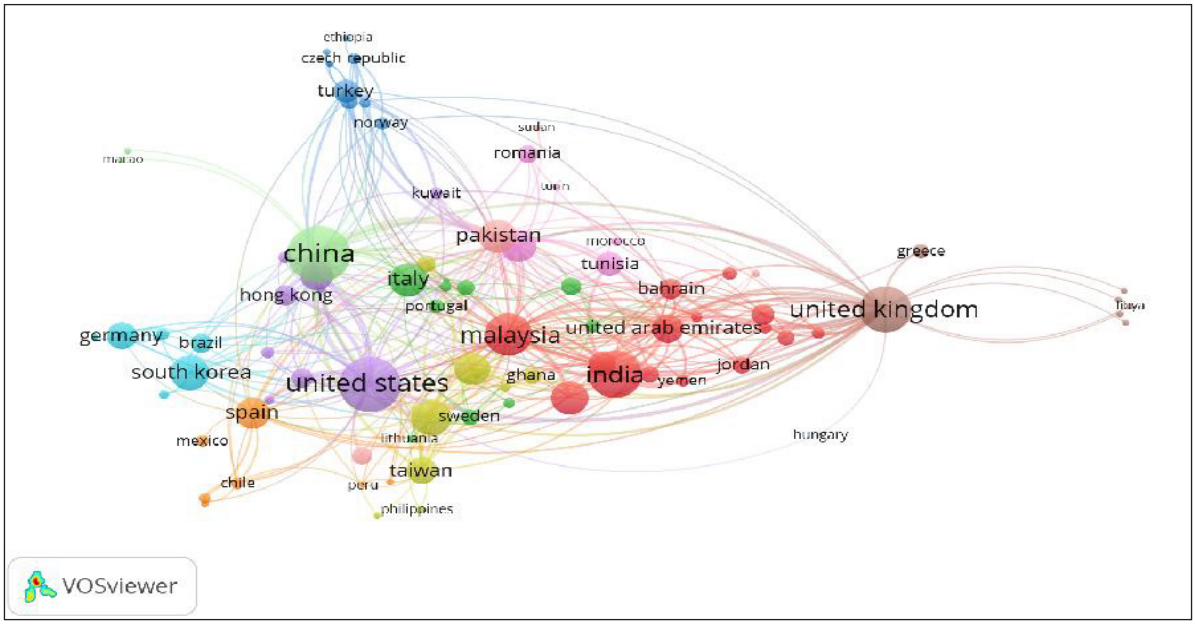
Country	No. of Citations	AC/D
United States	4299	30.71
United Kingdom	3643	36.43
China	1541	10.48
Australia	1453	24.22
Germany	1208	34.51
France	1201	26.11
Italy	1150	22.55
Malaysia	1046	12.91
Spain	878	19.51
India	517	4.92
Pakistan	505	9.53
Canada	446	10.62
Netherlands	436	24.22
Hong Kong	407	21.42
Turkey	390	15
Belgium	333	83.25
Taiwan	304	8.69
Egypt	302	15.89
Vietnam	302	6.57

Source: The authors.

Table 2 and Table 3 together reveal that Belgium though not included in the list of countries with the most published documents, it has maximum AC/D among countries with a minimum of 300 citations. Moreover, United Kingdom ranks second regarding both the total number of citations and the AC/D (36.43); however, it has a relatively lower number of publications (100).

Country Bibliographic Coupling

Bibliographic coupling among countries indicates similarities in the research conducted in different countries around the globe. Using VOSviewer, a network diagram of countries (Fig. 7) has been generated, comprising nodes of varying size and colours to represent different countries, where its size indicates the number of published documents. Larger the node, more the documents published for a country. Its colour represents the similarity of countries' objectives and keywords, and identically coloured nodes collectively form a clusters for countries with publications on related research areas and common citations (Gao et al., 2020).



Source: The authors.

Fig. 7: Network Visualisation Representing Countries

Journal-Wise Analysis

This section offers an in-depth journals-based review as to assist the potential authors in identifying suitable journals containing related research articles. The analysis suggests there are 396 journals with minimum one published article on underlying subject matter.

Most Productive Journal

Table 4 enlists the top 15 journals in descending order of their total number of published documents (minimum 10 published articles).

Table 4: List of Most Productive Journals

Journal	No. of Documents	Publisher
Sustainability	86	MDPI Open Access Publishing
Business Strategy and the Environment	28	Wiley-Blackwell
Journal of Cleaner Production	25	Elsevier
Corporate Social Responsibility and Environmental Management	24	Wiley-Blackwell
Corporate Governance (Bingley)	20	Emerald Publishing
Finance Research Letters	19	Elsevier
Cogent Business and Management	19	Cogent Open Access
Journal of Asian Finance, Economics and Business	14	Korea Distribution Science Association (KODISA)
Corporate Governance: An International Review	14	Wiley-Blackwell
Economic Research-Ekonomska Istrazivanja	13	Taylor & Francis
International Journal of Disclosure and Governance	13	Springer Nature
Journal of Business Ethics	12	Springer Nature
Sustainability Accounting, Management and Policy Journal	12	Emerald Publishing
Global Business Review	10	SAGE

Source: The authors.

Table 4 depicts that 183 out of total 320 articles (57.19%) of the top 15 journals are published in the top 5 journals, which are 'Sustainability', 'Business Strategy and the Environment', 'Journal of Cleaner Production', 'Corporate Social Responsibility and Environmental Management' and 'Corporate Governance (Bingley)'. It is evident that out of the top 5 journals, 'Sustainability', a Switzerland-based journal, ranks first in number of publications with 86 out of 183 published articles (46.99%).

Table 5 enlists the top 15 journals (each with at least 200 citations) in a descending order of number of citations.

Table 5: List of Most Influential Journals

Journal	No. of Citations	AC/D
Strategic Management Journal	1601	228.71
Journal of Cleaner Production	1386	55.44
Business Strategy and the Environment	1036	37.00
Sustainability (Switzerland)	1022	11.88
Journal of Business Ethics	687	57.25
Corporate Social Responsibility and Environmental Management	580	24.17
Journal of Corporate Finance	578	82.57
British Accounting Review	556	185.33
Economic Modelling	244	81.33
Management of Environmental Quality: An International Journal	227	45.40
Global Finance Journal	216	27.00
Corporate Governance (Bingley)	215	10.75
International Journal of Production Economics	208	34.67
Journal of Financial Economics	202	67.33
International Journal of Accounting and Information Management	200	28.57

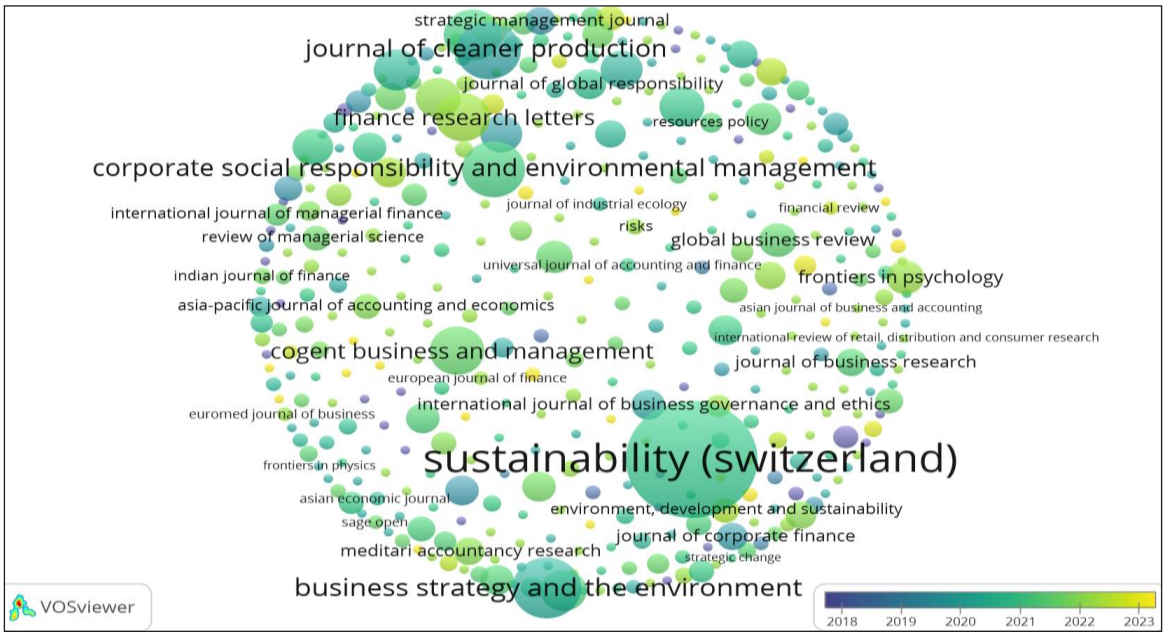
Source: The authors.

It is worth noting from Table 5 that 'Strategic Management Journal' (Wiley-Blackwell Publishing and 'A*' rating in ABDC Journal Quality List) publishes the most cited publications (total 1601 citations). Despite not being included in the list of the most productive journals (number of articles < 10), it holds the top position as AC/D, thereby, indicates that it comprises publications of exceptional quality.

On collectively reviewing Table 4 and Table 5, it has been identified that 'Journal of Cleaner Production' (an Elsevier publication with an 'A' rating in the ABDC Journal Quality List), appears on both lists. Thus, indicating its prominence of having high productivity in terms of documents published (25 articles) besides its distinction of being one of the most cited journals (1386 citations).

Journal Overlay Visualisation

A visual presentation of the journals (Fig. 8) has been generated using VOSviewer to enhance understanding.



Source: The authors.

Fig. 8: Journals Overlay Visualisation

It is evident that 'Sustainability' is the most popular journal with the most published documents, as represented by the largest node (Fig. 8). The colour of its node indicates that it is a preferred journal after 2020. However, several new journals are publishing recently, among which 'International Review of Economics and Finance', is the most popular in 2023. Since 2022, 'Finance Research Letters' has also been publishing articles on underlying relationship.

Author Wise Analysis

This section provides results of authors-based analysis for various available published articles. Future researchers would be able to discover renowned authors working on this topic.

Most Productive Authors

The dataset consists of 2093 authors who contributed minimum one paper associated with the firm's sustainability and performance. Table 6 enlists 14 authors with a minimum of four publications.

Table 6: List of Most Productive Authors

Authors	No. of Documents
Buallay, A.	12
Hussainey, K.	10
Kim, S.	10
Ali, S.	8
Rezaee, Z.	6
Velte, P.	6
Tabash, M.I.	5
Aboud, A.	5
Bodhanwala, R.	5
Lee, J.H.	5
Lee, J.	5
Hashim, H.A.	4
Tran, Q.T.	4
Al-Faryan, M.A.S.	4

Source: The authors.

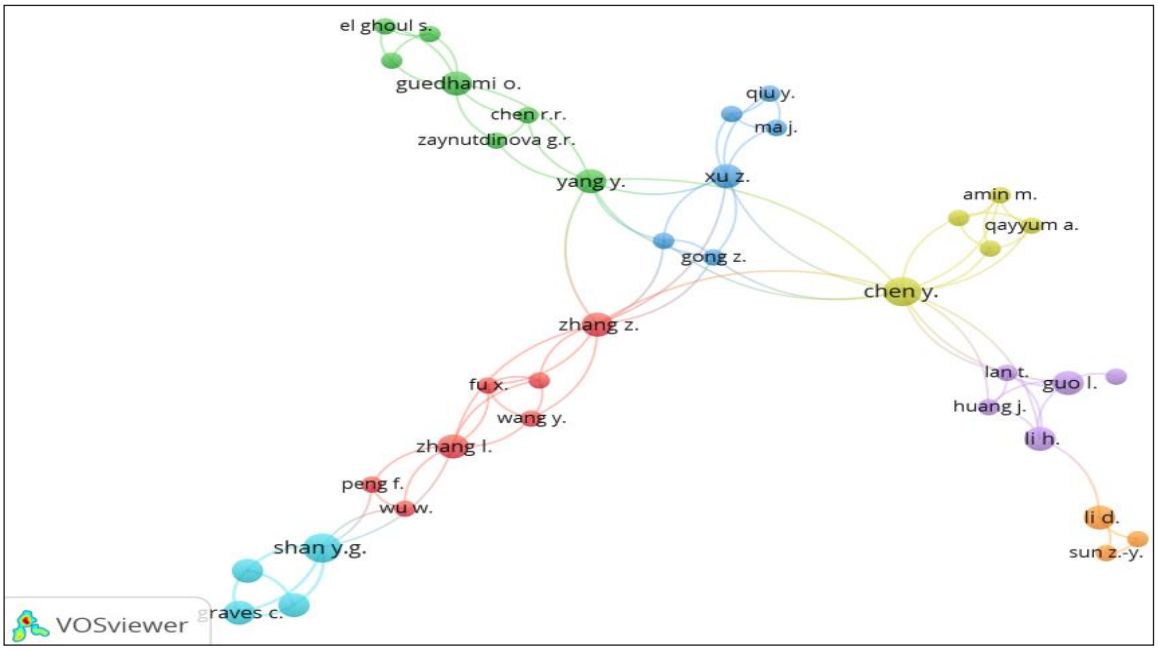
Table 6 demonstrates that Buallay A. is the author with the maximum number of published documents. Besides Hussainey, K., Kim, S., and Ali, S. are the most productive authors. These authors contributed to 40 out of 89 articles (44.94%) by the top 14 authors in the underlying topic.

Table 7: List of Most Influential Authors

Authors	No. of Documents	No. of Citations	AC/D
Serafeim, G.	3	1519	506.33
Ioannou, I.	1	1404	1404.00
Cheng, B.	2	1404	702.00
Rezaee, Z.	6	417	69.50
Lee, K.H.	2	407	203.50
Min, B.	1	290	290.00
Zhang, X.	3	269	89.67
Oikonomou, I.	1	262	262.00
Brooks, C.	1	262	262.00
Gillan, S.L.	1	257	257.00
Koch A.	1	257	257.00
Starks, L.T.	1	257	257.00
Koh, L.	1	256	256.00
Li, Y.	1	256	256.00
Gong, M.	1	256	256.00
Zhang, X.-Y.	1	256	256.00
Hussainey, K.	10	243	24.30
Sarkis, J.	1	240	240.00
Wang, Z.	1	240	240.00
Aboud, A.	5	239	47.80
Nollet, J.	1	236	236.00

Source: The authors.

Table 7 indicates that the top 1% of authors have a minimum 236 citations. Serafeim, G., is the most cited author with 1,519 citations on a total of 3 articles (AC/D: 506.33). On an average, each of the above listed authors has AC/D over 20; thereby indicating that their work is of the utmost quality. Besides Ioannou, I., Cheng, B., and Serafeim, G. also produced high-quality work, with AC/D > 500. Additionally, these authors share a common article. Aboud, A., Rezaee, Z., and Hussainey, K., are only authors with a minimum of five publications and higher citations thereon.



Source: The authors.

Fig. 9: Network Visualisation Representing Authors

Fig. 9 portrays a network (comprising seven clusters) of authors who have contributed to this field.

Co-Word Analysis

Co-word analysis has been conducted to identify key terms and preferred research areas.

Keyword Co-Occurrence

While conducting Keyword co-occurrence analysis, 3072 keywords were identified. Approximately 1% of these keywords (31 keywords) have been enlisted in Table 8 in descending order of their frequency of occurrence.

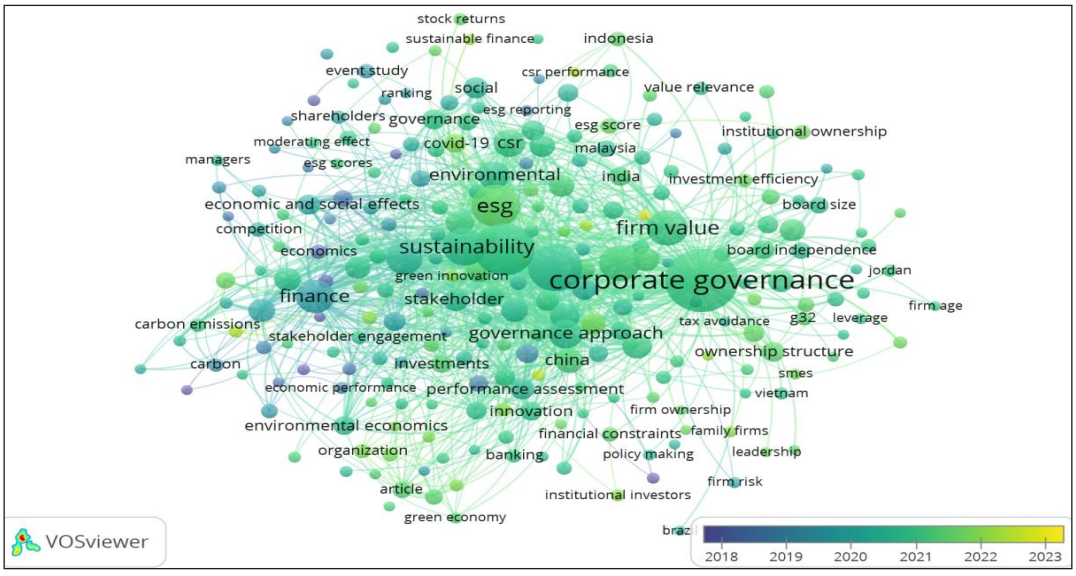
Table 8: List of Keywords

Keywords	Occurrences	TLS
Corporate governance	449	1143
Financial performance	277	1150
Corporate social responsibility	207	923
ESG	171	638
Sustainability	130	689
Firm performance	109	401
Firm value	106	361
Finance	90	648
Sustainable development	78	503
Governance approach	67	516
Environmental	62	255
CSR	57	237
Industrial performance	47	371
Firm size	47	314
China	45	276
Performance	44	228
Corporate strategy	40	297
Environmental performance	40	227
ESG performance	40	112
Environmental management	39	278
Stakeholder	36	314
Corporate financial performance	36	191
ESG disclosure	36	147
Regression analysis	34	257
Stakeholder theory	34	157
Board of directors	33	107
Earnings management	33	98
Performance assessment	32	258
Stock market	31	248
Social	31	147
Investment	30	218

Source: The authors.

Table 8 reflects that each of these keywords have been repeated at least 30 times. Since word 'governance' has been repeated the most (total occurrence: 516 times), it can be considered as preferred component of sustainability. Likewise, financial performance is the most preferred form of firm's performance. However, the top 10 keywords considering total link strength (TLS) are financial performance, corporate governance, corporate social responsibility, sustainability, finance, ESG, governance approach, sustainable development, firm performance, and industrial performance.

Keyword overlay visualisation (Fig. 10) demonstrates the commonly used keywords in the dataset represented by nodes of various colours and sizes, where the colour indicates the time-period of its usage and the size indicates the number of times it has been used. The larger the node, the greater is the presence of such keyword in the studies.



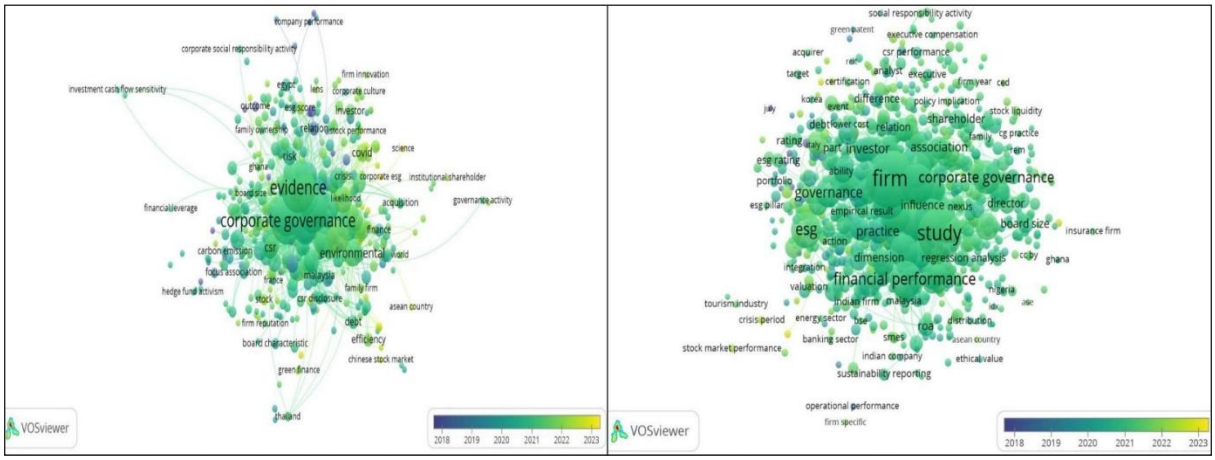
Source: The authors.

Fig. 10: Pictorial Representation of All Related Keywords Used in Previous Studies

Fig. 10 demonstrates that a significant number of related keywords, viz., corporate governance, corporate social responsibility, financial performance, ESG, sustainability, firm value, and sustainable development are the most popular search terms. It depicts a dense network of variables indicating a close relationship among recent studies. CSR performance, environment social governance (ESG), default risk, machine learning, green innovation, sustainable finance, stock price crash risk, market performance, and legitimacy theory are repeated keywords in the last few years, particularly 2022 and 2023.

Title and Abstract Based Co-Word Analysis

This section reveals the frequently used words in the titles and abstracts of articles in the sorted dataset. Fig. 11 displays network visualisation of the top 10% of a total of 2127 words in titles and the top 10% of a total of 16084 terms used in abstracts.



Source: The authors.

Fig. 11: Pictorial Representation of Words Frequently Used in Titles and Abstracts

While analysing the dataset, 22 clusters are formed based on frequently occurring words in the titles and 17 clusters based on words in abstracts.

The most prevalent terms in clusters based on titles are corporate governance, financial performance, and evidence. Fig. 11 suggests that since 2022 the most frequently used terms in the titles of related studies are ESG, social, COVID, environmental performance, pandemic, corporate ESG performance, ESG score, sustainability disclosure, stock, market performance, sustainability initiative, and green finance.

Further, the most often appeared words in the abstracts of related studies since later 2021 are ICT, stock market performance, climate, environmental pillar, ESG strategy, stock market reactions, corporate controversy, green firm, mitigating effect, labour investment efficiency, innovative firm, and ESG fund.

Content Analysis

Content analysis is a qualitative tool to conduct a subjective analysis for interpreting the content of text in a systematic manner to gain more comprehensive description (Moldavska & Welo, 2017). Since Tsai et al., (2020) propagated inability of Bibliometric analysis as a tool of review of literature, Content analysis has also been included in this study. The top 27 articles with minimum of 100 citations forms the dataset, from which 8 were excluded on being review articles or non-empirical. Content of remaining 19 articles has been thoroughly analysed to identify prominent theories, parameters of sustainability, and measures of performance, and results have been enlisted in Table 9, Table 10, and Table 11, respectively.

Table 9: List of Underlying Theories

Theories	Number of Papers	Preference Percentage
Stakeholder Theory	14	73.68
Resource Based View	5	26.32
Legitimacy Theory	4	21.05
Institutional Theory	4	21.05
Agency Theory	3	15.79
Affordability Theory	1	5.26
Trade Off Theory	1	5.26
Attribution Theory	1	5.26
Stakeholder Engagement Theory	1	5.26

Source: The authors.

Different theories have been used across the associated literature (Table 9), among which, Stakeholder Theory is the most prominent theory as the majority of papers (73.68%) have utilised it as an underlying theory.

Table 10: List of Parameters of Sustainability

Parameters of Sustainability	Number of Papers	Preference Percentage
Environment	16	84.21
Social	14	73.68
Governance	12	63.16
Sustainable Finance	1	5.26

Source: The authors.

Table 10 enlists different parameters of sustainability among different studies in descending order of their utilisation. It is evident that Environment is the most focussed parameters of sustainability.

Table 11: List of Measurements of Performance

Performance Measurements	Number of Papers	Preference Percentage
Tobin's Q	10	52.63
ROA	7	36.84
ROC / ROI	5	26.32
ROE	5	26.32
Change in Sales	4	21.05
Market to Book Ratio	3	15.79
Stock Returns	2	10.53
Cost of Debt	2	10.53
Cost of Equity	2	10.53
Dividend Yield	2	10.53
Net Profit	2	10.53
Cash holdings	1	5.26
Cash Flow to Total Capital	1	5.26
Debt to Total Capital	1	5.26
Return on Sales	1	5.26

Source: The authors.

Table 11 comprises different measures of the firm's performance. It indicates Tobin's Q is the most preferred measure of firm performance (used in around 52.63% papers). Thus, indicating firm value as preferred parameter of performance.

DISCUSSION AND CONCLUSION

Although the concept of sustainability is still in its nascent stages, it has gained significance over the last decade. An organisation must adopt sustainability and duly consider the interests of all stakeholders to be successful (Burhan & Rahmanti, 2012). It must make the necessary disclosures, be transparent and honest about its actions to improve its reputation, revenue and to bring about a positive societal change (Mittal et al., 2019). Therefore, it suggests an association between sustainability or related disclosures and organisation's performance. Many authors attempted to examine this relationship and posit the existence of positive relationship between these variables.

To the best of our knowledge, there is a lack of comprehensive review of associated literature. Therefore, it was deemed necessary to analyse the existing research to explore historical and contemporary patterns. To obtain an accurate depiction, bibliometric analysis and content analysis of relevant studies have been conducted, where former suggests a rise in the number of studies especially in the last eight years. Additionally, an attempt has been made to analyse the quantity and quality of published documents from various authors, journals, and countries. The results pinpoint conduction of more research in developed nations than in developing nations, with the United States conducting maximum studies. Co-word analysis suggests that corporate governance, CSR, and financial performance are frequently used terms in title, abstracts, and keywords of the assessed literature. Moreover, detailed content analysis clarifies 'environment' and 'market performance' are the most preferred parameters of sustainability and performance, respectively. Furthermore, few studies are focussing on innovative sustainability practices like green R&D (Lee & Min, 2015), green information technology (Przychodzen et al., 2018) and green supply chain (Khan et al., 2016). Thus, indicating growth in interest of scholars and researchers in the underlying area.

SCOPE FOR FUTURE RESEARCH

This study expects to provide a comprehensive view to future researchers and foster deeper understanding about key emerging areas in the business and financial sector now-a-days. The study pinpoints gaps to provide a direction for future research.

Since, studies contradict on investors' preference of sustainable businesses (Dhasmana et al., 2023; Bocken, 2015), it is suggested to conduct studies to analyse and justify their attitude towards such businesses. Since, majority of studies focused exclusively on environment dimension (Maheshwari et al., 2023; Gupta & Gupta, 2020), CSR (Wang & Sarkis, 2017) or ESG (Brooks & Oikonomou, 2018) as acceptable parameters of sustainability. Since, KPMG (2020) discussed sustainability regarding an inter-relationship among environment, social, governance, and sustainable finance,

it is recommended to future researchers to use broaden definitions of sustainability. Furthermore, only quantitative aspects of firm performance (accounting performance and market performance), where ROA (accounting performance) and Tobin's Q (market performance) are most preferred. Therefore, future researchers are suggested to utilise under-explored criteria of performance such as its non-financial components.

Moreover, risk (default risk and stock price crash risk) have been identified as the frequently occurring keywords, thereby, suggesting future researchers to further explore the relationship between sustainability and different types of risk along-with firm performance. Since, only a few studies attempted to investigate budding areas of sustainable practices. These can further be utilised as a main variable in studies and an attempt can be made to analyse whether such practices render any competitive advantage to the business. Thus, expand study by Mondal & Sahu (2023) on the impact of these green initiatives on firm performance.

Furthermore, limited use of variables like firm age (Abdi et al., 2022), gender diversity (Brinette et al., 2023), board composition (Al Homaidi et al., 2021), audit quality (Dakhli, 2022), and political connections (Almarayeh et al., 2022; Bose et al., 2021) have been observed in the sorted data. Future research may use these variables or identify more variables that may mediate or moderate the relationship between sustainability and performance.

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