Board Gender Diversity and ESG Performance: A Bibliometric Review

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Abstract

Board gender diversity has become an important topic in corporate governance literature due to its potential role in enhancing Environmental, Social, and Governance (ESG) performance and supporting corporate sustainability. Although studies on the relationship between board gender diversity and ESG have increased considerably, a comprehensive understanding of the research landscape remains limited. Therefore, this study aims to map the development of research on board gender diversity and ESG performance using a bibliometric approach. The analysis was conducted on 104 research articles indexed in the Scopus database published between 2015 and 2025. Bibliometric analysis was performed using VOSviewer to examine publication trends, leading countries and authors, keyword co-occurrence, and thematic evolution through network, overlay, and density visualizations. The results indicate a substantial increase in publications over the last decade, reflecting growing scholarly interest in this field. Italy was identified as the most productive country, while Bel-Oms, I. was the most productive author. Keyword analysis revealed that board gender diversity is the central research theme, strongly associated with ESG performance, corporate governance, ESG disclosure, sustainability, and corporate social responsibility. Overall, this study provides a comprehensive overview of the intellectual structure and emerging research trends, while identifying potential directions for future studies on board gender diversity and ESG performance.

Keywords: Board Gender Diversity, ESG Performance, Corporate Governance, Sustainability

INTRODUCTION

In recent years, corporate sustainability has emerged as one of the most strategic issues in both business practice and academic research (Kotsantonis & Serafeim, 2019). Growing concerns over climate change, environmental degradation, social inequality, and the increasing demand for more transparent corporate governance have transformed the way companies create value (Gillan et al., 2021; Atan et al., 2018). Whereas corporate success was previously measured primarily through financial indicators, companies are now also expected to demonstrate non-financial performance that reflects their responsibility toward the environment, society, and corporate governance (Friede et al., 2015). In this context, the concept of Environmental, Social, and Governance (ESG) has become one of the most widely adopted frameworks for evaluating corporate sustainability (Gillan et al., 2021; Berg et al., 2022). ESG performance has become not only a basis for investors in making investment decisions but also an important indicator for regulators, rating agencies, and other stakeholders in assessing the quality of corporate governance, a company's ability to manage risks, and its long-term value creation prospects (Itan et al., 2025; Friede et al., 2015).

The growing attention to ESG has also encouraged the expansion of research on various corporate governance mechanisms that can enhance the quality of ESG implementation. One of the mechanisms that has received the greatest attention is board gender diversity (Abdelkader et al., 2024). The presence of women on corporate boards is no longer viewed merely as a representation of gender equality but also as a strategic factor capable of improving the quality of corporate governance (Cambrea et al., 2023; Yarram & Adapa, 2021; Rao & Tilt, 2016). According to Resource Dependence Theory, gender diversity provides a broader range of resources through diverse experiences, competencies, professional networks, and perspectives, thereby enriching the decision-making process (Menicucci & Paolucci, 2024). More diverse boards are believed to enhance monitoring effectiveness, strengthen board independence, reduce managerial opportunistic behavior, and encourage companies to pay greater attention to the interests of stakeholders (Wu et al., 2024). Therefore, board gender diversity is increasingly regarded as an important factor that can support more effective ESG implementation.

These developments are reflected in the growing number of studies examining the relationship between board gender diversity and various ESG dimensions (Wasiuzzaman et al., 2023; Yarram & Adapa, 2021; Nerantzidis et al., 2022). Previous studies have not only focused on the influence of board gender diversity on ESG performance but have also linked it to ESG disclosure, corporate social responsibility, corporate sustainability, carbon emissions, green innovation, greenwashing, investment efficiency, and corporate value creation (Tong & Chen, 2024; Nicolò et al., 2022; Abbasi et al., 2024). Most studies report that the presence of women on corporate boards contributes positively to greater transparency, accountability, the quality of sustainability disclosure, and more long-term-oriented decision-making (Moreno-Ureba et al., 2022; Aabo & Giorici, 2023). Nevertheless, several other studies have reported different findings, indicating that the effect of board gender diversity on ESG performance is not always significant and may vary across countries and industry sectors (Yadav & Prashar, 2022; Nurbaity et al., 2025). These differences suggest that the relationship between board

gender diversity and ESG is influenced by various contextual factors, such as firm characteristics, ownership structure, corporate governance quality, legal systems, and the institutional environment in each country.

In addition to producing mixed findings, research on board gender diversity has experienced remarkably rapid growth over the past decade. This is reflected in the increasing number of scientific publications and the expanding scope of research topics. Whereas earlier studies primarily examined the relationship between board gender diversity, corporate governance, and financial performance, more recent research has begun to associate it with broader sustainability issues, such as sustainable investment, climate change, carbon emissions, greenwashing, environmental innovation, ESG disclosure, and long-term value creation (Tong & Chen, 2024; Nicolò et al., 2022; Abbasi et al., 2024). This development indicates that research on board gender diversity has evolved into a multidisciplinary field that integrates corporate governance, sustainability, finance, strategy, and management. The increasing complexity of these research topics highlights the need for a comprehensive mapping that can provide an overall picture of the direction of research development.

Although the number of publications on board gender diversity and ESG continues to increase, most existing studies still employ quantitative empirical approaches to examine the causal relationship between these two variables (Moreno-Ureba et al., 2022; Yasin, 2025; Alkhawaja et al., 2023; Wu et al., 2024). These studies generally focus on hypothesis testing within specific countries, industry sectors, or time periods, resulting in findings that remain fragmented and do not provide a comprehensive overview of the development of the research field as a whole. On the other hand, the bibliometric studies that have been published have mainly focused on board diversity, gender diversity, corporate governance, or corporate sustainability in general (Gayner & Abhinav, 2026) (Kumar et al., n.d.). These studies have not specifically mapped the development of the literature linking board gender diversity and ESG performance as their primary focus. As a result, publication trends, the contributions of countries and authors, research collaboration structures, and the conceptual themes that dominate this field have not yet been systematically documented. Such mapping is essential for understanding how the intellectual structure of a research field evolves, identifying well-established themes, discovering emerging topics, and providing directions for future research.

Based on these conditions, this study aims to analyze the development of research on board gender diversity and ESG performance through a bibliometric approach using publications indexed in the Scopus database during the 2016–2025 period. This study analyzes publication trends, the contributions of countries and authors, and maps the conceptual structure of the research through keyword co-occurrence analysis using VOSviewer software. Unlike empirical studies that focus on testing causal relationships, this study provides a comprehensive overview of the intellectual development of the field of board gender diversity and ESG, thereby identifying research development patterns, dominant themes, and opportunities for future research.

To achieve these objectives, this study addresses the following research questions.

RQ1. How have publication trends in research on board gender diversity and ESG performance developed during the 2015–2025 period?

RQ2. Which countries and authors have made the greatest contributions to the development of research on board gender diversity and ESG performance?

RQ3. What are the conceptual structure and dominant research themes in the literature on board gender diversity and ESG performance based on keyword co-occurrence analysis using VOSviewer?

This study is expected to contribute to the development of the literature on board gender diversity and ESG performance by providing a comprehensive bibliometric mapping based on publications indexed in the Scopus database. The findings not only provide an overview of publication trends and the contributions of authors and countries in this field but also identify the conceptual structure and emerging research themes. Therefore, this study is expected to serve as a reference for academics in understanding the evolving research landscape while providing a foundation for identifying future research opportunities.

RESEARCH METHODOLOGY

This study employs a bibliometric approach to map the development of research on board gender diversity and Environmental, Social, and Governance (ESG). The research data were obtained from the Scopus database, which is one of the largest scientific databases and is widely used in bibliometric research. The search was conducted in June 2026 using the following combination of keywords related to board gender diversity and ESG: ("board gender diversity" OR "gender diversity" OR "female directors" OR "women directors") AND ("ESG" OR "ESG performance" OR "ESG disclosure" OR "environmental, social and governance").

The search was limited to publications published during the 2015–2025 period, written in English, and consisting of research articles. In addition, the publications were restricted to the relevant subject areas of Business, Management and Accounting, and Economics, Econometrics and Finance to ensure their relevance to the research focus. The initial search yielded 178 documents. A screening process was then conducted based on the relevance of the titles, abstracts, keywords, and the overall relevance to the research topic. After the selection process was completed, 104 articles were retained as the sample for the bibliometric analysis.

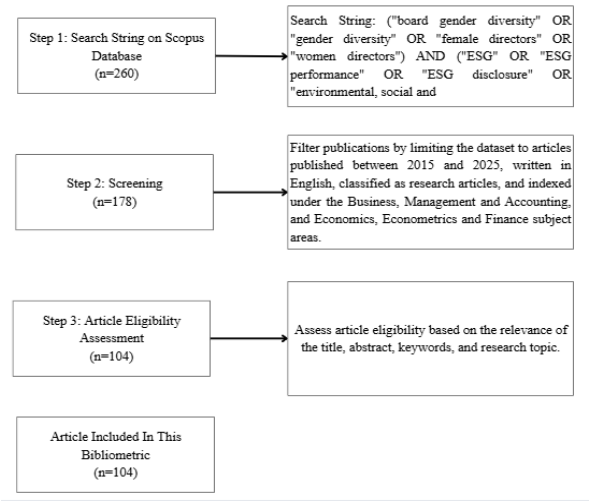


Figure 1. PRISMA flow diagram.

The data were analyzed using two analytical tools: the Analyze Search Results feature in Scopus and VOSviewer version 1.6.20. The Analyze Search Results feature was used to analyze publication characteristics based on annual publication trends (documents by year), the distribution of publications by country (documents by country), and the most productive authors (documents by author). Subsequently, VOSviewer was used to map the conceptual structure of the research through keyword co-occurrence analysis using author keywords as the unit of analysis and the full counting method. The visualizations generated include network visualization, overlay visualization, and density visualization. Network visualization was used to identify the relationships among keywords and to form research theme clusters, overlay visualization was used to illustrate the evolution of research topics based on the average publication year, while density visualization was used to identify the most dominant topics in the literature.

RESULTS AND DISCUSSION

PUBLICATION TREND

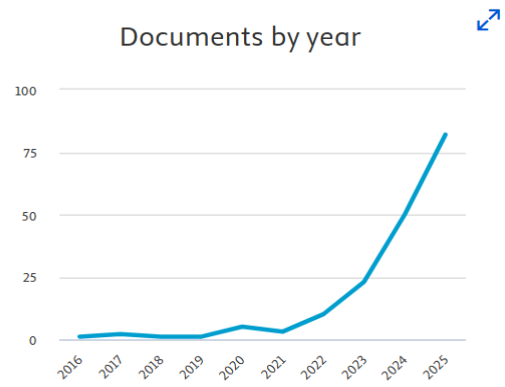


Figure 2. Publication Trend

Figure 2 illustrates the development of publications on board gender diversity and Environmental, Social, and Governance (ESG) during the 2015–2025 period based on the 104 articles analyzed. Overall, the number of publications shows a continuously increasing trend throughout the observation period. At the beginning of the study period, the number of publications was relatively limited but began to increase from 2022 onward. This growth became more significant during the 2023–2025 period, indicating the growing interest of academics in the relationship between board gender diversity and ESG implementation.

The increasing publication trend indicates that board gender diversity has developed into one of the key topics in corporate governance and sustainability research. The development of regulations related to board diversity, the increasing adoption of ESG reporting practices, and the growing attention of investors to sustainability issues are among the factors driving the increase in research in this field. In addition, the broader implementation of ESG across various countries has expanded the scope of research beyond corporate governance to include sustainability, corporate social responsibility, climate change, and corporate value creation.

Overall, the continuously increasing publication trend indicates that research on board gender diversity and ESG remains in the growth stage. This condition suggests that the field continues to offer substantial opportunities for further development, both through empirical investigations in different country contexts and through the exploration of new sustainability-related research themes.

COUNTRY ANALYSIS

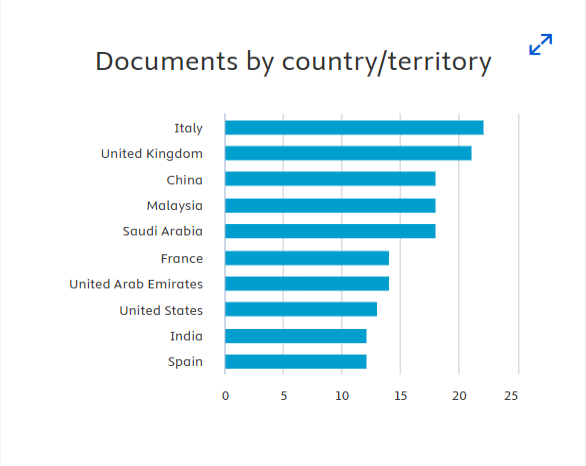


Figure 3. Documents by Country

Figure 3 presents the distribution of publications by the authors' countries of affiliation. The results show that research on board gender diversity and ESG has been conducted across various countries, reflecting the growing global attention to gender diversity in corporate governance and ESG implementation.

Based on the number of publications, Italy is the leading contributor with 22 articles. The United Kingdom ranks second with 21 articles. China, Malaysia, and Saudi Arabia each contributed 18 articles. Other countries with substantial contributions include France and the United Arab Emirates, followed by the United States, as well as India and Spain.

The dominance of these countries indicates that research on board gender diversity and ESG is not only expanding in developed countries but is also increasingly being conducted in developing countries. The large number of publications from European and Asian countries suggests that gender diversity on corporate boards and ESG implementation have become issues of international concern from both corporate governance and business sustainability perspectives.

AUTHOR ANALYSIS

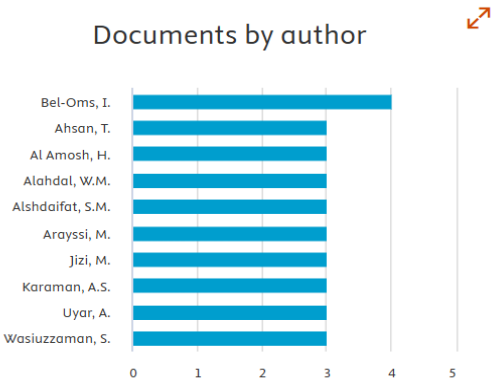


Figure 4. Documents by Author

The author productivity analysis was conducted to identify the researchers who have been the most active in advancing research on board gender diversity and ESG. Figure 4 shows that Bel-Oms, I. is the most productive author, with a total of four publications.

Several other authors, including Ahsan, T., Al Amosh, H., Alahdal, W.M., Alshdaifat, S.M., Arayssi, M., Jizi, M., Karaman, A.S., Uyar, A., and Wasiuzzaman, S., have each published three articles on this research topic.

These findings indicate that research on board gender diversity and ESG has not yet been dominated by a single author. Instead, publication productivity is relatively dispersed among several researchers from different countries and institutions. This suggests that the field is still evolving and involves numerous research groups contributing to the expansion of studies on the relationship between board gender diversity and ESG implementation.

Keyword Co-occurrence Analysis

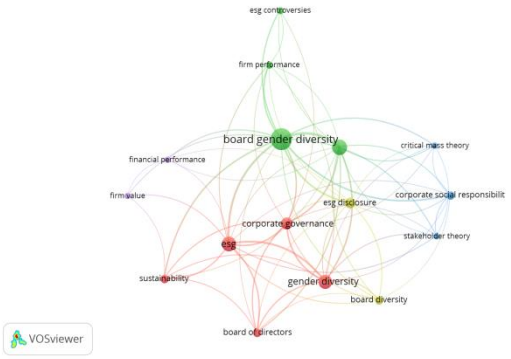


Figure 5. Network Visualization

The keyword co-occurrence analysis using VOSviewer was conducted to identify the conceptual structure of research on board gender diversity and Environmental, Social, and Governance (ESG). By applying a minimum occurrence threshold of five, a total of 16 keywords were identified and grouped into five clusters based on the strength of the relationships among the keywords.

As shown in Figure 5, board gender diversity is the most dominant keyword and represents the central node of the research network. This keyword has strong connections with ESG performance, ESG, gender diversity, corporate governance, ESG disclosure, and board diversity. These findings indicate that research on board gender diversity is not only focused on board diversity itself but is also closely associated with ESG implementation and corporate governance mechanisms.

In addition to illustrating the relationships among keywords, the network visualization also reveals the formation of five interconnected clusters. This indicates

that research on board gender diversity has expanded to encompass various themes, including corporate social responsibility, stakeholder theory, critical mass theory, corporate sustainability, and corporate performance. Therefore, the network visualization demonstrates that research on board gender diversity and ESG is a continuously evolving field characterized by strong interconnections among research topics.

OVERLAY VISUALIZATION

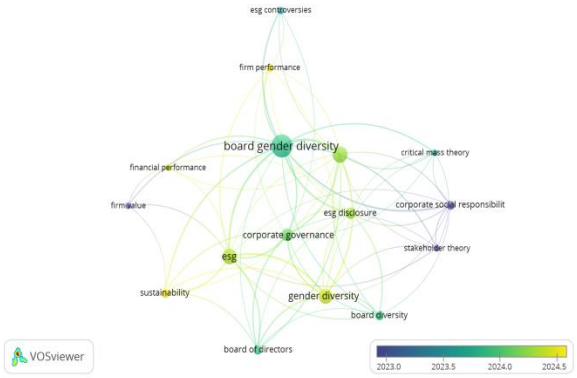


Figure 6. Overlay Visualization

The overlay visualization was used to illustrate the development of research topics based on the average publication year of each keyword. Blue represents topics that were studied earlier, whereas yellow represents relatively more recent topics.

As shown in Figure 6, board gender diversity has remained the primary research theme throughout the study period. However, more recent studies have increasingly associated gender diversity with ESG, ESG performance, ESG disclosure, corporate governance, gender diversity, and sustainability. This finding indicates a shift in research focus from discussions of board diversity in general toward evaluating the contribution of women on corporate boards to corporate sustainability practices.

In contrast, keywords such as corporate social responsibility, stakeholder theory, and critical mass theory have earlier average publication years. This finding indicates that these three topics have served as the conceptual foundations supporting the development of research on the relationship between board gender diversity and ESG.

DENSITY VISUALIZATION

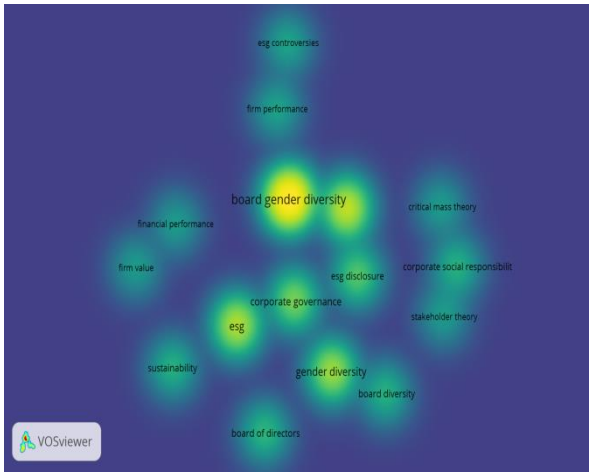


Figure 7. Density Visualization

Density visualization analysis was conducted to identify the research intensity based on the frequency of keyword occurrences and the relationships among keywords. The brighter the color displayed, the higher the research intensity on that particular topic.

As shown in Figure 7, board gender diversity is the keyword with the highest research density, as indicated by the bright yellow color at the center of the visualization. This finding suggests that this topic represents the primary focus of research on the relationship between board gender diversity and ESG.

In addition, the keywords ESG, gender diversity, corporate governance, and ESG disclosure also exhibit high research density, indicating that these topics are frequently examined together. In contrast, keywords such as firm value, financial performance, critical mass theory, and ESG controversies show relatively lower research density. This indicates that research on these topics

remains limited, thereby presenting potential opportunities for future studies.

Overall, the density visualization results demonstrate that research on board gender diversity and ESG has developed rapidly. Nevertheless, several themes remain relatively underexplored, providing opportunities for further research in the future.

CONCLUSION

This study aims to map the development of research on board gender diversity and Environmental, Social, and Governance (ESG) through a bibliometric approach using publications indexed in the Scopus database during the 2016–2025 period. The findings indicate that research on board gender diversity and ESG has experienced rapid growth, as reflected in the increasing publication trend over recent years. The country-based analysis shows that Italy and the United Kingdom are the largest contributors to publications, while the author productivity analysis indicates that research in this field is still developing and has not yet been dominated by any particular author. Furthermore, the keyword co-occurrence analysis identifies board gender diversity as the primary theme, which is closely associated with ESG performance, ESG disclosure, corporate governance, and gender diversity. The overlay and density visualization results also show that the research focus has evolved from board diversity issues toward broader discussions on ESG implementation, corporate sustainability, and corporate governance practices oriented toward long-term value creation.

This study contributes by providing a comprehensive bibliometric mapping of the development of the literature on board gender diversity and ESG based on publications indexed in Scopus. Through the analysis of publication trends, country and author productivity, and the visualization of the conceptual structure using VOSviewer, this study provides an overview of the intellectual development of this research field while identifying the dominant research themes and their directions of development. The findings of this study are expected to serve as a reference for academics and researchers in understanding the research landscape of board gender diversity and ESG and to provide a foundation for further research in the fields of corporate governance and sustainability.

Nevertheless, this study has several limitations, as it only includes publications indexed in the Scopus database during the 2015–2025 period and therefore does not cover the entire body of literature available in other databases. Accordingly, future research is recommended to expand the database coverage by incorporating sources such as Web of Science, Dimensions, or Google Scholar, as well as combining bibliometric approaches with systematic literature reviews or content analysis to obtain a more comprehensive understanding of theoretical developments and empirical findings. In addition, future studies may explore topics that remain relatively underrepresented in the literature, such as greenwashing, climate change, carbon emissions, environmental innovation, as well as the role of institutional factors and firm characteristics in influencing the relationship between board gender diversity and ESG implementation.

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