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ESG Disclosure Research: A Bibliometric Analysis of Sustainability Reporting Trends

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ABSTRACT

The importance of Environmental, Social, and Governance (ESG) disclosure has been gaining prominence owing to the growing sustainability concerns across the globe. The objective of this study is to analyze the intellectual structure, evolution of research, and trends emerging in ESG disclosure literature. Data have been gathered from the Scopus database on the basis of the use of suitable keywords for ESG disclosure, sustainability reporting, and corporate sustainability. Bibliometric analysis techniques such as publication trend analysis, citation analysis, keyword co-occurrence analysis, thematic evolution analysis, density visualization, and collaboration network analysis have been performed using VOSviewer. Results show that there is a notable trend in the area of ESG disclosure literature owing to increased adoption of sustainability standards and regulations as well as sustainable investments. It has been found that the major themes in the area of ESG disclosure include sustainability reporting, ESG, sustainable development, corporate governance, and ESG performance. Furthermore, recent research trends have shifted toward emerging issues such as ESG regulation, greenwashing, sustainable finance, firm value, and investor responses. Citation analysis identifies mandatory sustainability reporting, ESG performance, governance mechanisms, and the financial implications of ESG disclosure as the primary intellectual foundations of the field. Collaboration analysis demonstrates that ESG disclosure research has expanded globally, with significant contributions from countries such as the United States, India, Italy, Indonesia, and European nations. This study contributes to the ESG literature by mapping the current research landscape, identifying influential contributions, and highlighting future research opportunities related to ESG standardization, reporting credibility, digital sustainability reporting, and sustainable corporate strategies.

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1. INTRODUCTION

In the past few decades, environmental, social, and governance (ESG) concerns have risen from being secondary factors in business reporting to being primary factors used for evaluating investment opportunities and engaging stakeholders [1], [2]. The growing awareness of climate change, social inequality, and governance problems has compelled corporations and regulatory authorities to include sustainability in their mainstream reporting practices [3]. ESG reporting is therefore a process through which businesses can report on both financial and non-financial risks and opportunities. This phenomenon is linked to increased expectations from society that companies should be transparent, ethical, and responsible amid issues such as environmental degradation, social problems, and market misbehavior [4], [5].

The development of sustainability reporting standards and guidelines further serves to demonstrate the institutionalization of ESG disclosure processes. The establishment of various guidelines, such as GRI, SASB, and TCFD frameworks, attempts to create common standards for reporting elements and increase comparability [6]. Such frameworks provide companies with an opportunity to consistently disclose ESG information in regard to environmental performance, social capital, human rights management, and governance. The use of such tools by different organizations around the world demonstrates a new era in which ESG reporting has been institutionalized as a part of the regulatory framework and voluntary process [7].

However, despite the evolution of various frameworks, empirical studies show significant variability in terms of the level and quality of ESG disclosure between companies, sectors, and regions. Companies with multinational operations located in advanced economies have higher disclosure levels than small businesses or companies operating in emerging markets [8], [9]. There are also sectoral factors impacting the level of ESG disclosure: more environmentally risky sectors (energy, materials) face increased transparency due to higher scrutiny and hence have more extensive sustainability reports [10], [11]. In addition, there are expectations from stakeholders on the part of investors and regulators and even civil society organizations for companies to improve their disclosure.

There have been many academic studies carried out on ESG disclosures due to the emergence of these practices within firms as well, since there have been varied scholarly interests ranging from normative theory, empirical evaluation and the effect of institutions on firm's decision to disclose information. According to reviews conducted in sustainability reporting literature, the number of researches on ESG subjects has increased exponentially, showing a substantial increase in the academic attention being paid to the field of non-financial reporting and corporate sustainability [12]. Bibliometrics are methods used for the analysis of quantitative aspects of scientific articles such as citation patterns, keyword co-occurrence and theme evolution, and give an idea of the development and the structure of ESG studies [13].

The use of ESG in investment decision-making process also boosts scientific and professional interests in ESG. The growing interest of institutional investors to consider ESG criteria in their portfolio analysis and risk evaluation is based on the assumption that sustainability practices of good quality may be linked to the company's better performance and lower risks [14]. Therefore, studies dedicated to the investigation of the relationship between ESG quality, company's performance, and market valuation are gaining popularity; and, therefore, providing more knowledge on the influence of sustainability reporting on capital allocation and company valuation [15], [16].

In spite of the rising body of research on ESG disclosures, there persists a gap in the systematic mapping, categorization, and synthesis of sustainability reporting trends. Literature reviews conducted thus far are primarily descriptive and narrow in scope, not adequately reflecting the dynamism and interrelationships existing within the field. Furthermore, the fast proliferation of new standards and innovations (such as ESG data analytics and integrated reporting) in sustainability reporting has outrun conventional review techniques, making it difficult to measure intellectual development and detect research fronts. Consequently, there exists a lack of a systematic bibliometric assessment that would map the evolution, themes, and significant contributions made to ESG disclosure research. This paper seeks to fill in the existing research gap by conducting a bibliometric analysis of ESG disclosure research aimed at discovering its growth trends, themes, influential researchers and papers, as well as future research directions in sustainability reporting.

2. METHODS

For this research, the bibliometric methodology will be used to conduct a systematic analysis of the dynamics and trends in studies of ESG disclosure. Bibliometrics is a quantitative method that evaluates the scientific literature through the study of citation relations, networks of collaborations, and co-occurrence of keywords, which allows analyzing the intellectual map of the scientific field [13]. Such an approach helps to identify prominent authors, journals, and research communities, as well as track the development of the scientific areas over time. With the help of bibliometrics, this research will provide an objective overview of the field of sustainability reporting.

In order to carry out research on ESG disclosure, bibliometric methodology will be applied to conduct a systematic analysis of trends and dynamics in ESG disclosure research. Bibliometrics is a quantitative approach for assessing scientific literature based on citation relations, collaboration networks, and keyword co-occurrence, which enables researchers to analyze the intellectual map of a particular scientific field [13]. The use of such a methodology makes it possible to detect key scientists, journals, and research communities and track their evolution in the field. Bibliometric analysis of the field of sustainability reporting will make it possible to obtain an objective assessment of the field under discussion.

In conducting the data analysis and visualization, the software known as VOSviewer was used. This software can be used in the creation of maps for co-authorship, co-citations, and keyword co-occurrence maps, making it possible to determine research clusters, thematic evolution, and most important articles in that area [17]. The study involved mapping of authorships, institution networks, country networks, and visualization of the density of keywords.

3. RESULTS AND DISCUSSION

3.1 Keyword Co-Occurrence Network

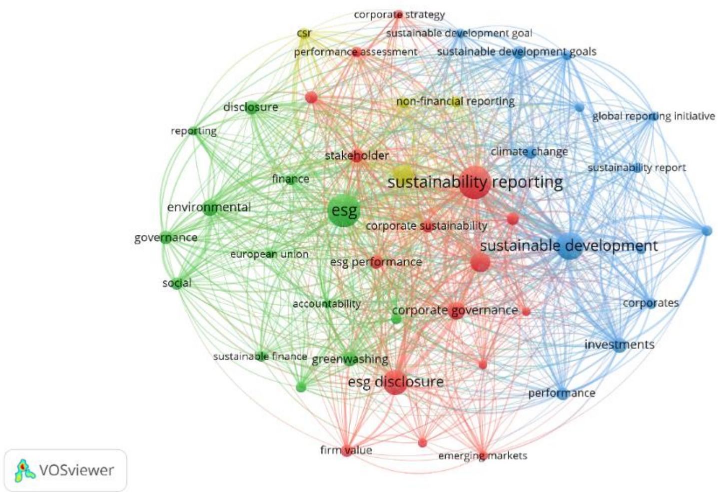

Figure 1. Network Visualization
Source: Data Analysis Result, 2026

The keyword co-occurrence network of ESG disclosure studies is shown in Figure 1. This figure reflects the intellectual structure and relationship network between frequently used keywords within the literature of sustainability reporting. Each node represents the frequency of keyword occurrence, and the line connecting the nodes shows the strength of the relationship between the keywords. From the network, it can be seen that the study of ESG disclosure is highly interrelated with the general literature on sustainability reporting, sustainable development, corporate governance, and corporate responsibility. The high degree of connectivity shows that ESG disclosure is now a multidisciplinary research area.

From the central theme of "sustainability reporting," it is evident that sustainability reporting is one of the prominent themes among ESG disclosures research. Sustainability reporting has a strong link with key concepts like sustainable development, GRI, non-financial reporting, corporate sustainability, and stakeholder theory. This is indicative of the fact that ESG disclosure has traditionally emerged out of the wider trend of sustainability reporting, wherein firms use sustainability reporting to report their environmental, social, and governance information in order to make themselves more transparent and accountable.

The green cluster includes keywords such as ESG, environmental, social, governance, disclosure, reporting, accountability, and greenwashing. These keywords belong to the research line that focuses on the fundamental elements of ESG disclosure. It is evident from the above-listed keywords that the researchers are concerned with how much an organization communicates its environmental and social responsibility via reporting systems. The appearance of the keyword "greenwashing" as one of the keywords shows that researchers' attention is increasingly turning towards the reliability and authenticity of ESG information.

The red cluster consists of research related to corporate performance, governance, and financial issues of ESG disclosures. Key words like ESG performance, corporate governance, firm value, emerging markets, stakeholders, and corporate sustainability show that numerous articles examine the link between ESG and its effects. Such a cluster implies that in addition to being a sustainable activity, ESG disclosure becomes a tool that can have an impact on the company's financial situation through improving investor confidence, corporate reputation, competitive advantage, and overall financial performance. The link between ESG disclosure and firm value reveals the increasing interest in the way sustainability information impacts financial markets.

The blue cluster focuses on the theme of global sustainability which includes themes such as SDGs, climate change, investments, corporations, and global reporting initiatives. This theme shows the increasing link between ESG reporting and global sustainability as well as the responsible investment movements. The occurrence of terms like climate change and sustainable finance suggests that the scope of recent ESG research has been broadened from just corporate reporting to sustainability themes.

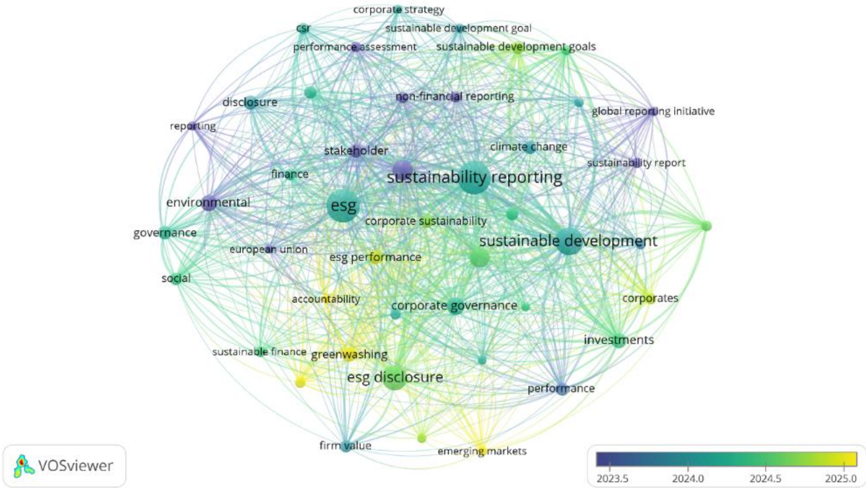

Figure 2. Overlay Visualization
Source: Data Analysis Result, 2026

Figure 2 illustrates the temporal evolution of ESG disclosure research themes, where colors represent the average publication year of keywords. The color gradient indicates the transition of research attention from earlier themes (blue-purple) toward more recent topics (yellow-green). The map shows that ESG disclosure research has developed from traditional sustainability reporting concepts toward more contemporary discussions related to ESG performance, corporate governance, sustainable finance, and corporate value creation. The central positioning of keywords such as “ESG,” “sustainability reporting,” and “sustainable development” demonstrates their continued importance as foundational concepts connecting various research streams.

In this case, the early research topics, denoted by dark blue blocks, are mostly linked to sustainability reporting, Global Reporting Initiative (GRI), non-financial reporting, stakeholder theory, and corporate sustainability. These topics demonstrate the early academic interest in the area of sustainability reporting, which is connected with the importance of transparency and accountability, as well as sustainability reports as means of communication between firms and their stakeholders. However, in time, the direction of the research changed to more strategic aspects, including such topics as ESG disclosure, ESG performance, corporate governance, firm value, investments, and greenwashing. It indicates that academic interest has been directed to the research of ESG disclosure in relation to its impact on company reputation and financial performance.

The latest research trends, identified with the use of yellow-green keywords, include new developments in the area of ESG disclosure, sustainable finance, greenwashing, corporate governance, and linking ESG with business strategy. The emergence of concepts like greenwashing implies an increasing concern about the credibility, accuracy, and assurance of sustainability data. In addition, the link between ESG disclosure, firm value, and investments demonstrates the growing significance of ESG data in the capital market.

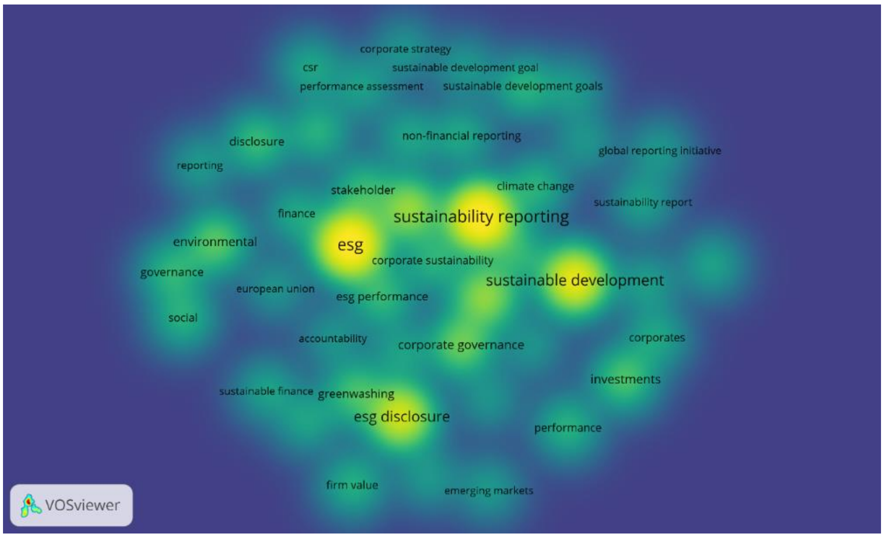

Figure 3. Density Visualization
Source: Data Analysis Result, 2026

The illustration shown in Figure 3 demonstrates the focus of themes within ESG disclosures research. The level of brightness of each area of the illustration represents the frequency of the occurrence of keywords in the literature review, where the yellow area is associated with the most frequently researched themes, and the darker area with the least concentration of themes. It is apparent from the illustration that the highest concentrations of themes are focused on "ESG," "sustainability reporting," and "sustainable development" themes, which represent the core knowledge base of the research.

From this visualization, there is also evidence of a number of interrelated research fields that are associated with the main themes. The keywords ESG disclosure, ESG performance, corporate governance, stakeholder, greenwashing, sustainable finance, and firm value are some examples of developing research fields that investigate the significance of sustainability reporting both strategically and economically. The inclusion of greenwashing and sustainable finance as new fields of study implies growing attention among academics on the veracity of ESG reports.

3.2 Co-Authorship Analysis

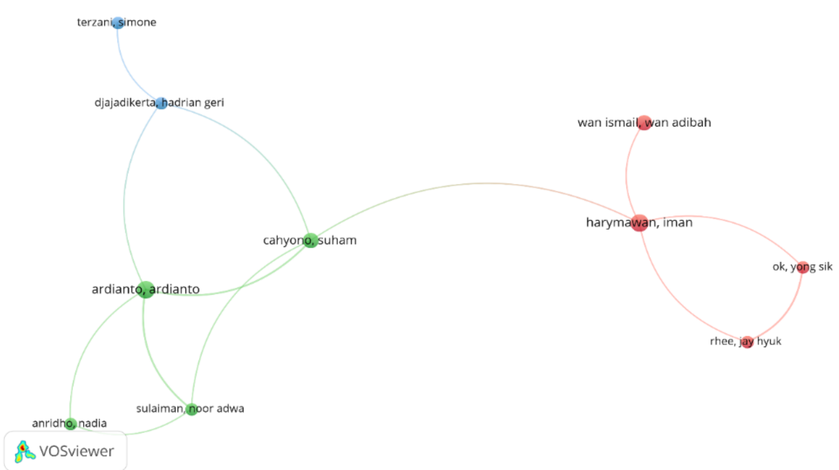

Figure 4. Author Visualization
Source: Data Analysis Result, 2026

The co-authorship network of researchers from the ESG disclosure literature is shown in Figure 4, which shows the collaboration pattern of the research and relationship between the authors. The co-authorship network shows many different collaborations in clusters that are shown using different colors, which shows that there are many research teams doing research on ESG disclosures and not just one team. The green cluster is the largest cluster that involves researchers like Ardianto, Cahyono, Sulaiman, and many other researchers, which shows that there is a fairly good research relationship among them and that they have done many co-publications together. The visualization also shows smaller and more isolated collaboration groups, such as the blue cluster involving Terzani and Djajadikerta, suggesting limited but established academic cooperation. The presence of separated clusters indicates that ESG disclosure research is still characterized by fragmented scholarly networks, where researchers often collaborate within specific institutional or regional groups.

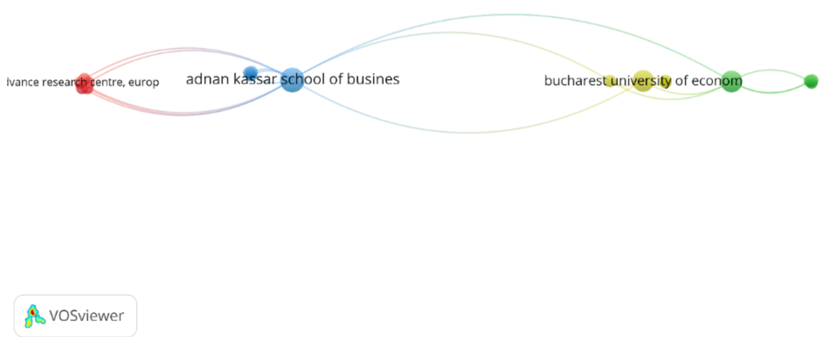

Figure 5. Institution Visualization
Source: Data Analysis Result, 2026

Figure 5 represents the institutional collaboration network in ESG disclosure research, reflecting links between various academic institutions through coauthoring networks. This collaboration network demonstrates that there are a number of institutions which participate in ESG disclosure research, however, these institutions have rather modest but existing relationships with each other. The Adnan Kassar School of Business is the central institution in this network, functioning as a link between various research teams, including cooperation with institutions such as the Advance Research Centre, Europe and Bucharest University of Economic Studies. The lines between the institutions demonstrate the existence of research collaboration, whereas node sizes denote the importance of each institution.

From this visualization, it becomes clear that institutional cooperation in the area of ESG disclosure research is still relatively fragmented within certain academic networks, rather than creating an integrated global network. The relationship between Adnan Kassar School of Business and Bucharest University of Economic Studies shows cross-institutional cooperation, whereas the small nodes show emerging or occasional collaborators. It thus follows that research in ESG disclosures has been gaining momentum on an international scale but there is still room for increased cooperation between universities, research centers, and multi-disciplinary institutions.

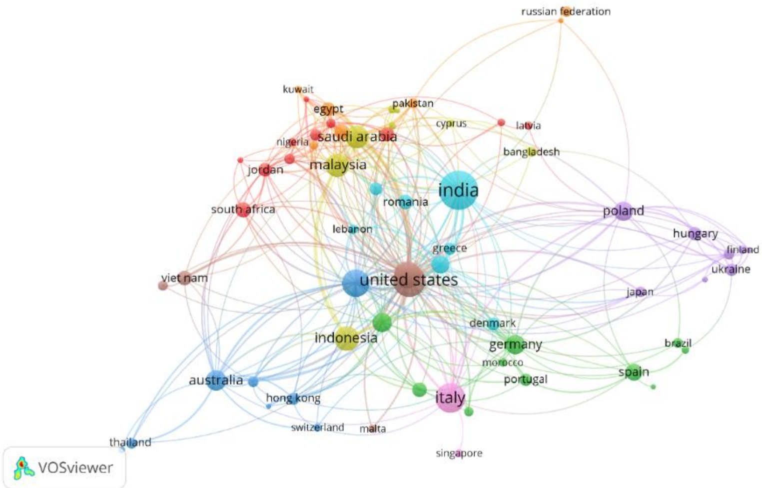

Figure 6. Country Visualization
Source: Data Analysis Result, 2026

Figure 6 is the international collaboration network map of the ESG disclosure research. It demonstrates the network of collaboration among different countries through the process of co-authoring of research papers. The sizes of the nodes represent the extent of the research contribution or the amount of publications by the respective country, while the connections between the nodes show the extent of the collaboration between the two countries. The map reveals that the USA holds a central position in this network having the biggest node size and highest connectivity level, which signifies the importance of USA in the research field of ESG disclosure.

The network indicates different collaboration clusters at both regional and international levels. Blue cluster shows that there are strong ties existing in terms of collaborations with countries like USA, Australia, India, Indonesia, and Thailand, thus depicting cooperation on a large scale in both Asia-Pacific and western countries for research. Green cluster shows collaboration within Europe with countries like Germany, Spain, Denmark, Portugal, and Morocco, thus showing the significance of sustainability policies of Europe in ESG research. Red and yellow clusters have new players coming into the picture from regions such as Saudi Arabia, Malaysia, Pakistan, South Africa, Nigeria, and Egypt.

3.3 Citation Analysis

Table 1. Top Cited Research

Citations	Authors and year	Title
1151	[18]	Mandatory CSR and sustainability reporting: economic analysis and literature review
735	[19]	Is sustainability reporting (ESG) associated with performance? Evidence from the European banking sector
529	[20]	Integrating Environmental, Social and Governance (ESG) Disclosure for a Sustainable Development: An Australian Study
440	[21]	The impact of board composition on the level of ESG disclosures in GCC countries
391	[22]	ESG disclosure and firm performance before and after IR: The moderating role of governance mechanisms
388	[23]	Market reaction to mandatory nonfinancial disclosure
352	[24]	The Effects of Mandatory ESG Disclosure Around the World

Citations	Authors and year	Title
309	[25]	A review of corporate sustainability reporting tools (SRTs)
300	[26]	Women on boards, sustainability reporting and firm performance
277	[27]	Institutional framework of ESG disclosures: comparative analysis of developed and developing countries

Source: Scopus, 2026

Table 1 shows the top-cited papers in ESG disclosure studies, identifying the important intellectual pillars underlying the evolution of the research area. The most cited paper is [18], with 1,151 citations, exploring the economic effects of mandatory CSR and sustainability reporting. The high number of citations confirms that regulations and mandatory disclosures have become important topics in the research field. [28], whose work has been cited 735 times in the literature on the link between sustainability reporting and corporate performance, is another important paper due to the academic interest in whether there are economic gains from ESG practices.

Apart from this, there are many other themes that are dominant in the field of ESG disclosure research, as can be observed in the highly cited studies above. One major theme in the literature is about the association between ESG disclosure and firm performance, where researchers examine the impact of sustainability disclosure on the financial aspects of the company, which has been studied by [22] and [29]. The other major theme in the literature is about corporate governance, where researchers study the effect of board structure, gender diversity, and corporate governance, which has been studied by [21], [26].

Also, there is research that focuses on the institutional and regulatory development of ESG reporting. The research by [23] and [24] analyzes the effect of mandatory non-financial and ESG disclosure regulations on the response of the market and behavior of firms. In addition, the research by [20], [25], and [27] adds to the knowledge base regarding the frameworks of ESG disclosures, reporting tools, and differences in developed and developing countries.

4. CONCLUSION

The results of this bibliometric study provide an in-depth insight into the development, intellectual structure, and current trends of environmental, social, and governance disclosure literature. The results indicate that the topic has seen a significant increase, motivated by the growing awareness of global society about the importance of sustainability, corporate responsibility, regulatory changes, and responsible investing. In particular, the analysis of keywords shows that the key issues investigated in the field include sustainability reporting, ESG, sustainable development, corporate governance, and ESG performance. Moreover, the development of research trends suggests that the traditional topics of sustainability reporting give way to more strategic issues related to firm value, sustainable finance, greenwashing, mandatory disclosures, and investors' decision making.

This type of bibliometric study also recognizes the vital role played by the contributions made by some significant authors, institutions, countries, and publications that have helped shape the theory and evidence-based foundation for ESG disclosure research. Through the citation analysis, it is clear that the body of research analyzing mandatory sustainability reporting, ESG performance, corporate governance systems, and the financial implications of ESG disclosure has emerged as significant sources of literature for academia. Collaboration analysis reveals that ESG disclosure research has become an area of research that cuts across the global landscape through contributions made from both developed and developing economies.

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