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Bibliometric Analysis of ESG Disclosure

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ABSTRACT

Environmental, Social, and Governance (ESG) disclosure has become an increasingly important research area due to growing demands for corporate transparency, sustainable business practices, and responsible investment decisions. This study aims to examine the development, intellectual structure, and emerging research trends in ESG disclosure literature using a bibliometric analysis approach. Data were collected from the Scopus database by identifying relevant publications related to ESG disclosure, sustainability reporting, and corporate sustainability. The collected documents were analyzed using VOSviewer to perform keyword co-occurrence analysis, citation analysis, co-authorship analysis, institutional collaboration analysis, and country collaboration mapping. The findings reveal that ESG disclosure research has experienced substantial growth and is primarily focused on themes related to ESG practices, sustainability reporting, corporate social responsibility, financial performance, stakeholder theory, and corporate governance. Influential studies indicate that ESG disclosure plays an important role in enhancing corporate value, improving transparency, reducing information asymmetry, and strengthening stakeholder relationships. The thematic evolution analysis further demonstrates a transition from conventional sustainability reporting toward emerging research areas involving artificial intelligence, machine learning, carbon disclosure, ESG performance measurement, and sustainable investment. The collaboration analysis highlights the dominant contributions of countries such as China, the United States, the United Kingdom, India, and Italy, reflecting the global and interdisciplinary nature of ESG disclosure research. This study contributes to the existing literature by mapping the knowledge structure of ESG disclosure and identifying future research opportunities related to digital ESG assessment, regulatory harmonization, and sustainable corporate value creation.

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1. INTRODUCTION

In recent years, Environmental, Social and Governance (ESG) criteria have been revealed as very important measures of sustainable corporate operations and socially responsible investments [1]. Disclosure of ESG criteria, which is the reporting about the environmental activities, social responsibility and governance issues, has gained increasing popularity and significance in determining investors' preferences, forming a company's reputation, and ensuring regulatory compliance [2], [3]. The increasing significance of ESG criteria disclosure is related to certain global tendencies focused on sustainable development and the need to prove not only financial results but also corporate accountability [4], [5]. Increasing transparency concerning the management of environmental, social and governance aspects has become a requirement for stakeholders and investors who want to know more about corporate value creation [6].

The emergence of ESG disclosure has been intertwined with the regulatory environment and sustainability standards. Frameworks such as the Global Reporting Initiative (GRI), Corporate Sustainability Reporting Directive (CSRD), and the Sustainable Development Goals (SDGs) of the United Nations have facilitated the standardization of ESG reporting requirements for firms to report on ESG performance in a more structured manner [7], [8]. The frameworks seek to address issues of information asymmetry and prevent any cases of greenwashing, hence promoting efficient capital markets through the provision of useful and credible sustainability information. Such regulation has seen firms incorporate ESG criteria into their strategic thinking in order to foster sustainability practices [9]–[11].

Although there is an emerging trend towards ESG disclosure, various challenges exist in making such disclosure effective. The ESG disclosure data is characterized by high levels of complexity, narrative content, and qualitative nature, which may make the process of quantification and comparison of such data across firms complicated [12], [13]. Differences in the approaches used by firms in disclosing information, methods of measurement, and granularity of ESG disclosure can lead to inconsistencies in ESG rating and confusion among the investors and may cause wrong investment decisions based on flawed sustainability performance assessment. Some researchers argue that the requirement of mandatory disclosure does not necessarily guarantee more transparency due to firms' use of minimum compliance disclosure practices [14]–[16].

The association between ESG disclosure and financial performance has attracted the attention of academics as well as practitioners. Studies reveal that companies which have robust ESG reporting practices benefit from better financial transparency, improved risk management, and good quality of decisions made by investor [17], [18]. In addition to that, the association between ESG performance and financial performance of companies varies on the basis of the firm-specific factors such as size, governance, and industry sector. Thus, the issue of ESG disclosure is not only related to compliance but can be used as a tool that influences liquidity, credit ratings, and valuation of the stock.

With the development of sophisticated tools and technology, bibliometric analysis has become a useful tool that helps in visualizing the progress and intellectual landscape of the area of ESG research. With the use of bibliometrics, it becomes possible for researchers to know who the prominent researchers are, what the important pieces of literature are, what are the areas where the theme has progressed, what the existing research gaps are, and so on, offering a clear picture of the process of knowledge creation in the area [19], [20].

Although the occurrence of ESG reporting has been higher along with regulatory demands, there is no bibliometric study carried out that provides an in-depth understanding of the intellectual structure, research hot spots, and trend of ESG disclosure. Most studies have looked at particular dimensions of ESG and overlooked the complete range of ESG dimensions and their interaction with financial performance and corporate governance. There are differences in reporting standards, measuring methods, and disclosures that make it difficult to compare and rely on the information available on ESG, thereby making the decision-making process of stakeholders challenging [21]–[23]. The aim of this study is to undertake a bibliometric analysis of ESG disclosure studies.

2. METHODS

This study adopts a bibliometric research methodology to examine the scientific field of ESG disclosure research. Bibliometrics is a quantitative technique of investigation which considers patterns in the publishing, citation, authorship, and evolution of topics in order to provide an analytical representation of the trend and development of research in a certain field [24]. Through the systematic examination of the literature in the field, this technique facilitates the identification of research hot spots, key authors, core journals, and collaboration networks among others.

Data for this study have been sourced from the Scopus database, which is considered one of the largest and most complete sources of bibliographic information on peer-reviewed articles. It was chosen for its comprehensive coverage across different fields of interest, such as accounting, finance, management, and sustainability research. Search terms used were 'ESG disclosure', 'environmental social governance reporting', and 'sustainability reporting'. Articles were sought in the years ranging from 2010 to 2026 to cover both the rise of the topic and its further expansion within recent years. Only peer-reviewed articles in English were considered for inclusion in the analysis.

The bibliometric information that was retrieved from Scopus was then inputted into VOSviewer, which is software specifically developed for bibliometric network visualization. VOSviewer was applied to analyze author collaboration networks, keyword associations, citation links, and institution collaborations. Using VOSviewer allowed for the mapping and visualization of the density of bibliometric networks in order to identify the most influential clusters of research, trends, and researchers in the field of ESG disclosures. Quantitative measures including number of publications, total citations, and link strength were used in assessing the importance and interconnectedness of authors, journals, and institutions.

3. RESULTS AND DISCUSSION

3.1 Network Visualization

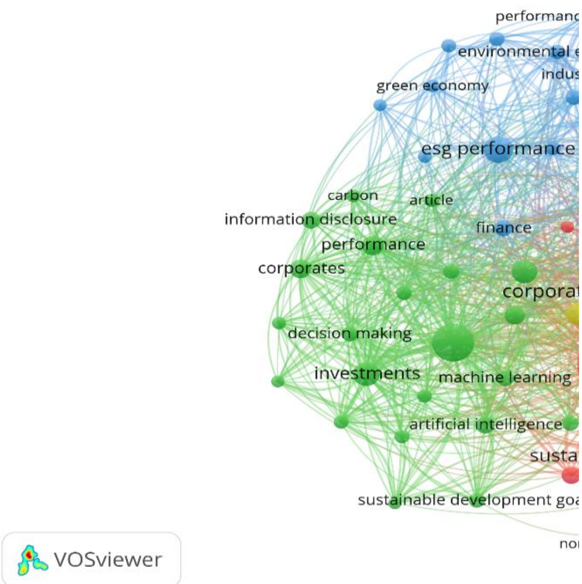

Figure 1. Network Visualization
Source: Data Analysis Result, 2026

Figure 1 provides an overview of the cognitive architecture and the themes underlying the area of ESG disclosure research. It shows that there are three key clusters colored differently, which show the main research streams that have been influencing the growth of ESG disclosure research studies. The size of each node shows how many times a particular keyword was used, whereas the lines illustrate the strength of the connection between the keywords. From the density of connections between clusters, one can conclude that ESG disclosure research is an interdisciplinary area including sustainability management, corporate governance, financial performance, innovations, and environmental responsibility.

The red group constitutes the main theme of ESG disclosure, sustainability reporting, and corporate responsibility. The most important keywords found in this cluster include ESG, sustainability, corporate social responsibility, sustainability reporting, and ESG reporting. This group captures the fundamental stream of ESG research, which is concerned with the communication of organization's environmental, social, and governance activities to the stakeholders. The connection between ESG and sustainability reporting is due to the fact that many studies explore ESG disclosures in the context of sustainability reporting systems. Moreover, the inclusion of keywords like stakeholder theory, financial performance, and firm size is indicative of the fact that many researchers analyze ESG disclosures from the perspective of stakeholders and firm characteristics.

Green color cluster emphasizes the connection between ESG disclosure, technological advances, decisions, and sustainable transformations. The terms like information disclosure, decision making, investments, machine learning, artificial intelligence, sustainable development goals, and carbon show the trend in research in which digital technology becomes connected with ESG issues. The presence of the terms like artificial intelligence and machine learning suggests the growing interest in application of sophisticated analytics tools to estimate the ESG performance and sustainability indicators. The presented color cluster suggests that the future research on ESG disclosure will go further from traditional reporting into the realm of digital technology and sustainability assessment.

The cluster colored in blue highlights the research pertaining to ESG performance, environmental economics, governance approaches, and organizational assessments. The key terms highlighted such as ESG performance, environmental economics, green economy, industrial performance, and governance approach reveal the research being done concerning evaluation of sustainable results in firms. It is evident from the cluster that ESG disclosure does not only act as a means of communication but also serves as an instrument for evaluating organizational efficiency in tackling environmental and governance issues.

From the results of bibliometric mapping, it is clear that the evolution of ESG disclosure research from an exclusively reporting perspective to a more holistic view in terms of the ecosystem of sustainability has been marked by the involvement of governance, financial, technological, and environmental perspectives in it. It is apparent from the strong linkages between the three clusters that ESG disclosure acts as a bridge between corporate accountability, stakeholder management, and sustainable value creation. Possible directions for future research include the integration of ESG disclosure with new technologies like artificial intelligence and the improvement of the measurement frameworks of ESG.

3.2 Overlay Visualization

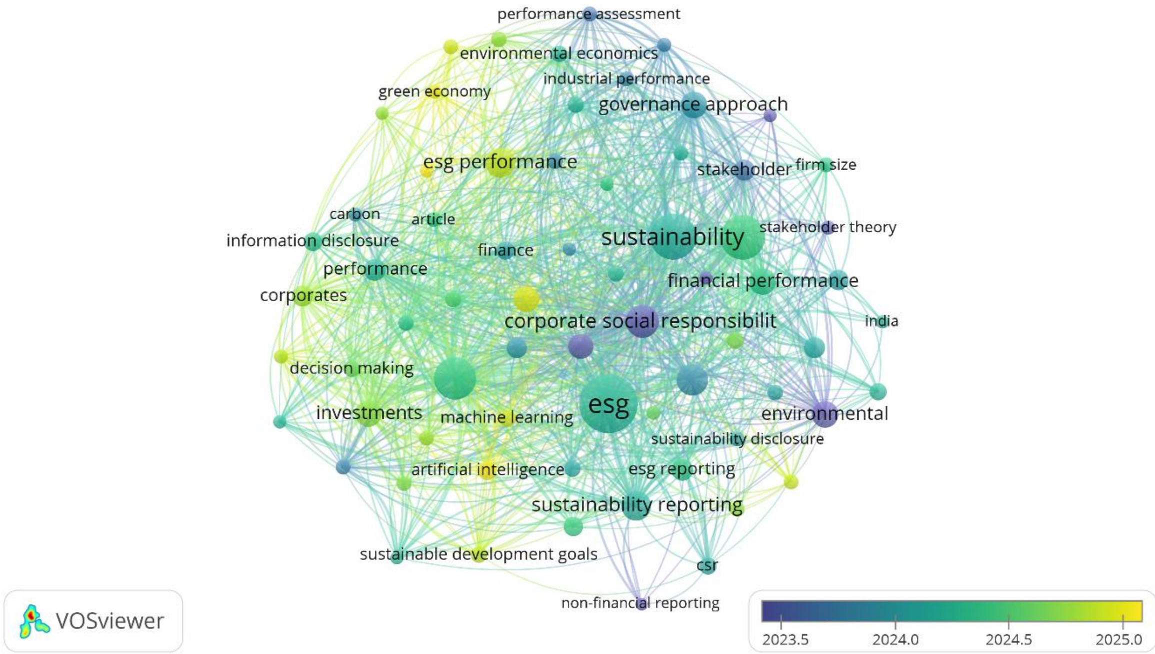

Figure 2. Overlay Visualization
Source: Data Analysis Result, 2026

Temporal trends of research in the field of ESG disclosure through keywords development are visualized in Figure 2 below. The color code reflects the average publication years of the keywords, where dark blue color suggests earlier research areas (around 2023), while green color stands for middle research development (around 2024), and yellow reflects the emerging topics which received attention only recently (around 2025). It can be seen from Figure 2 that ESG, sustainability, corporate social responsibility, and ESG reporting represent key research areas that have remained vital throughout the study period as the basis of ESG disclosure research.

The result of the overlay analysis is a move from the more conventional views about ESG disclosure to a more sophisticated and strategic set of research agendas. The previous concerns, depicted in blue and green circles, relate mainly to sustainability reporting, corporate social responsibility, stakeholder theory, environmental performance, and financial performance. These themes can be seen as part of the early research agenda in ESG that was concerned mainly with issues of disclosure, communication with stakeholders, and the link between sustainability activities and organizational outcomes. The new themes in yellow, which include ESG performance, green economy, environmental economics, decision making, and carbon themes, are an indication of new research concerns with measuring the impact of ESG.

Based on the timeline pattern observed, it can be noted that the future trajectory for ESG disclosure studies is gradually shifting towards being technology-oriented. The relationship emerging among AI, machine learning, information disclosure, and investment decision-making reflects rising curiosity about the use of digital technologies in ESG assessment and sustainability measurement.

Table 1. The Most Impactful Literatures

Citations	Authors and year	Title
1151	[25]	Mandatory CSR and sustainability reporting: economic analysis and literature review
1130	[26]	ESG performance and firm value: The moderating role of disclosure
1025	[27]	Why is Corporate Virtue in the Eye of The Beholder? The Case of ESG Ratings
917	[28]	Greenwashing in environmental, social and governance disclosures
891	[29]	The impact of environmental, social, and governance disclosure on firm value: The role of CEO power
888	[30]	Do environmental, social, and governance activities improve corporate financial performance?
828	[31]	ESG disclosure and financial performance: Moderating role of ESG investors
735	[32]	Is sustainability reporting (ESG) associated with performance? Evidence from the European banking sector
732	[33]	Sensitive industries produce better ESG performance: Evidence from emerging markets
715	[34]	ESG practices and the cost of debt: Evidence from EU countries

Source: Scopus, 2026

Table 1 presents the most influential literature in the field of ESG disclosure research based on citation impact. The results indicate that ESG disclosure studies have been strongly shaped by research examining the relationship between sustainability practices, corporate transparency, and financial outcomes. The most cited article by [25], with 1,151 citations, highlights the economic implications of mandatory CSR and sustainability reporting, emphasizing the role of regulatory requirements in improving corporate accountability and information transparency. Similarly, [26] and [27], receiving 1,130 and 1,025 citations respectively, demonstrate the importance of ESG disclosure in explaining firm value and the challenges associated with ESG rating differences among stakeholders. Other highly cited studies focus on critical issues such as greenwashing risks , the influence of corporate governance mechanisms such as CEO power [29], and the relationship between ESG activities and corporate financial performance [35]. Furthermore, studies by [36], [33], and [37] expand the discussion by examining ESG impacts in specific contexts, including banking sectors, emerging markets, and the cost of debt.

3.3 Density Visualization

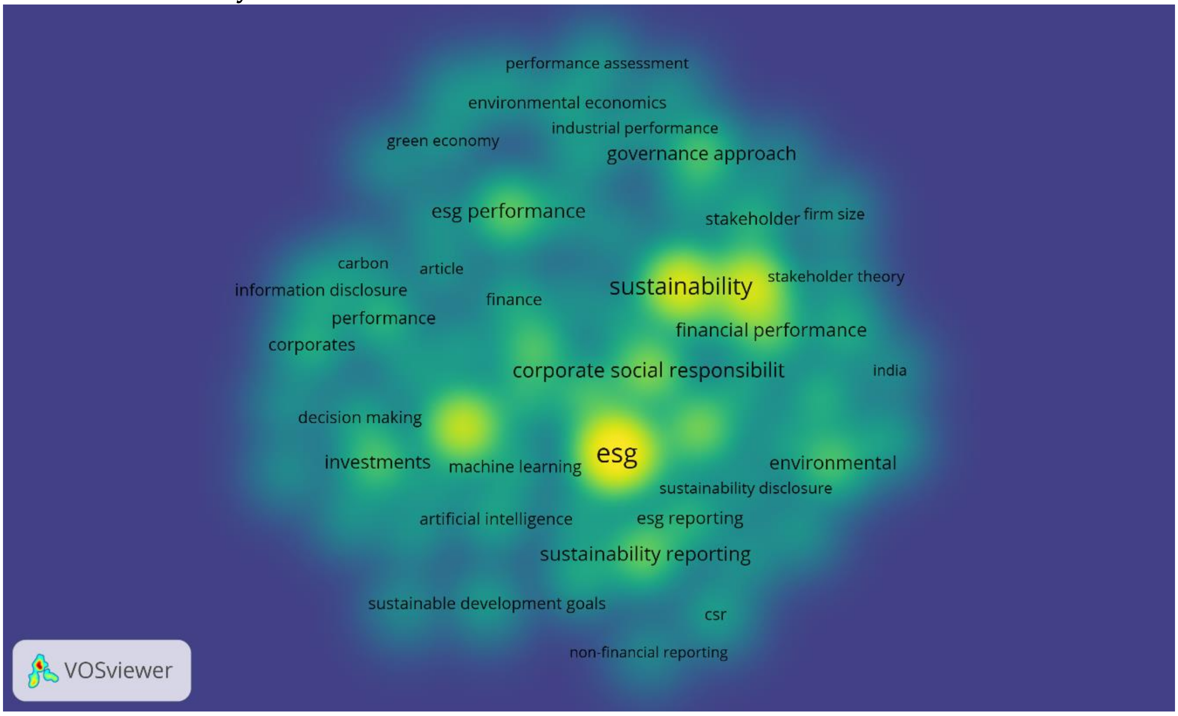

Figure 3. Density Visualization
Source: Data Analysis Result, 2026

This figure shows the clustering and the strength of research themes within the realm of ESG disclosure. The regions with high brightness levels, especially around the terms "ESG", "sustainability", and "corporate social responsibility," denote the most widely discussed and interconnected research themes. Such themes form the basis of ESG disclosure research, in which researchers focus on studying company disclosure practices related to environmental, social, and governance activities, as well as how these disclosures assist in achieving the sustainability goals of the organization. High density around ESG implies that it is the key theme across multiple research streams, such as sustainability reporting, financial performance, environmental responsibility, and corporate governance. In addition, there is the identification of numerous research areas that have emerged and are connected to the theme of ESG. Terms like artificial intelligence, machine learning, investment decisions, information disclosure, carbon, and sustainable development goals seem to be new areas of research, indicating a tendency towards technology-driven ESG evaluation and information-driven analysis of sustainability. At the same time, terms such as stakeholder theory, governance approach, ESG performance, and financial performance continue to attract researchers' attention.

3.4 Author Visualization

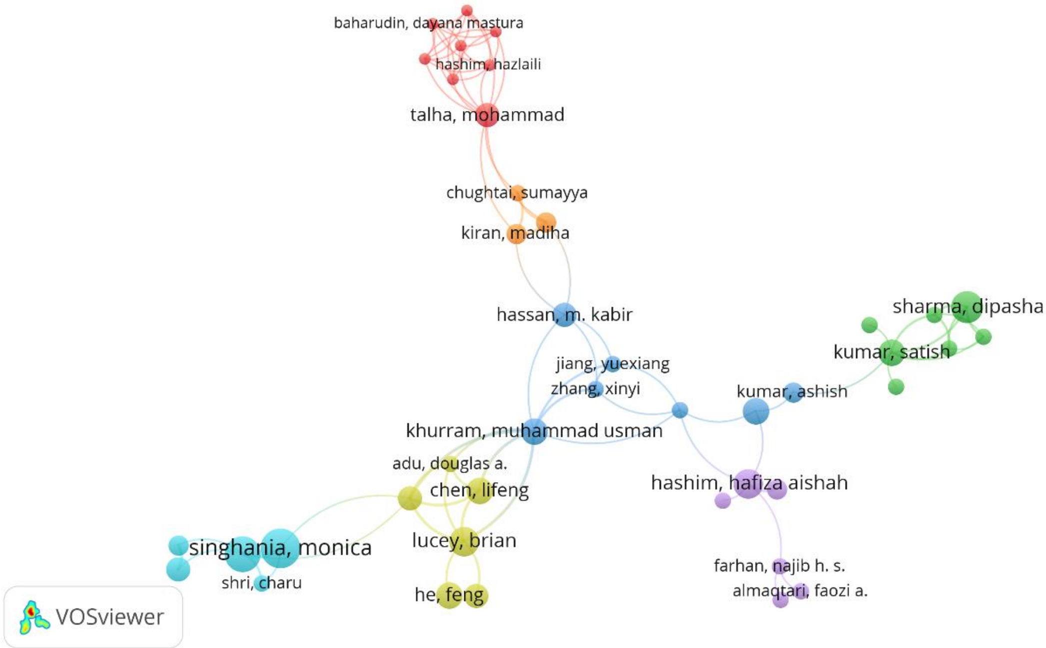

Figure 4. Author Visualization
Source: Data Analysis Result, 2026

Figure 4 represents how the collaboration process among researchers in the area of ESG disclosure studies takes place. The network has several clear clusters of authors, which are presented in various colors. They represent several research communities, where researchers work together within certain research streams. The size of nodes represents productivity or influence of the authors, and connecting lines show how they are connected with each other within their collaborations. It can be seen from the visualization that the ESG disclosure research field is not based on one community but on several ones because of its multidisciplinary nature. One of the biggest and well-connected clusters comprises authors like Khurram, Muhammad Usman; Chen, Lifeng; Lucey, Brian; and He, Feng, thus showing the importance of these authors in collaborative research on ESG. In addition, there are other clusters, including clusters that comprise Jiang Yuexiang, Zhang Xinyi, Kumar Ashish, and Hassan M. Kabir among others, which reflect collaborative networks that are dedicated to ESG performance, sustainability, and corporate outcomes. There are smaller clusters comprising Singhania Monica and Shri Charu or Talha Mohammad and other authors.

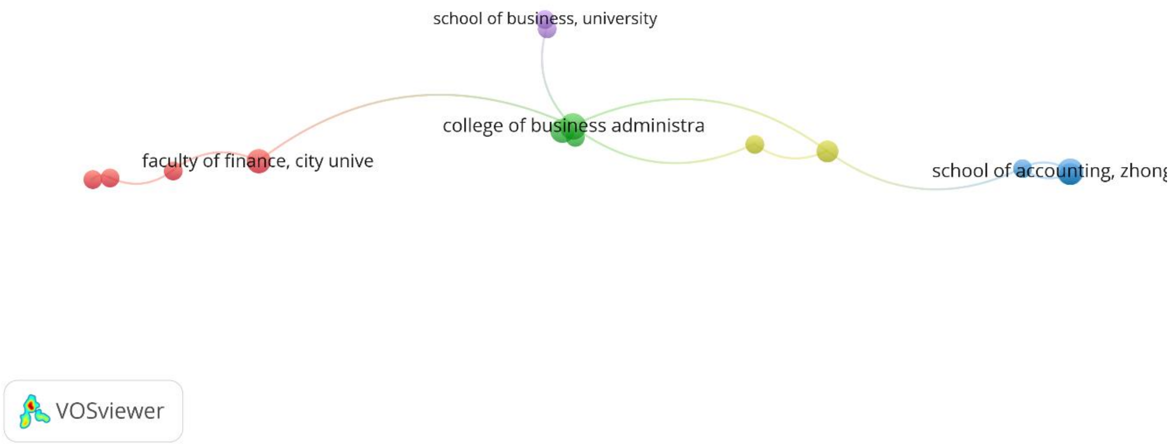

Figure 5. Institution Visualization
Source: Data Analysis Result, 2026

Figure 5 highlights the pattern of association among the contributing institutions towards ESG disclosure literature. In this network diagram, it is evident that there are fewer connections among the institutions, implying that the collaboration is still limited to only a few academic institutions. Nodes with larger size such as College of Business Administration, School of Accounting, and Faculty of Finance denote high research contribution or collaboration among the institutions. The connection lines between institutions are knowledge sharing and collaborative research that implies that ESG disclosure researches are carried out through collaboration within different academic areas. The visualization also highlights the fact that ESG disclosure literature has evolved through different academic networks that have been both geographically and institutionally diverse. The School of Accounting and Faculty of Finance seems to act as an important node linking accounting-related sustainability literature to business management. On the other hand, the link between the School of Business, University, and other business administration institutions demonstrates how interdisciplinary research on ESG is in that sustainable concerns are viewed strategically, financially, and governance-wise. It can be argued that the rather loose network structure implies the need for more collaboration between institutions which offers chances for international partnerships to advance ESG disclosure literature.

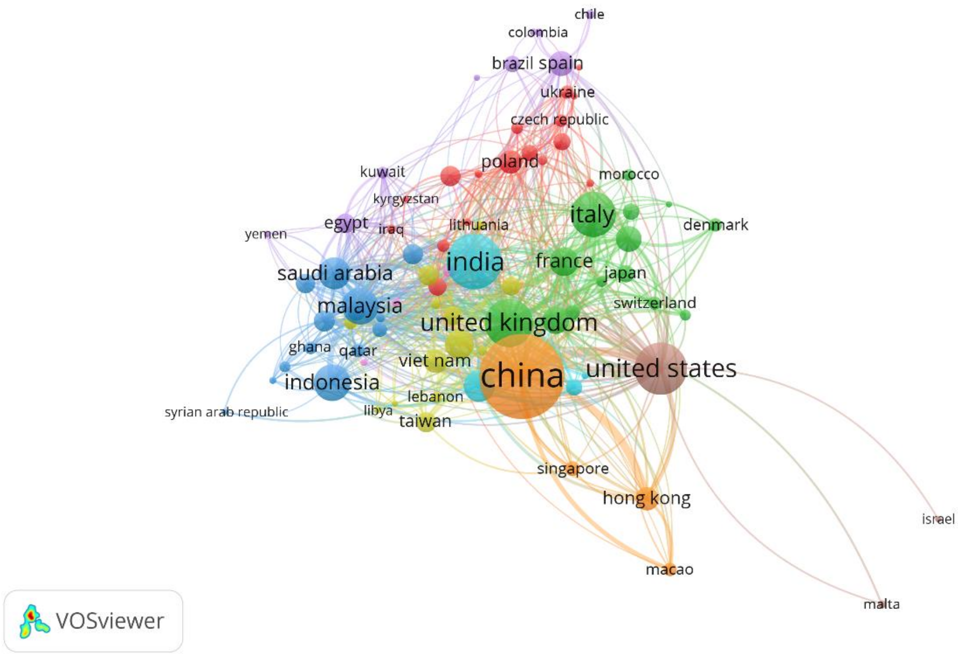

Figure 6. Country Visualization
Source: Data Analysis Result, 2026

As shown in Figure 6 below, ESG disclosure research has been conducted globally and cooperation among various countries around the world. In the network, ESG disclosure research has become a global subject with contributions coming from different countries such as those in Asia, Europe, North America, and others. The size of each node in the network is determined by the level of research contribution or publication intensity from each country, whereas the connecting lines denote the level of international cooperation. China, the United States, the United Kingdom, India, and Italy are the major countries due to the bigger nodes and connecting lines.

From the visualization, it is clear that China has the most prominent position in the network and acts as an important collaboration node among scholars from different nations such as United States, United Kingdom, Hong Kong, Singapore, and Macau. It signifies the importance of China in contributing towards ESG disclosures especially related to corporate sustainability, financial performance, and governance mechanisms. European nations like Italy, France, Poland, Switzerland, Denmark, and United Kingdom constitute another important research cluster, which reflects the interest of scholars in ESG regulations, sustainability reporting guidelines, and corporate responsibility. Emerging nations like Indonesia, Malaysia, India, Saudi Arabia, and Vietnam constitute another cluster and are increasingly involved in ESG disclosure research.

4. CONCLUSION

This bibliometric review offers an extensive review of the intellectual development, research trends, and international collaboration pattern on the topic of ESG disclosure. Results indicate that research in the domain of ESG disclosure has been growing significantly because of increasing focus towards corporate sustainability, stakeholder accountability, regulatory pressure, and sustainable investments. Keyword analysis shows that the field of research is mostly concerned with ESG, sustainability reporting, corporate social responsibility, and financial performance, whereas artificial intelligence, machine learning, carbon disclosure, and ESG measurement show that there has been a shift towards technological assessment of sustainability. Research studies have made it clear that ESG disclosure is important for promoting corporate transparency, increasing firm value, overcoming information asymmetry and building stakeholder confidence. Moreover, the analysis of international collaboration shows that the area of ESG disclosure research has grown extensively because of the efforts of leading countries like China, US, UK, India, and Italy, but there is scope of greater international cooperation among the developed and emerging countries.

REFERENCES

[1] W. Huang, Y. Luo, X. Wang, and L. Xiao, "Controlling shareholder pledging and corporate ESG behavior," *Res. Int. Bus. Financ.*, vol. 61, 2022, doi: 10.1016/j.ribaf.2022.101655.

[2] A. Y. Zhang and J. H. Zhang, "Renovation in environmental, social and governance (ESG) research: the application of machine learning," *Asian Rev. Account.*, vol. 32, no. 4, pp. 554–572, 2024, doi: 10.1108/ARA-07-2023-0201.

[3] M.-F. Kao, C.-H. Jian, and C.-H. Tseng, "Managerial ability and voluntary ESG disclosure and assurance: evidence from Taiwan," *Sustain. Accounting, Manag. Policy J.*, vol. 15, no. 1, pp. 207–231, 2024, doi: 10.1108/SAMPJ-08-2022-0428.

[4] Y. Li, L. Zheng, C. Xie, and J. Fang, "Big data development and enterprise ESG performance: Empirical evidence from China," *Int. Rev. Econ. Financ.*, vol. 93, pp. 742–755, 2024, doi: 10.1016/j.iref.2024.05.027.

[5] P. Pereira da Silva, "Crash risk and ESG disclosure," *Borsa Istanbul Rev.*, vol. 22, no. 4, pp. 794–811, 2022, doi: 10.1016/j.bir.2022.04.001.

[6] W. Ning, U. F. Saeed, A. K. Twum, and A. Osei, "Can ESG disclosures promote firms going concern? Evidence from BRICS countries," *Corp. Soc. Responsib. Environ. Manag.*, vol. 31, no. 5, pp. 3792–3803, 2024, doi: 10.1002/csr.2771.

[7] M. Atif, B. Liu, and S. Nadarajah, "The effect of corporate environmental, social and governance disclosure on cash holdings: Life-cycle perspective," *Bus. Strateg. Environ.*, vol. 31, no. 5, pp. 2193–2212, 2022, doi: 10.1002/bse.3016.

[8] A. Pawliczek, A. N. Skinner, and L. A. Wellman, "A new take on voice: the influence of BlackRock's 'Dear CEO' letters," *Rev. Account. Stud.*, vol. 26, no. 3, pp. 1088–1136, 2021, doi: 10.1007/s11142-021-09603-x.

[9] A. Hamrouni, R. Boussaada, and N. Ben Farhat Toumi, "Corporate social responsibility disclosure and debt financing," *J. Appl. Account. Res.*, vol. 20, no. 4, pp. 394–415, 2019, doi: 10.1108/JAAR-01-2018-0020.

[10] F. Lopez-De-silanes, J. A. McCahery, and P. C. Pudschedl, "ESG performance and disclosure: A cross-country analysis," *Singapore J. Leg. Stud.*, vol. 2020, pp. 217–241, 2020, [Online]. Available: https://www.scopus.com/pages/publications/85087558523?origin=resultslist

[11] J. Zhang and Z. Liu, "Study on the Impact of Corporate ESG Performance on Green Innovation Performance—Evidence from Listed Companies in China A-Shares," *Sustain.*, vol. 15, no. 20, 2023, doi: 10.3390/su152014750.

[12] Z. Rezaee and L. Tuo, "Voluntary disclosure of non-financial information and its association with sustainability performance," *Adv. Account.*, vol. 39, pp. 47–59, 2017, doi: 10.1016/j.adiac.2017.08.001.

[13] D. Dwivedi, S. Batra, and Y. K. Pathak, "A MACHINE LEARNING BASED APPROACH TO IDENTIFY KEY DRIVERS FOR IMPROVING CORPORATE'S ESG RATINGS," *J. Law Sustain. Dev.*, vol. 11, no. 1, 2023, doi: 10.37497/sdgs.v11i1.242.

[14] A. C. Baker, D. F. Larcker, C. H. A. R. L. E. S. G. McCLURE, D. Saraph, and E. M. Watts, "Diversity Washing," *J. Account. Res.*, vol. 62, no. 5, pp. 1661–1709, 2024, doi: 10.1111/1475-679X.12542.

[15] A. Tsang, T. Frost, and H. Cao, "Environmental, Social, and Governance (ESG) disclosure: A literature review," *Br. Account. Rev.*, vol. 55, no. 1, 2023, doi: 10.1016/j.bar.2022.101149.

[16] F. Su, M. Guan, Y. Liu, and J. Liu, "ESG performance and corporate fraudulence: Evidence from China," *Int. Rev. Financ. Anal.*, vol. 93, 2024, doi: 10.1016/j.irfa.2024.103180.

[17] W. C. Wong, J. A. Batten, A. H. Ahmad, S. B. Mohamed-Arshad, S. Nordin, and A. A. Adzis, "Does ESG certification add firm value?," *Financ. Res. Lett.*, vol. 39, 2021, doi: 10.1016/j.frl.2020.101593.

[18] A. Gholami, J. Sands, and H. U. Rahman, "Environmental, Social and Governance Disclosure and Value Generation: Is the Financial Industry Different?," *Sustain.*, vol. 14, no. 5, 2022, doi: 10.3390/su14052647.

[19] C. Yang, R. Yang, Y. Zhou, and Z. Liu, "E, S, and G, not ESG: Heterogeneous effects of environmental, social, and governance disclosure on green innovation," *Corp. Soc. Responsib. Environ. Manag.*, vol. 31, no. 2, pp. 1220–1238, 2024, doi: 10.1002/csr.2627.

[20] J. M. Borralho, R. Hernández-Linares, D. Gallardo-Vázquez, and I. Choban de Sousa Paiva, "Environmental, social and governance disclosure's impacts on earnings management: Family versus non-family firms," *J. Clean. Prod.*, vol. 379, 2022, doi: 10.1016/j.jclepro.2022.134603.

[21] S. Rastogi, K. Singh, and J. Kanoujiya, "Firm's value and ESG: the moderating role of ownership concentration and corporate disclosures," *Asian Rev. Account.*, vol. 32, no. 1, pp. 70–90, 2024, doi: 10.1108/ARA-10-2022-0266.

[22] R. Atan, F. A. Razali, J. Said, and S. Zainun, "Environmental, social and governance (esg) disclosure and its effect on firm's performance: A comparative study," *Int. J. Econ. Manag.*, vol. 10, no. Specialissue2, pp. 355–375, 2016, [Online]. Available: https://www.scopus.com/pages/publications/85017333494?origin=resultslist

[23] N. Malik and S. Kashiramka, "'Impact of ESG disclosure on firm performance and cost of debt: Empirical evidence

from India,'" *J. Clean. Prod.*, vol. 448, 2024, doi: 10.1016/j.jclepro.2024.141582.

[24] N. Donthu, S. Kumar, D. Mukherjee, N. Pandey, and W. M. Lim, "How to conduct a bibliometric analysis: An overview and guidelines," *J. Bus. Res.*, vol. 133, pp. 285–296, 2021.

[25] H. B. Christensen, L. Hail, and C. Leuz, "Mandatory CSR and sustainability reporting: economic analysis and literature review," *Rev. Account. Stud.*, vol. 26, no. 3, pp. 1176–1248, 2021, doi: 10.1007/s11142-021-09609-5.

[26] A. Fatemi, M. Glaum, and S. Kaiser, "ESG performance and firm value: The moderating role of disclosure," *Glob. Financ. J.*, vol. 38, pp. 45–64, 2018, doi: 10.1016/j.gfj.2017.03.001.

[27] D. M. Christensen, G. Serafeim, and A. Sikochi, "Why is Corporate Virtue in the Eye of The Beholder? The Case of ESG Ratings," in *Accounting Review*, University of Oregon, Lundquist College of Business, Department of Accounting, Eugene, OR, United States: American Accounting Association, 2022, pp. 147–175. doi: 10.2308/TAR-2019-0506.

[28] E. P.-Y. Yu, B. V Luu, and C. H. Chen, "Greenwashing in environmental, social and governance disclosures," *Res. Int. Bus. Financ.*, vol. 52, 2020, doi: 10.1016/j.ribaf.2020.101192.

[29] Y. Li, M. Gong, X.-Y. Zhang, and L. Koh, "The impact of environmental, social, and governance disclosure on firm value: The role of CEO power," *Br. Account. Rev.*, vol. 50, no. 1, pp. 60–75, 2018, doi: 10.1016/j.bar.2017.09.007.

[30] J. Xie, W. Nozawa, M. Yagi, H. Fujii, and S. Managi, "Do environmental, social, and governance activities improve corporate financial performance?," *Bus. Strateg. Environ.*, vol. 28, no. 2, pp. 286–300, 2019, doi: 10.1002/bse.2224.

[31] Z. Chen and G. Xie, "ESG disclosure and financial performance: Moderating role of ESG investors," *Int. Rev. Financ. Anal.*, vol. 83, 2022, doi: 10.1016/j.irfa.2022.102291.

[32] A. Buallay, "Is sustainability reporting (ESG) associated with performance? Evidence from the European banking sector," *Manag. Environ. Qual. An Int. J.*, vol. 30, no. 1, pp. 98–115, 2019, doi: 10.1108/MEQ-12-2017-0149.

[33] A. S. Garcia, W. Mendes-Da-Silva, and R. Orsato, "Sensitive industries produce better ESG performance: Evidence from emerging markets," *J. Clean. Prod.*, vol. 150, pp. 135–147, 2017, doi: 10.1016/j.jclepro.2017.02.180.

[34] Y. Eliwa, A. Aboud, and A. Saleh, "ESG practices and the cost of debt: Evidence from EU countries," *Crit. Perspect. Account.*, vol. 79, 2021, doi: 10.1016/j.cpa.2019.102097.

[35] K. Albitar, K. Hussainey, N. Kolade, and A. M. Gerged, "ESG disclosure and firm performance before and after IR: The moderating role of governance mechanisms," *Int. J. Account. Inf. Manag.*, vol. 28, no. 3, pp. 429–444, 2020, doi: 10.1108/IJAIM-09-2019-0108.

[36] A. Buallay, R. Cummings, and A. Hamdan, "Intellectual capital efficiency and bank's performance: A comparative study after the global financial crisis," *Pacific Account. Rev.*, 2019.

[37] Y. Eliwa, A. Saleh, and A. Ahmed, "Aligning Pay With Purpose: ESG-Linked Compensation and ESG Decoupling," *Bus. Strateg. Environ.*, vol. 35, no. 2, pp. 1805–1829, 2026, doi: 10.1002/bse.70258.