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A BIBLIOMETRIC REVIEW OF BOARD DIVERSITY AND FIRM PERFORMANCE. MAPPING THE INTELLECTUAL STRUCTURE AND EMERGING TRENDS

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Abstract:

The connection between board diversity as well as firm performance has received growing scholarly attention in recent years, driven by increasing awareness of corporate governance reforms, gender inclusivity, and sustainable business practices. Despite the volume of research, the intellectual structure and knowledge development within this area remain fragmented, calling for a systematic bibliometric investigation. This research discusses this gap by evaluating the global research trends on board diversity as well as firm performance through a comprehensive bibliometric approach. Data were collected using Scopus advanced searching with carefully selected keywords, yielding a final dataset of 318 documents. The dataset was further processed using OpenRefine to clean and harmonize author names, keywords, as well as institutional information, guaranteeing consistency and accuracy. Bibliometric indicators, citation patterns, and productivity measures were generated using the Scopus Analyzer to provide statistical insights and graphical representations. Additionally, VOSviewer software was applied to map co-citation, co-authorship, as well as keyword co-occurrence networks, enabling the visualization of research clusters, collaborations, and emerging themes. The findings highlight a constant increase in publications over the last decade, with notable contributions from developed economies such as the United Kingdom, the United States, and China, alongside growing interest from emerging markets. Highly cited articles predominantly focus on gender diversity, governance mechanisms, and their direct and indirect effects on firm performance. Keyword analysis revealed critical research hotspots, including

“corporate governance,” “board gender diversity,” “financial performance,” “CSR,” and “sustainable development,” which form the foundation of this scholarly discourse. This study contributes to the body of knowledge by identifying influential authors, countries, and thematic clusters while providing a roadmap for future research on how diverse boards shape firm outcomes in different institutional and cultural contexts.

Keywords:

Board Diversity and Firm Performance

Introduction

The relationship between board diversity as well as firm performance has garnered substantial focus in recent years, indicating broader societal shifts towards inclusivity and equity in corporate governance. Board diversity encompasses various dimensions, including age, gender, education, tenure, as well as nationality, each potentially influencing firm performance in distinct ways. This topic is particularly relevant as firms navigate complex global markets and strive to enhance their tactical decision-making processes. Understanding the intellectual structure and emerging trends in this area is crucial for academics, practitioners, and policymakers aiming to optimize corporate governance frameworks.

Literature Review

Research on board diversity and firm performance demonstrates mixed results, highlighting the relationship complexity. Several research propose that board diversity positively impacts firm performance by enhancing the directors' strategic role, as posited by the resource dependence theory. For instance, variation in gender among independent and non-executive directors, variation in age among executive directors, and variation in educational backgrounds among executives have been shown to positively influence firm performance (Hernández-Atienza et al., 2024). However, the effects of board diversity are not universally positive. In the Japanese firms context, board gender diversity has been found to negatively influence firm performance, particularly in smaller firms and those with higher leverage (Wang et al., 2024). Similarly, in the UK gender and age diversity in SMEs were associated with lower firm performance, suggesting that the advantages of diversity may vary by firm size and context (Shehata et al., 2017).

The role of corporate transparency and the information environment also moderates the connection between firm performance as well as board diversity. Studies indicate that firms with greater corporate transparency benefit more from board diversity, while those with less transparent information environments may experience adverse effects (Upadhyay, 2014). Additionally, the mediating role of factors such as firm reputation and innovation has been explored, with findings suggesting that these elements partially explain the positive connection between board racial diversity as well as firm performance (Miller & Del Carmen Triana, 2009).

Contextual factors, such as business group affiliation and national culture, further complicate the diversity-performance nexus. In India, board demographic diversity positively influences standalone firms' performance but negatively affects group-affiliated firms (Aggarwal et al., 2019). Cultural variables also interact with board diversity, influencing firm performance

differently across countries. For example, in cultures with high power distance and individualism, board gender diversity may negatively impact firm performance (Naghavi et al., 2021).

Emerging trends in the literature highlight the importance of considering multiple dimensions of diversity and their interactions with various contextual factors. Studies increasingly emphasize the demand for a nuanced method to board diversity, recognizing that a one-size-fits-all strategy may be ineffective. The incorporation of environmental, social, and governance (ESG) aspects into the analysis of board diversity and firm performance is also gaining traction, with evidence suggesting that ESG performance can mediate this relationship (Fayyaz et al., 2023; Nguyen et al., 2023). Overall, the intellectual structure of this field is evolving, with a growing recognition of the complex and multifaceted nature of board diversity's impact on firm performance.

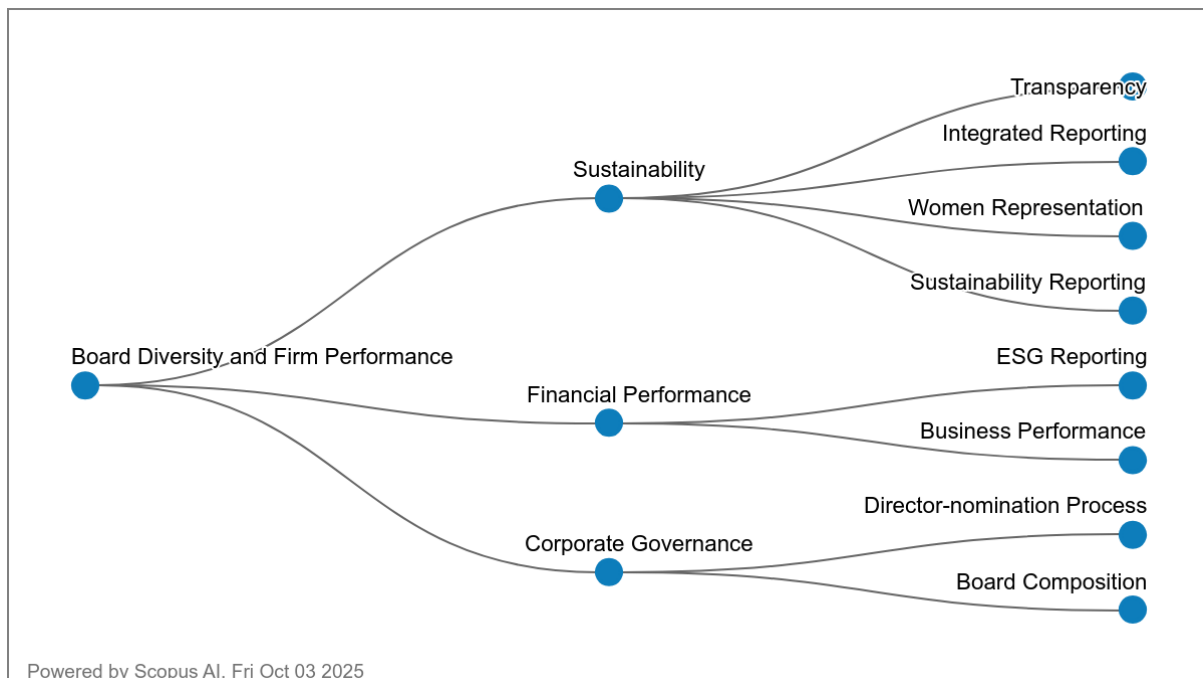


Figure 1: Concept Map for Core Dimension

Source: Generated by Author (s) using Scopus AI

The concept map in Figure 1 illustrates the intellectual structure and emerging trends within the research field of firm performance as well as board diversity. The map reveals three main thematic clusters: sustainability, financial performance, and corporate governance, each branching into more specific sub-themes. Sustainability is closely linked with transparency, integrated reporting, women's representation, and sustainability reporting, reflecting the growing emphasis on environmental, social, and governance (ESG) issues in corporate practices. Financial performance is associated with ESG reporting and business performance, highlighting the debate on how diversity and sustainability practices translate into measurable financial outcomes. Meanwhile, corporate governance connects with director-nomination processes and board composition, underscoring the role of structural governance mechanisms in shaping firm performance. Collectively, these clusters demonstrate that the discourse around board diversity extends beyond financial metrics to encompass broader governance and

sustainability considerations. This intellectual mapping underscores an evolving trend where diversity is increasingly recognized not only as a factor influencing firm performance but also as a driver of sustainable practices, transparent reporting, and responsible governance, offering a multidimensional perspective on the value of diverse boards in contemporary corporate environments.

Research Question

RQ1: What are the research trends in board diversity and firm performance studies over the years of publication?

RQ2: Which are the most cited articles in the field of board diversity and firm performance?

RQ3: Which countries are the top 10 contributors in terms of the number of publications on board diversity and firm performance?

RQ4: What are the most frequently used keywords in the field of board diversity and firm performance?

RQ5: What are the emerging and popular keywords that indicate future research directions in board diversity and firm performance?

Methodology

Bibliometrics encompasses systematically gathering, organizing, and analyzing bibliographic information from scientific literature (Alves et al., 2021; Assyakur & Rosa, 2022; Verbeek et al., 2002). Moving over descriptive statistics like the identification of publishing journals, temporal distribution of publications, as well as prolific authors (Y. C. J. Wu & Wu, 2017), bibliometric techniques incorporate developed methods, involving document co-citation analysis, to map intellectual structures within a research field. A rigorous literature review demands an iterative and methodical process of keyword selection, literature retrieval, and comprehensive analysis, ensuring both breadth and depth of coverage. Such an approach facilitates the construction of a robust bibliography and improves the reliability of research outcomes (Fahimnia et al., 2015). In this research, emphasis was placed on high-impact publications, given their critical role in shaping theoretical frameworks and advancing scholarly discourse. To ensure data accuracy, SCOPUS was employed as the primary database for the collection of data (Al-Khoury et al., 2022; di Stefano et al., 2010; Khiste & Paithankar, 2017). Moreover, to uphold quality standards, only journal articles, reviews, and conference proceedings were considered (Gu et al., 2019). Leveraging Elsevier's Scopus, renowned for its comprehensive coverage, the dataset comprised publications from 2020 through October 2025, thereby capturing the latest developments as well as emerging trends in the domain.

Data Search Strategy

The data for this research were obtained from the Scopus database, selected for its extensive coverage of peer-reviewed literature, standardized metadata, and compatibility with bibliometric analysis tools, making it one of the most reliable sources for systematic reviews and bibliometric studies. An advanced search strategy was employed using the following Boolean string (Table 1): *TITLE-ABS-KEY ("Board Diversity" OR "Ethnicity" OR "Age" OR "Tenure" OR "Educatio" OR "Nationality" AND "Performance") AND (LIMIT-TO (LANGUAGE, "English")) ***. This search query was carefully constructed to capture studies that discover the connection between various aspects of firm performance as well as board diversity. The inclusion of the term "Board Diversity" ensured retrieval of studies directly addressing the broad concept, while the additional terms ethnicity, age, tenure, education, and nationality captured specific dimensions of diversity commonly discussed in corporate

governance research. The use of the truncation symbol in “Education” broadened the search to include multiple word forms such as education, educational background, and educational diversity, preventing the omission of relevant papers due to terminological variations. The term “Performance” was deliberately included to restrict the results to studies that explicitly examine the results of diversity at the organizational or firm level, ensuring alignment with the focus of this research. The Boolean operator OR was employed to maximize inclusivity by capturing articles that address any of the diversity dimensions, while AND narrowed the scope to ensure a direct link to performance outcomes. To maintain consistency and avoid issues related to translation, the results were limited to documents published in English (Table 2). The search was executed on October 3, 2025, thereby establishing a clear access date for reproducibility. This process yielded a final dataset of 318 documents, including journal articles, reviews, and conference proceedings, which together represent a substantial body of knowledge on the subject. The dataset provides a robust foundation for bibliometric mapping and analysis, enabling the identification of research patterns, influential contributions, and emerging trends in the study of firm performance as well as board diversity.

Table 1
The Search String

Scopus	TITLE-ABS-KEY (Board Diversity OR Ethnicity OR AGE OR tenure OR Educatio* OR Nationality AND performance) AND (LIMIT-TO (LANGUAGE , “English”)) Access date October 3, 2025
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Table 2
The Selection Criterion of Searching

Criterion	Inclusion	Exclusion
Language	English	Non – English
Timeline	2020 - 2025	<2020
Literature Type	Journal (Article), reviews, conference proceedings	Book

Data Cleaning and Analysis

The bibliometric analysis was performed in three stages. First, the filtered data obtained from the Scopus database were exported in a standardized CSV format. The extracted dataset included fields such as title, authors, affiliations, publication year, journal name, keywords, abstracts, and EID. Subsequently, data cleaning was performed using OpenRefine, where the dataset was refined and harmonized to ensure consistency and accuracy (Ahmi, 2023) and finally, performance analysis was conducted to examine the publication output by year, most cited author and countries to assess productivity and impact. VOSviewer was created by Nees Jan van Eck and Ludo Waltman at Leiden University in the Netherlands (van Eck & Waltman, 2010, 2017) was used. It is a commonly recognized bibliometric software renowned for its intuitive visualization and analytical capabilities. Designed to simplify the exploration of large-scale scientific datasets, it specializes in clustering related items, generating network visualizations, as well as producing density maps. Its versatility extends to the assessment of co-authorship, co-citation, as well as keyword co-occurrence networks, thereby offering scholars an extensive overview of research landscapes. The platform’s intuitive interface,

combined with continuous enhancements, ensures both efficiency and adaptability. Moreover, its ability to compute metrics, customize visualizations, and integrate seamlessly with various bibliometric databases positions VOSviewer as an indispensable tool for advancing scholarly inquiry.

A defining strength of VOSviewer lies in its ability to convert complex bibliometric datasets into visually interpretable knowledge structures. By focusing on network visualization, the software excels in clustering, mapping keyword co-occurrence patterns, as well as generating high-resolution density maps. Its iterative design ensures accessibility for both novice and experienced researchers, enabling efficient navigation through vast bibliometric datasets. The platform's ongoing development maintains its relevance in the evolving field of research analytics, offering robust functionalities such as metrics computation and visualization customization. This adaptability across multiple data types, involving co-authorship, citation, as well as keyword networks, further enhances its value as a methodological cornerstone for bibliometric studies.

For the present study, datasets comprising title, publication year, journal, author name, citations, as well as keywords in Plain Text format were retrieved from the Scopus database, covering the period from 2020 to October 2025. These datasets were processed using VOSviewer version 1.6.19, which allowed the construction of bibliometric maps through advanced clustering and mapping techniques. Unlike conventional Multidimensional Scaling (MDS), VOSviewer situates items in a low-dimensional space such that the spatial proximity between any two elements indicates the strength of their relation (van Eck & Waltman, 2010). While sharing conceptual similarities with MDS (Appio et al., 2014), VOSviewer diverges methodologically by utilising a more sturdy normalization approach for co-occurrence frequencies. Specifically, it utilizes the association strength (AS_{ij}) as a similarity measure, which is measured in the following (Van Eck & Waltman, 2007):

$$AS_{ij} = \frac{C_{ij}}{w_i w_j}$$

The association strength (AS_{ij}) is defined as a measure of similarity that is proportional to the ratio between the observed frequency of co-occurrences of items i and j and the expected frequency of such co-occurrences, assuming their occurrences are statistically independent (Van Eck & Waltman, 2007).

Findings

RQ1: What are the Research Trends in Board Diversity and Firm Performance Studies Over the Years of Publication?

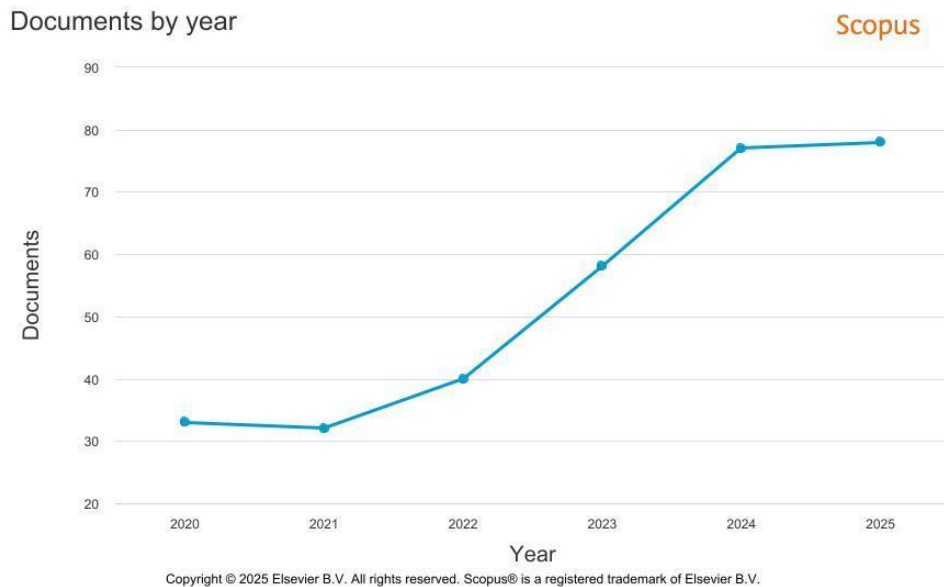


Figure 2 Publication by Year

Source: Generated by author (s) using Scopus

The publication trend from 2020 to 2025 indicates a steady increase in scholarly attention toward the topic of firm performance as well as board diversity, with the total number of publications rising from 33 in 2020 to a peak of 78 in 2025. While the growth was relatively modest between 2020 (33), 2021 (32), and 2022 (40), a sharp upward trajectory is observed in 2023 (58), followed by consistent high outputs in 2024 (77) and 2025 (78). This progression suggests an increasing awareness of the significance of diversity in corporate governance research, particularly as firms and regulators worldwide emphasize inclusivity and accountability in board structures. The increase also reflects the maturation of diversity as a mainstream topic in finance and management literature, where it is now linked not only to financial outcomes but also to broader measures of organizational sustainability, innovation, and ESG performance.

Several factors can explain this significant growth in publications. First, global regulatory reforms and corporate governance codes have increasingly mandated or encouraged gender and ethnic diversity on boards, stimulating academic interest in evaluating the impact of these policies. Second, the post-COVID-19 period heightened discussions around resilience, sustainability, and inclusivity, leading to greater research output from 2022 onward. Third, the surge in publications in 2023–2025 coincides with the expansion of ESG reporting requirements and investor demand for diverse and transparent governance practices, making board diversity a critical area of inquiry. Finally, the interdisciplinary nature of the topic spanning accounting, finance, management, sociology, and law has attracted contributions from multiple research domains, further fuelling the upward trend. Together, these drivers

highlight how board diversity, as well as its repercussions for firm performance have evolved from a niche research interest into a prominent and influential stream of academic inquiry.

RQ2: Which are The Most Cited Articles in The Field of Board Diversity and Firm Performance?

The most cited works in the field of board diversity and firm performance underscore the growing academic interest in linking diversity with broader dimensions of corporate responsibility and governance. Among the top contributions, M.H. Shakil (2021) stands out with 346 citations for his work on ESG performance as well as financial risk, highlighting the centrality of environmental, social, and governance (ESG) themes in current discourse. Similarly, S. Brahma et al. (2021) with 279 citations and N.S. Orazalin & M. Baidautetov (2020) with 277 citations, provide strong empirical evidence from the UK and CSR contexts, respectively, illustrating how board gender diversity has become an integral variable in examining firm outcomes. Other influential studies, such as those by Cordeiro et al. (2020) (209 citations) and Fernández & Tejerina-Gaite (2020) (201 citations), reinforce the importance of board composition in shaping environmental and financial performance, while bridging connections between governance structures, ownership, and firm outcomes. Collectively, these citation patterns indicate that the intersection of board diversity with ESG, CSR, and governance mechanisms has been a dominant research agenda in recent years.

The high citation counts of these works can be explained by several factors. First, the timeliness of the topic aligns with global regulatory reforms and investor expectations emphasizing diversity, sustainability, and accountability. Second, these studies provide empirical evidence across diverse contexts from the UK and US financial markets to emerging economies, making them widely applicable and frequently referenced in comparative studies. Third, the methodological rigor and integration of moderating variables such as CEO duality, ownership structure, and ESG controversies add depth to their findings, making them highly relevant for both academic and policy debates. Additionally, the prominence of 2020 – 2021 publications among the most cited works reflects how research during this period capitalized on heightened global attention to inclusivity and resilience in the aftermath of COVID-19. Overall, these highly cited studies represent cornerstones in the literature, shaping ongoing debates on how board diversity not only influences firm performance but also contributes to sustainable and responsible corporate practices.

Table 3: Top Ten Most Cited Authors

Authors	Year	Source title	Cited by
(Shakil, 2021)	2021	Resources Policy	346
(Brahma et al., 2021)	2021	International Journal of Finance and Economics	279
(Orazalin & Baidautetov, 2020)	2020	Corporate Social Responsibility and Environmental Management	277
(Cordeiro et al., 2020)	2020	Business Strategy and the Environment	209
(Fernández & Tejerina-Gaite, 2020)	2020	Corporate Governance (Bingley)	201
(Romano et al., 2020)	2020	Sustainability (Switzerland)	137

(Song et al., 2020)	2020	International Journal of Hospitality Management	121
(Shakil et al., 2020)	2020	International Journal of Bank Marketing	119
(Simionescu et al., 2021)	2021	Financial Innovation	95
(J. Wu et al., 2022)	2022	Human Resource Management	92

Source: Generated by author (s) using Scopus

RQ3: Which Countries Are the Top 10 Contributors in Terms of the Number of Publications on Board Diversity and Firm Performance?

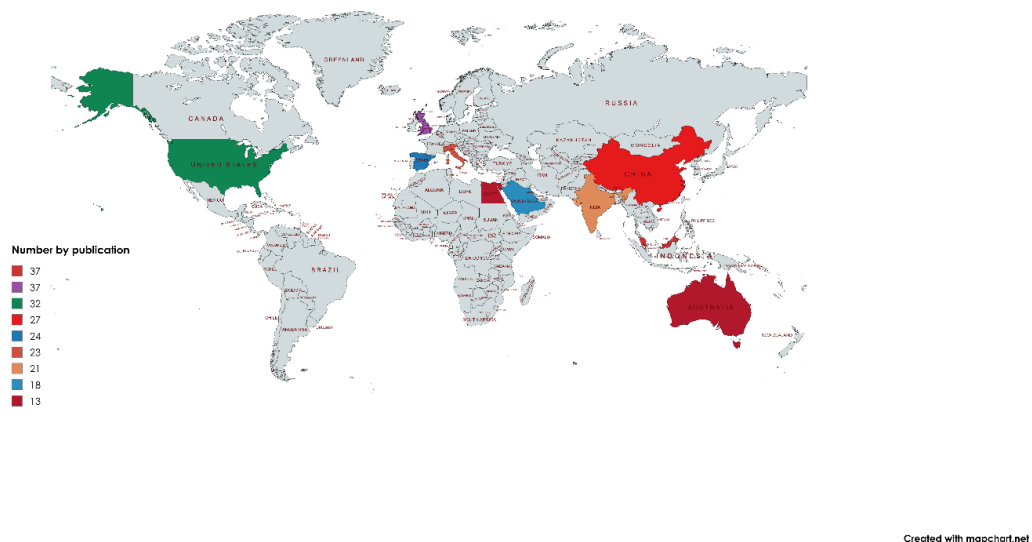


Figure 3: Top Ten Countries Mapping based on the Number of Publication

Source: Generated by author (s) using Scopus and Map chart

The distribution of publications on firm performance and board diversity highlights Malaysia and the United Kingdom as the leading contributors, with 37 publications each, followed closely by the United States (32) and China (27). These countries collectively dominate the research landscape, reflecting their strong academic interest in corporate governance practices and regulatory reforms related to diversity. Australia, Spain, and Italy also demonstrate substantial engagement, each contributing between 23–25 studies, while emerging economies such as India (21), Saudi Arabia (18), and Egypt (13) show growing but comparatively lower levels of scholarly output. The overall pattern indicates that both developed and developing nations are actively engaging with the diversity–performance debate, though the intensity of research activity varies depending on the maturity of governance frameworks, availability of data, and institutional emphasis on inclusivity.

Several factors explain these variations. Malaysia's high output can be attributed to the Malaysian Code on Corporate Governance (MCCG), which places strong emphasis on gender and ethnic representation on boards, thereby creating a fertile ground for academic studies. Similarly, the United Kingdom has long been at the forefront of governance reforms, with policies such as the UK Corporate Governance Code and gender diversity targets under the

Hampton-Alexander Review, driving scholarly interest. The United States' contributions are explained by the vast amount of publicly available firm-level data and the country's diverse corporate landscape, while China's growing research reflects its rapid economic development and increased regulatory focus on governance. Meanwhile, European countries such as Spain and Italy have introduced mandatory gender quota laws, stimulating academic debate. Emerging economies like India and Saudi Arabia are experiencing rising attention as reforms to improve female participation in boards and align with global ESG standards gain momentum. Egypt's lower count reflects a less developed governance framework, but its presence in the dataset highlights growing regional awareness of diversity issues. Collectively, these trends suggest that board diversity is a globally relevant issue, shaped by varying institutional, cultural, and regulatory contexts that influence both academic inquiry and policy development.

RQ4: What Are the Most Frequently Used Keywords in the Field of Board Diversity and Firm Performance?

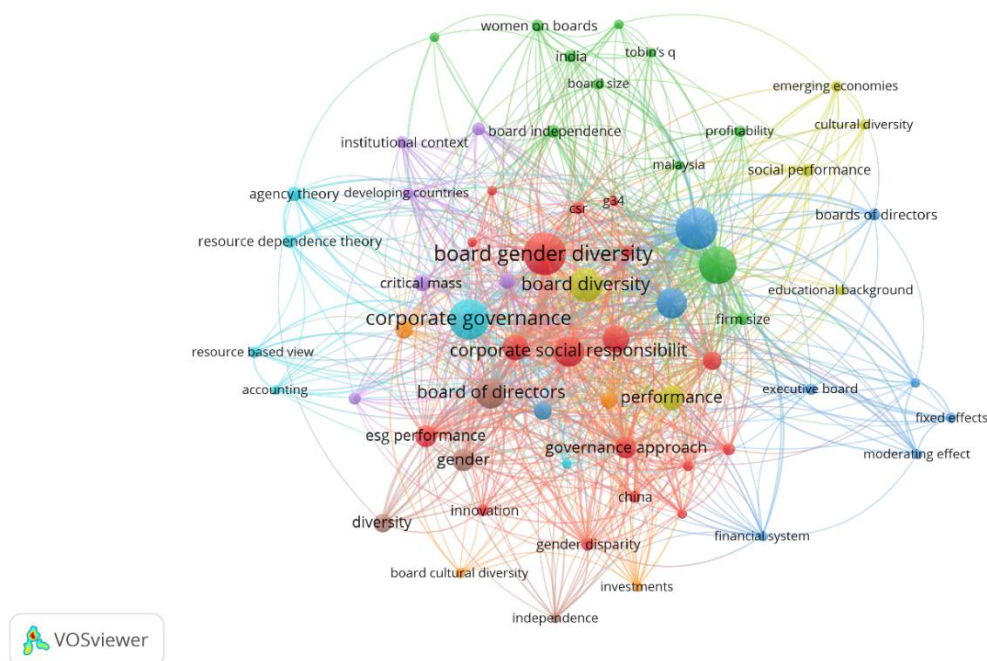


Figure 4: Network Visualisation of Co-Occurrence of Author's Keywords

Source: Generated by author (s) using VOSviewer

Co-occurrence analysis of author keywords using VOSviewer allows researchers to determine connections between concepts by examining how often keywords emerge together within published studies. This method maps the intellectual structure of a field, showing which topics are closely related and where clusters of research activity exist. In this analysis, the full counting method was applied, giving equal weight to each keyword appearance. A minimum occurrence threshold of 5 was set, which means only keywords appearing at least 5 times were included. Out of 658 total keywords, 64 met this threshold, and by setting the minimum cluster size to 5, the software grouped them into 8 clusters, each representing a specific thematic area in the literature.

The findings highlight how board diversity, gender diversity, and corporate governance dominate the research landscape, strongly linking them with firm performance, CSR, ESG, and Sustainability. This clustering reflects how diversity and governance issues have become central to explaining variations in corporate and financial performance while integrating with broader themes like stakeholder theory, agency theory, and institutional contexts. Emerging terms such as innovation, family firms, and developing countries further illustrate expanding directions of inquiry. Thus, the analysis contributes to the body of knowledge by not only reinforcing well-established connections between governance and performance but also signalling evolving intersections with sustainability, gender equality, and global perspectives, offering future researchers a roadmap of both mature and underexplored areas.

RQ5: What Are the Emerging and Popular Keywords That Indicate Future Research Directions in Board Diversity and Firm Performance?

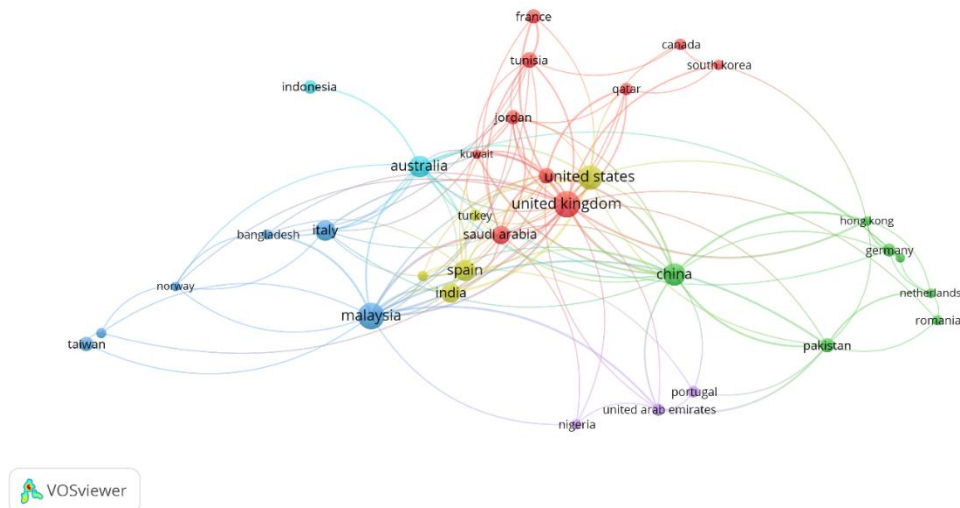


Figure 5: Network Visualisation for Co-Authorship by Countries

Source: Generated by author (s) using VOSviewer

Co-authorship analysis by countries in VOSviewer examines how often authors from different countries collaborate in academic publications, allowing researchers to identify international research networks and global knowledge-sharing patterns. This method is useful in understanding the geographical distribution of research, the strength of cross-country partnerships, and the role of certain countries as hubs of collaboration. In this study, the complete counting method was applied, in which each co-authorship relationship between countries is counted equally. A minimum occurrence threshold of 5 publications per country was set, and out of 69 total countries, 34 met the threshold. By applying a minimum cluster size of 5, the software generated 6 clusters, each representing a group of countries with stronger internal collaboration patterns.

The findings show that the United Kingdom, Malaysia, the United States, China, as well as Italy are among the most active contributors, with the UK and Malaysia leading in both publication numbers and co-authorship links. This indicates their central role in driving

collaborative research in the field, possibly due to strong academic networks, institutional partnerships, or policy support for international collaboration. The clustering highlights regional research ecosystems, such as Middle Eastern countries (Saudi Arabia, Egypt, Kuwait, UAE) forming collaborative groups, while European countries (Italy, Spain, France, Netherlands) represent another active cluster. These results enrich the body of knowledge by revealing not only the dominance of certain countries but also the emergence of developing nations in collaborative scholarship, pointing to increasing globalization and diversification in academic research.

Conclusion

The purpose of this study was to examine the intellectual structure, influential contributions, and emerging themes in the literature on board diversity and firm performance through a bibliometric approach. By analyzing publication patterns, citation performance, country contributions, and keyword co-occurrences, the research set out to address questions related to trends over time, the most cited works, the leading contributing countries, and the thematic focus of scholarship in this area.

The findings revealed a clear upward trend in publications between 2020 and 2025, reflecting the increasing global prominence of the significance of board diversity in moulding firm results. Highly cited studies have established strong connections between board composition, corporate governance, and sustainability, with particular emphasis on gender diversity. The analysis further highlighted the dominance of countries such as Malaysia, the United Kingdom, the United States, and China in driving scholarly output, while showing the rising participation of developing economies. Keyword mapping confirmed that “corporate governance,” “board gender diversity,” “financial performance,” and “sustainability” are central research themes, while emerging terms such as “innovation,” “family firms,” and “developing countries” indicate new directions for inquiry.

This research contributes to the field by clarifying the knowledge structure, identifying influential authors and institutions, and highlighting clusters of research that integrate governance, performance, and sustainability perspectives. Such insights enhance understanding of how board diversity has evolved into a multidisciplinary topic that influences not only financial performance but also corporate responsibility and long-term value creation. For practice, the results underscore the need for policymakers and corporate leaders to consider diversity not only as a compliance requirement but as a key catalyst for innovation, accountability, as well as global competitiveness.

Although the research offers an extensive mapping of the field, it is constrained to the Scopus database and publications in English, which may exclude relevant contributions indexed elsewhere. Future research could expand the dataset, apply longitudinal comparisons, or explore the mediating and moderating mechanisms that link board diversity with firm performance outcomes.

In conclusion, the bibliometric evidence demonstrates that board diversity has appeared as a crucial factor in advancing corporate governance and performance research. By offering a systematic overview of global contributions, this research develops a foundation for future scholarly work and emphasizes the value of bibliometric analysis in uncovering the intellectual pathways and emerging priorities in this evolving field.

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