



Article

Bibliometric Analysis of ESG and Financial Performance: A Global Perspective with a Special Focus on India and Future Research Directions

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How to cite this article:

Rakshit D *et al.* Bibliometric Analysis of ESG and Financial Performance: A Global Perspective with a Special Focus on India and Future Research Directions. *J Int Commer Law Technol.* 2025;6(1):1328–1339.

Received: 16-10-2025**Revised:** 27-10-2025**Accepted:** 12-11-2025**Published:** 03-12-2025

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Abstract: Implementing sustainable business practices in organizations is essential nowadays. Sustainability tries to balance between present and future generation needs, create long-term value for stakeholders and minimize risk for every business concern. Sustainability is a broader concept than ESG. Modern investors integrate sustainability and ESG dimensions into their decisions due to increasing regulatory compliance and rapid change in the business environment. The study tries to analyze the publications thereby revealing the scholarly impact, research quality and emerging trends through bibliometric analysis because no such bibliometric analysis is found that clearly and comprehensively portray the global perspective with reference to the Indian. In this study, we used data from Scopus database from 2010 to 2024. VOSviewer is one of the extensively used free software for bibliometric analysis on any research topic. It infers that extensive publication has been depicted in global perspective whereas as per Indian context it's an emerging issue and is evolving very fast. The study recommends futures researcher to search for diverse avenues in context to "ESG and Firm Performance".

Keywords— Sustainability, ESG, Bibliometric Analysis, Financial performance, India.

INTRODUCTION

ESG investing and the relationship between ESG and financial performance are significant topics in the present scenario (Wan et al., 2023). Companies are shifting their operations from profit maximization to long-term survival without harming society or the environment. Implementing sustainable business practices in organizations is essential nowadays. Sorsa & Bona-Sanchez (2024) showed that ESG factors gained extra attention from stakeholders after the post-COVID period. Sustainability seeks to balance the needs of present and future generations,

create long-term value for stakeholders, and minimize risk for every business concern. Sustainability is a broader concept than ESG. The key destination in today's business world is sustainability, and ESG is an important strategy to achieve it. Mehta & Raval (2023) revealed that stakeholders are gradually coercing businesses to adopt and implement sustainable business practices. ESG is considered one of the important determinants of companies' financial performance. Bai & Kim (2024) explored that business organizations can improve their financial position and performance

through ESG-related activities. A significant portion of corporate organizations began incorporating ESG into their financing and investment decisions as a strategy for sustainable business practices (Panko & Glova, 2024). Marzuki et al., (2023) found that a country can advance sustainability through a capital market that incorporates ESG factors into financing and investment decisions. Organizations can focus on CSR and ESG investments to support sustainable business practices. ESG management is a crucial tool for developing sustainability planning. Owusu & Ofori-Owusu (2024) noted that sustainability accounting is a rapidly emerging tool for integrating ESG and sustainability into companies' various activities.

To achieve sustainability goals, companies are improving the quality of their sustainability reports by providing more information about their activities and enhancing transparency among stakeholders. Sustainability report gained too much attention from stakeholders over the last decades, because it informs about the impact of the company's activities on the environment, social, and governance (Ellili, 2022). Yan et al., (2024) demonstrated that the Sustainable Development Goals can be achieved through ESG investing and ESG reporting. A significant gap exists between the adoption and implementation of sustainability reporting across countries (Paridhi & Arora, 2023). To meet stakeholders' demands and demonstrate transparency and accountability, most listed companies have begun publishing sustainability reports (Bosi et al., 2022). Developed countries have given more attention to ESG and sustainability-related research and publication (Kaura & Kumar, 2024). Common definitions and standard metrics are significant barriers to the adoption and implementation of sustainability reporting.

Our society exists within an environment, so threats to the environment result in indirect damage to society (Zhang et al., 2024). Climate change-related risks are increasing by the day, and many stakeholders are focusing on adopting sustainability strategies to mitigate them (Siao et al., 2022). Liu et al., (2024) provided comprehensive insights into various policies and regulations related to environmental issues. Business organizations may use ESG investments as a crucial risk-mitigation tool (Tiwari et al., 2023). Top-level management of public organizations has increased attention to the environmental disclosure items.

LITERATURE REVIEW

An increasing number of publications in this field signal importance in today's business practices (Sundarasan et al., 2025). Wan et al., (2023) identified present and future trends in ESG research. Gradually, the research topic is moving from investing to ESG Investing technology to green

technology and emissions to carbon emissions across the globe (Liu et al., 2024). Sustainable finance and climate finance are very close to ESG investment. Bajaj et al., (2022) found that ESG investing plays a pivotal role in assessing credit risk. Sustainable finance and ESG have gained more attention than corporate governance and SRI nowadays. Many organizations worldwide are focusing on sustainable finance rather than traditional finance to minimize various risks and achieve sustainable profits (Wang, et al., 2024). At present, sustainable finance is reshaping the capital market and influencing stakeholders' financing and investment decisions. Tiwari et al., (2023) showed the development of sustainable investment among various organizations and countries over time. Green finance is another concept closely related to ESG investing. Krastev & Krasteva-Hristova (2024) found that green finance plays a crucial role in supporting the development of renewable energy, energy efficiency, and sustainable growth worldwide. The UK, USA, Australia, and China are the leading countries of green financing research (Krastev & Krasteva-Hristova, 2024; Wang, et al., 2024; Yadav & Saini, 2023; Joshi & Dash, 2023). A few stakeholders believe the concept of CSR will fade as ESG gains prominence. Putzer & Posza (2024) found that both CSR and ESG are interlinked.

Some academics and researchers have begun to examine the relationship between ESG and financial performance. Researchers from developed countries have contributed more to this topic than those from developing countries. Friede et al., (2015), Velte (2017), and Chen & Xie (2022) evidenced a favorable linkage between ESG and firms' financial performance, whereas an adverse relation has been found between these two variables (Sachin & Rajesh, 2022; Garcia-Blandon et al., 2024; Zahid et al., 2022). A group of researchers also showed a mixed relationship between ESG and financial performance (Ahmed et al., 2021; Hasan et al., 2022; and Li et al., 2020).

Sustainable business practices are not a focus across all industries. Calciolari et al., (2024) showed that the pharmaceutical industry did not focus on publishing sustainability reporting, whereas the chemical industry did so rigorously. Not all ESG pillars are applied with the same weight across sectors. In the tourism industry, environmental factors are considered more important than social and governance factors (Putzer & Posza, 2024). Whereas European firms consider social and governance factors as very important rather than environmental factors (Passas et al., 2022). Legendre et al., (2024) showed that ESG influences overall management and operations in the hospitality industry, and stakeholders in this industry are beginning to consider ESG factors in their decision-making. Apart from profit-seeking organizations, nonprofit-seeking organizations have initiated adopting sustainability

strategies into their day-to-day activities. Kobylińska et al., (2024) reported that Bialystok University of Technology, an educational institution, took some initiatives to achieve the Sustainable Development Goals.

Modern investors integrate sustainability and ESG considerations into their decisions due to increasing regulatory requirements and rapid changes in the business environment. Gao et al., (2023) evidenced that stakeholders have given increasing attention to sustainability and ESG-related issues over the last few years. A link has been found between ESG and financial performance. Makarenko et al., (2022) demonstrated that the financial performance of agricultural companies in Ukraine increased significantly following the incorporation of ESG criteria into investment decision-making. Agribusinesses have increased their attention on sustainability and incorporated ESG factors into their business practices after the Paris Agreement in 2015 (Monteiro et al., 2023). Companies can use electricity generated from renewable energy to promote sustainable business practices. Leopizzi et al., (2023) reported that most electric utilities did not want to disclose sustainability-related matters. As research in the field of ESG disclosure, particularly related to Firm performance, surged massively after COVID-19, the exploration of the topic has become important. Thus, the study analyzes publications to reveal scholarly impact, research quality, and emerging trends through bibliometric analysis. Few studies, such as Marzuki et al., (2023), Pathan & Mohanty

(2024), Bai and Kim (2024), and Cunea et al., (2025), have conducted bibliometric analyses. However, none clearly and comprehensively present a global perspective with reference to India.

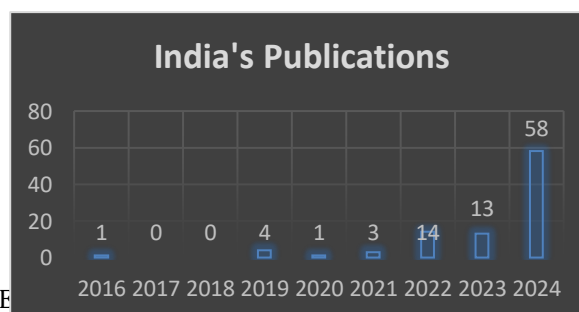
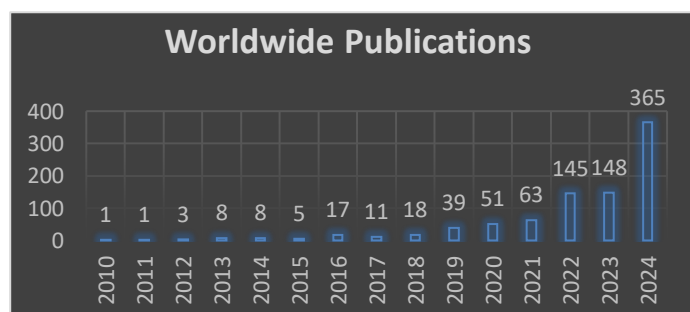
METHODOLOGY

Bibliometric analysis provides a comprehensive quantitative framework for analyzing the published academic literature using statistical methods and network models. It examines citation patterns and frequencies, referencing, publication information, keywords, and abstracts to reduce subjectivity and bias. VOSviewer is one of the most widely used free software tools for bibliometric analysis of any research topic. A graphical representation of a bibliometric analysis makes a topic easier for all stakeholders in a research area to understand. In addition to the VOSviewer tool, we used Excel to prepare some tables and figures for this study. The Scopus database is a very reliable and important source of data on ESG-related topics. In this study, we used data from the Scopus database from 2010 to 2024. The actual keywords search in "TITLE-ABS-KEY" search tab in the following way: ("ESG" OR "Environmental, Social and Governance") AND TITLE-ABS-KEY ("Financial Performance") AND PUBYEAR > 2006 AND PUBYEAR < 2025 AND (LIMIT-TO (SUBJAREA, "BUST") OR LIMIT-TO (SUBJAREA, "ECON") OR LIMIT-TO (SUBJAREA, "SOCI") OR LIMIT-TO (SUBJAREA, "ARTS") OR LIMIT-TO (SUBJAREA, "MULT")) AND (LIMIT-TO (LANGUAGE, "English")).

RESULTS AND DISCUSSION

Publication Trend

This figure represents the publication trend in the research area of ESG and Financial performance during 2010 to 2024. According to the Scopus database, worldwide publications on ESG and Financial Performance began in 2010. A few articles were published up to 2017, but an increasing trend has been observed since 2018, with 365 articles published in 2024 in this area. This consistent upward trend indicates a growing interest among researchers in recent times. At the same time, the first article on ESG and Financial performance in India was published in 2016. An upward trend has been observed in India since 2022.



Co-authorship

Influential Authors:

We identified eminent authors using VOSviewer, based on document and citation data. Table 1 represents the top 10 global and Indian leading authors in ESG and Financial Performance. The most eminent authors, as per documents, are Baullay, a (8 documents), followed by Hussainey, Khelad (6 documents), Chouaibi, Jamel (5

documents) and Camilleri, Mark (5 documents), and, when we consider eminent authors based on citations, Managi, Shunsuke, ranked 1st with 663 citations, followed by Velte, Patrick (636 citations) and Sarkis, Joseph (613 citations).

Indian authors have also made remarkable contributions to this research area. Dasgupta, Ranjan, Saini, Neha, Singhanian, Monica, and Kashiramka, Smita, ranked first with three publications. Let us look at Indian authors represented by citations. We see 221 citations by Dasgupta, Ranjan, followed by Saini Neha (122 citations), Dangal R C., Pandey Priyanka, and Sharma Preeti (121 citations) in this research area.

Table 1: Most prominent authors publishing in ESG and Financial Performance

Global Author				Indian Author			
Author	Citations	Author	Documents	Author	Citations	Author	Documents
managi, shunsuke	663	buallay, amina	8	dasgupta, ranjan	221	dasgupta, ranjan	3
velte, patrick	636	hussainey, khaled	6	saini, neha	122	saini, neha	3
sarkis, joseph	613	chouaibi, jamel	5	dangwal, r.c.	121	singhanian, monica	3
wang, zhihong	613	camilleri, mark anthony	5	panday, priyanka	121	kashiramka, smita	3
hussainey, khaled	607	velte, patrick	4	sharma, preeti	121	dangwal, r.c.	2
albitar, khaldoon	464	li, xiaoni	4	singhanian, monica	83	panday, priyanka	2
bruna, maria giuseppina	396	bhaskaran, rajesh kumar	4	kashiramka, smita	69	sharma, preeti	2
dorfleitner, gregor	364	woodside, arch g.	4	roy, arup	56	roy, arup	2
lee, michael t.	341	bax, karoline	4	hasan, iram	51	hasan, iram	2
chouaibi, jamel	319	paterlini, sandra	4	singh, shveta	51	singh, shveta	2

Most Prominent Organisations:

Our study found that 1738 active organizations published 883 articles on ESG and Financial performance. Table 2 demonstrates the top 10 Indian and global organizations based on documents and citations. Ahlia University, Manama, Bahrain, published the seven most important articles on ESG and Financial Performance. The College of Business and Finance from Ahlia University also published four important articles on our study topic.

Two hundred organizations contributed to publishing 94 articles on ESG and Financial Performance in Indian aspects. Jindal Global Business School has contributed the highest number of published articles in India. It is observed that the top 10 Indian organizations published 15 articles, representing 15.96% of the total articles on our study topic.

Table 2: Most prominent organisations publishing articles on ESG and financial performance

Worldwide		Indian Organisation	
Organisation	Documents	Organisation	Documents
Ahlia University, Manama, Bahrain	7	Jindal Global Business School, Sonipat, India	3
College of Business and Finance, Ahlia University	4	Indian Institute of Management Ranchi, Ranchi, India	2
School of Business, Innovation and Sustainability, Halmstad University	3	Department of Commerce, Maharshi Dayanand University, Rohtak, India	2
Brunel University London, Uxbridge, United Kingdom	3	Department of Commerce, Tezpur University, Tezpur, India	2
Portsmouth Business School, University of Portsmouth, Hampshire, UK	2	Goa Institute of Management, India, Sanquelim, Poriem, Sattari, Goa	1

Skema Business School - University Côte D'azur,	2	Department of Commerce, HNB Garhwal University, Srinagar Garhwal, India	1
University of Sfax, Sfax, Tunisia	2	Dit University, Dehradun, Uttarakhand, India	1
University of Nevada, Las Vegas, Lee Business School	2	Shoolini University of Biotechnology and Management Sciences	1
Department of Corporate Communication, Faculty of Media and Knowledge Science, University of Malta	2	Great Lakes Institute of Management, Haryana	1
Department of Business Management, Universitat Rovira I Virgili, Vilafranca del Penedès, Catalonia, Spain	2	Abv Indian Institute of Information Technology And Management, Gwalior, India	1

Country:

Country	Citations	Country	Documents
Germany	4128	India	94
United Kingdom	3589	China	89
United States	3143	United States	82
Italy	2624	United Kingdom	73
China	2199	Italy	73
France	1944	Spain	56
Spain	1881	Malaysia	50
Australia	1435	France	41
India	1407	South Korea	39
Malaysia	879	Australia	34

India, China, the US, the UK, and Italy are the leading countries in document publications on ESG and Financial Performance worldwide. 411 documents out of a total of 883 were published by the top 5 countries from 2010 to 2024. The top 10 countries, as per publications and citations, are listed below. India published 94 documents, the highest number in this area during the study period. China, the US, the UK, and Italy are the leading countries in publishing documents on this topic, whereas Germany ranked first with 4128 citations. It indicates that many authors cite Germany's publications due to the more relevant documents in the research area.

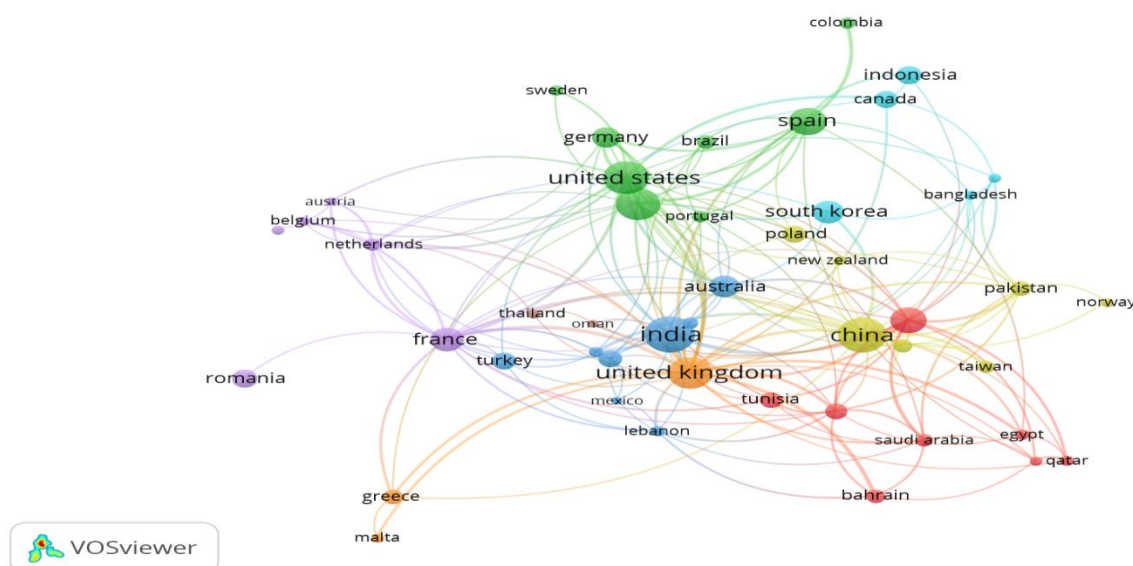


Figure 2: The country co-authorship network of ESG and financial performance

Co-occurrence

The co-occurrence network of keywords identifies and visualizes keywords that co-occur more frequently in the literature. Mainly, bibliometric analysis analyzes three types of keywords, i.e., authors' keywords, indexed keywords and a combination of both.

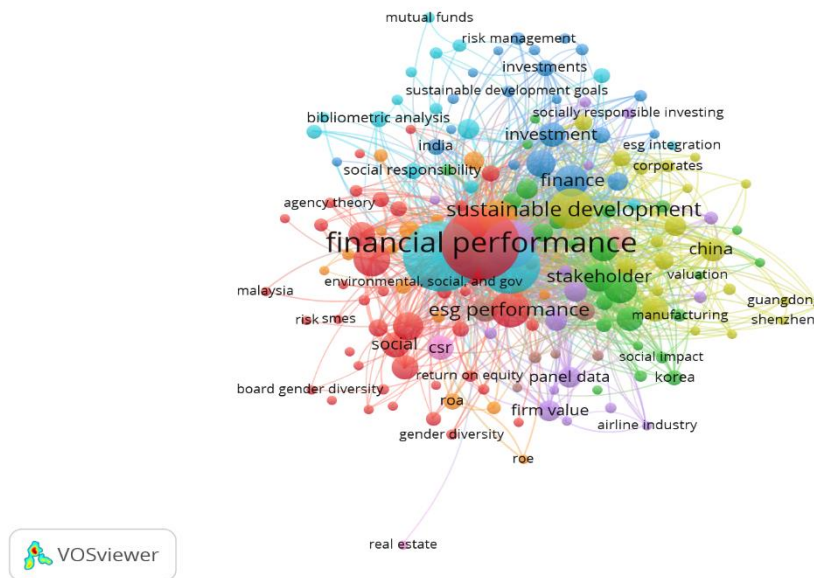


Figure 3: Global landscape of the authors keywords in ESG and financial performance

Figures 3 and 4 present the network maps of both authors' keywords for the Global and Indian literature analyses. The authors of publications explicitly identify their keywords, whereas database-generated index keywords are generated algorithmically from an article's content (Bascur, et al., 2023). The network of keywords defined by colours represents a particular set of clusters or common linkages. It is significant because this type of analysis depicts the development in the respective research fields and the linkages within the research area. It is a scientific representation of existing literature. These keywords were obtained from the articles' titles and abstracts.

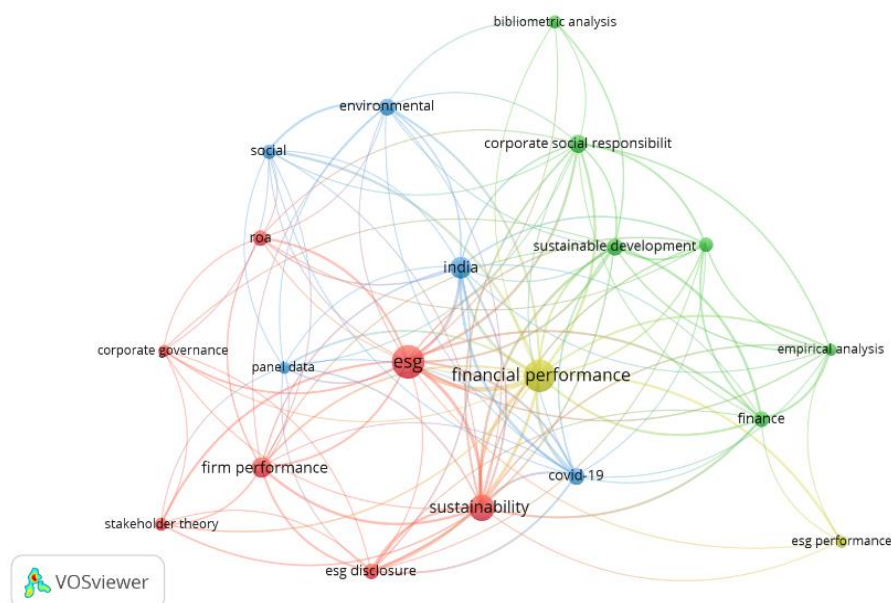


Figure 4: Indian landscape of the authors keywords in ESG and financial performance

In both the Global and Indian scenarios, the co-occurrence of the words “financial performance” and “ESG”. In the global scenario, the co-occurrence of the keyword is higher than in the Indian scenario. In the global literature, keywords that co-occur or recur are closely connected to one another, thereby forming strong clusters. Thus, it aligns with well-established literature and prominent research. In the Indian scenario, we see a scattered network with very few keywords. The clusters formed are also diverse, thereby depicting early stages of research and a less cohesive research landscape.

Table 4: Worldwide keywords co-occurrence of ESG and financial performance

All Keywords		Authors Keywords		Indexed Keywords	
Keywords	Occurences	Keywords	Occurences	Keywords	Occurences
financial performance	298	esg	290	sustainability	70
esg	290	financial performance	283	sustainable development	69
sustainability	182	sustainability	134	governance approach	54
corporate social responsibility	135	corporate social responsibility	105	corporate social responsibility	54
sustainable development	97	esg performance	77	finance	53
esg performance	77	environmental	68	stakeholder	45
corporate financial performance	69	corporate financial performance	60	industrial performance	39
environmental	68	corporate governance	58	financial performance	37
corporate governance	61	sustainable development	45	performance assessment	36
finance	59	social	40	financial system	35

Table 5: Indian keywords co-occurrence of ESG and Financial performance

All Keywords		Author Keywords		Indexed Keywords	
Keyword	Occurance	Keyword	Occurance	Keyword	Occurance
esg	37	esg	37	sustainable development	7
financial performance	34	financial performance	32	sustainability	6
sustainability	23	sustainability	19	finance	6
india	15	india	13	empirical analysis	5
firm performance	14	firm performance	13	financial performance	5
corporate social responsibility	11	corporate social responsibility	10	india	4
covid-19	10	environmental	10	stakeholder	4
sustainable development	10	roa	9	corporate social responsibility	4
environmental	10	esg disclosure	8	regression analysis	4
finance	9	covid-19	7	covid-19	3

Citation & Bibliographic Coupling

Citation analysis has been conducted to identify the major publications and their authors, and to examine their associations. It helped us identify the leading works of authors and rank them by the number of documents and citations. The documents with citation are presented in Table 6, which characterized the most significant ten documents both globally (Left) & in Indian context (Right) are ranked such as friede (2015) with 1621 citations followed by xie (2019) with 577 citations whereas in Indian context, dasgupta (2022) with 165 citations followed by sharma (2020) with 119 citations.

Table 6: Prominent Documents with Citation both Worldwide & Indian Scenario

Rank	Worldwide		India	
	Document	Citations	Documents	Citations

1	friede (2015)	1621	dasgupta (2022)	165
2	xie (2019)	577	sharma (2020)	119
3	duque-grisales (2021)	491	sachin (2022)	74
4	velte (2017)	443	rao (2023)	74
5	nollet (2016)	411	chelawat (2016)	71
6	wang (2017)	393	vyoti (2021)	66
7	chen (2022b)	387	hasan (2022)	51
8	tan (2022)	328	kalia (2023)	49
9	manita (2018)	316	sinha ray (2023)	48
10	yu (2018)	311	saini (2022b)	46

Bibliographic Coupling reveals a significant disparity between worldwide and Indian research impact. Further, there is a substantial citation gap between worldwide and Indian publications: the worldwide average is 527.8 per document, whereas the Indian average is 76.3 per document. Therefore, the impact is 6.9 times higher for worldwide publications.

Indian publications depict more recent research activities, with 60% of the top documents published in 2022-23, whereas worldwide publications reveal a more distributed pattern.

Table 7: Prominent Sources with Citation and no.of documents published Worldwide

Rank	Source	Citations	Source	Documents
1	sustainability (switzerland)	2495	sustainability (switzerland)	87
2	business strategy and the environment	2447	corporate social responsibility and environmental management	28
3	journal of sustainable finance and investment	2241	journal of sustainable finance and investment	21
4	journal of cleaner production	1250	journal of cleaner production	19
	journal of business ethics	1018	business strategy and the environment	18
5	corporate social responsibility and environmental management	749	sustainability (switzerland)	15
6	journal of global responsibility	587	journal of risk and financial management	14
7	technological forecasting and social change	583	finance research letters	12
8	journal of asset management	456	business strategy and development	10
9	environment, development and sustainability	447	springer proceedings in business and economics	10

Table 8: Prominent Sources with Citation and no.of documents published in India

Rank	Source	Citations	Source	Documents
1	finance research letters	239	business strategy and development	4
2	environment, development and sustainability	149	vision	4
3	international journal of disclosure and governance	119	environment, development and sustainability	3
4	journal of global responsibility	86	journal of global responsibility	3
5	asian journal of business ethics	71	international journal of disclosure and governance	3
6	sustainable development	66	finance india	3
7	journal of cleaner production	59	australasian accounting, business and finance journal	2
8	australasian accounting, business and finance journal	48	corporate social responsibility and environmental management	2
9	applied economics	48	finance research letters	2

10	resources, conservation and recycling	46	journal of cleaner production	2
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Co-Citation

Cited Authors:

It means that when we work on a topic and use another author’s name in our work, it is because of their contribution to that topic. Serafeim, G., Freeman, R. E., Busch, T., Ioannou, I., and Buallay, A. are prominent authors in the field of ESG and Financial performance. These authors made a significant contribution in this area, which was very helpful to Indian and global authors at the time of their work.

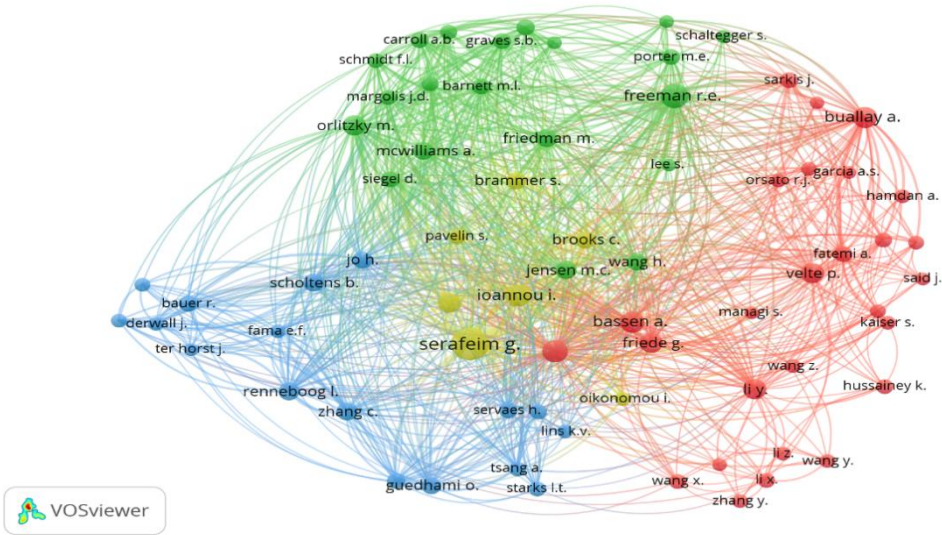


Figure 5: Cited authors network in ESG and Financial performance

Cited Source:

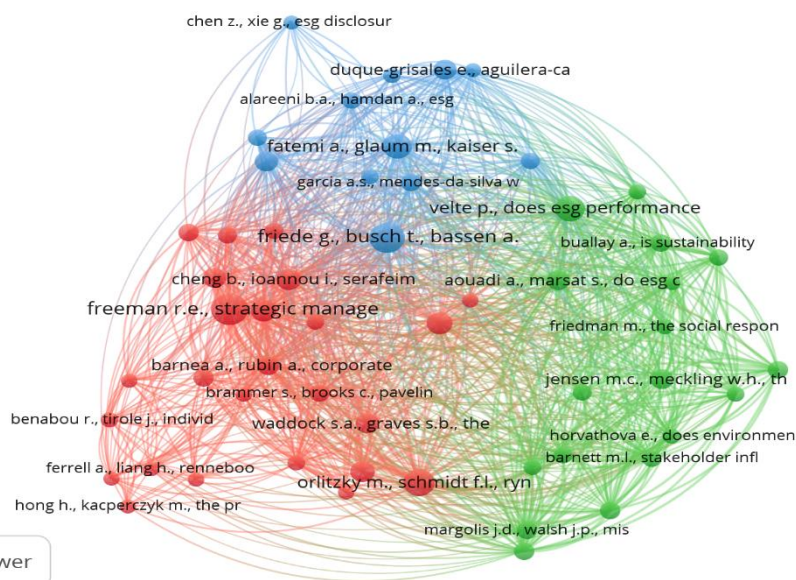
Journal co-citations indicate the linkage and relatedness among the journals in a research area. A shorter distance between two journals indicates greater relatedness of the topics. The journals “Journal of Business Ethics”, “Sustainability”, “Business Strategy and Management”, and “Strategic Management Journal” are among the most cited globally in the areas of ESG and financial performance, and in the Indian context.

Table 9: Top 10 cited sources from worldwide and Indian prospect

Worldwide Cited Source		Indian Cited Source	
Source	Citations	Source	Citations
Journal of Business Ethics	2320	Journal of Business Ethics	315
Sustainability	1745	Sustainability	232
Business Strategy and the Environment	1111	Business Strategy and the Environment	188
Strategic Management Journal	1011	Journal of Cleaner Production	145
Journal of Cleaner Production	937	Strategic Management Journal	118
Corporate Social Responsibility and Environmental...	834	Corporate Social Responsibility and Environmental...	101
Journal of Financial Economics	751	Finance Research Letters	73
J. Bus. Ethics	647	Journal of Financial Economics	63
Academy of Management Review	489	Social Responsibility Journal	50
Journal of Corporate Finance	411	Journal of Global Responsibility	49

Cited Reference:

Cited references represent the most related papers that are more relevant to a particular study. It refers to the acknowledgment given by an author to another's works. Figure 6 shows the references cited in our study area. It is observed that the largest nodes are Freeman, R.E., Friede, G., Orlitzky, M., Velte, P., and Fatemi, A. These are among the original publications in the field of ESG and financial performance. Both Global and Indian authors have acknowledged the work of those authors in their studies.



Future Research Directions in ESG

We have identified specific gaps in ESG research through bibliometric analysis, which will be helpful to researchers and academicians in future investigations. The following are some of the research directions in this field:

- I. Most of the studies in ESG research have explored the relationship between ESG and financial performance, so academicians can concentrate on other parameters to identify the impact of ESG on cost of capital and dividend decisions.
- II. Another uncovered area in this field is to identify the impact of ESG in various sectors. A comprehensive sector or industry-wide study needs to be conducted in the future.
- III. Some researchers have witnessed that ESG firms enjoy monetary benefits than non-ESG firms. Still, no significant research has been found on the impact of ESG on firms' non-financial activities, i.e., productivity and employee retention.
- IV. A comparative analysis of the short-term impact and long-term impact of ESG on firms' performance is required.
- V. ESG reporting or disclosure is not mandatory for all countries. An extensive comparative study of voluntary and mandatory ESG reporting is attracting the attention of stakeholders worldwide.
- VI. Measuring the impact of ESG on a firm's value and stock prices on the day of ESG-reporting is essential. It can be another area for future research.
- VII. Advanced methodologies like DID approaches, Granger causality tests, and instrumental variables approaches are to be used in this area instead of SLRM, due to the substantial methodological implications and robust estimates.
- VIII. An empirical study can be conducted on the calculation of the ESG score through AI, whether it gives a more prominent and significant score than traditional methods or not.
- IX. ESG research has received extensive attention in developed countries; however, researchers have paid inadequate attention to developing and underdeveloped countries. Therefore, a cross-country analysis or comprehensive research can be done in emerging economies.

Conclusion

In this study, we extracted relevant papers from the prominent publication database, Scopus. We analysed publications spanning from 2010 to 2024

using Vosviewer to derive the co-authorship, co-occurrence, citation-bibliographic coupling, and co-citation analysis. It suggests that extensive publication is depicted in a global perspective,

whereas in the Indian context, it is an emerging issue that is evolving rapidly. Citation & bibliographic coupling analysis of publications showed an increasing pattern from 2021 in the global context, and the trend is followed in India only after the COVID-19 period. Co-authorship analysis revealed that India published the most documents among countries, yet ranked 10th in citations; this suggested a lack of quality and comprehensive research in the field, while Germany ranked first in citations. Keyword co-occurrence analysis showed a lack of diversity in research on ESG and Firm performance, both globally and in the Indian context, as the two revealed similar keyword patterns.

So, this bibliometric analysis serves as a basis for a systematic literature review and maps the global context, with reference to India, to help future researchers. The study recommends that future researchers search for diverse avenues in the context of “ESG and Firm Performance.”

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