

Exploring the Intersection of Board Gender Diversity, Culture, and ESG Reporting: A Bibliometric Study

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Abstract

This study provides a bibliometric and content analysis on selected scholarly work in the realms of board gender diversity and ESG reporting. The study analyzed 383 articles published between 1998 and 2023 from the Scopus database. Using both Vosviewer and Biblioshiny R-package, numerical and visualization techniques are used to examine the literature. The results show an upsurge in publications of articles within this domain, indicating their relevance and importance in the current business landscape. The review concludes that board gender diversity is integral to ESG outcomes and sustainable corporate practices, but culture and institutional characteristics need to be considered when generalizing the findings. Thus, context-specific strategies could play a pivotal role to further enhance the relationship between board gender diversity and ESG outcomes. This study has significant implications for policymaking, business strategies, societal decisions, and academic research, which could contribute to quality sustainability reporting and business sustainability.

Keywords: Board Gender Diversity, Culture, Corporate Reporting, ESG Reporting, CSR, Sustainability Reporting, Bibliometric Analysis, Content Analysis.

Introduction

The current corporate environment no longer exclusively focuses on financial profitability as non-financial aspects and their reporting have taken center stage (Beloskar, V. D. et al., 2023; Nuber, C., & Velte, P., 2021; Hoang, T., 2018). Non-financial reporting, e.g., environmental, social and governance reporting (ESG reporting) is gaining traction amongst stakeholders as companies' non-financial initiatives are currently being acknowledged as a focal point in assessing the overall performance and long-term sustainability. Environmentally, firms are expected to report on their initiatives and contributions to reducing the impact of carbon emissions on the ecosystem (Luo, L., & Tang, Q., 2023; Mahapatra, S. K. et al., 2021; Braam, G. J., 2016). The social element encompassing labor practices, diversity, inclusion, (Barrera-Martínez, J., 2019), and community contribution demonstrate a commitment to an ethical and socially responsible system and as such, should be reported (Jain, A., 2024; Becchetti, L., 2022; Mani, V., et al., 2018). Governance practices within an organization are another critical element in ESG reporting (Chouaibi, S., & Affes, H., 2021; Arvidsson, S., & Dumay, J., 2022) as it embodies an ethical framework and guide the decision-making processes within the business. As documented by Bose, S., (2020), ESG reporting enables companies to make positive contributions to society and the environment, by aligning their strategies with long-term sustainability and fostering sustainable wealth creation. This action is timely as stakeholders are increasingly prioritizing companies that are committed to responsible and ethical practices, thus ESG reporting has become a pivotal tool for fostering trust, enhancing corporate reputation, and ultimately steering organizations towards a more sustainable and socially conscious entity.

In that context, to meet stakeholders' demand for ESG reporting, regulatory bodies worldwide are actively promoting and standardizing ESG reporting to ensure consistency, comparability, and reliability of disclosed information. The Global Reporting Initiatives, a prominent international standard setter, provides guidelines for organizations to report on various sustainability dimensions, emphasizing the importance of

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transparency and accountability (Zhu et al., 2024b). Additionally, the task force on climate-related financial disclosures framework, specifically, addressing climate-related risks, and opportunities, urging companies to disclose information related to governance, strategy, risk management, and metrics and targets. On a regional level, the European Union has been at the forefront of advancing ESG reporting, through initiatives, like the non-financial reporting directives, which oblige certain large companies to disclose non-financial and diversity information in management reports. In the United States, the Securities and Exchange Commission (SEC) is actively exploring ways to enhance and standardize climate-related disclosures, signaling a growing emphasis on ESG reporting within the American regulatory landscape (Cubas-Díaz & Martínez Sedano, 2018; Luo & Tang, 2022; Rahi et al., 2021; Raman et al., 2023)].

The importance and significance of ESG reporting cannot be suppressed, and this research aims to explore the scholarly discussion of a specific domain that could contribute to ESG reporting, i.e., the influence of *board gender diversity* and *culture* on ESG reporting. The perspective of board gender diversity in boardrooms and culture is likely to be instrumental in fostering a more comprehensive and pronounced approach towards ESG reporting (Eissa, A.M. et al., 2024). Board gender diversity and cultural beliefs could enhance diverse perspectives and inclusive decision-making processes, thus overcoming existing challenges and enriching the understanding of environmental and social dynamics, employee and community welfare, and governance (Leong, M.S.W et al., 2015). Furthermore, having significant representation of women in leadership roles could enhance ESG initiatives and reporting due to a wider array of abilities and perspectives. The primary motivation of this study is the increasing acceptance of women's role in organizations' leadership positions and the role of culture on all aspects of doing business, specifically on ESG and governance-related matters.

To date, there are several recent review-based studies examining board diversity and ESG reporting [f.e. Almaqtari et al., 2023; Arayssi et al., 2016; Gao et al., 2022; Khatib et al., 2023; Lewa et al., 2024; Seow, 2023; Shakil, 2021; Singhania & Chadha, 2023; Tsang et al., 2023). The study by Khatib et al., (2023) highlighted the significance of gender diversity in board diversity studies but suggested that further studies are warranted to examine the impacts on other organizational characteristics, thus the emergence of the current review study which links board gender diversity, and culture to ESG reporting. (Tsang et al., 2023) conducted a comprehensive study on CSR disclosure, but board gender diversity and culture were not a highlight of the study. On the other hand, (Seow, 2023) undertook a review-based study on ESG disclosure and suggested future research on the impacts of *culture* on ESG disclosures, but there was no mention of the importance of board gender diversity on ESG disclosure, which is currently an important scholarly discussion. Last but not least, a comprehensive scientometric analysis of sustainability reporting was conducted by (Singhania & Chadha, 2023), suggesting potential future research in terms of digital technology on sustainability reporting, which undeniably is another critical area of research. Drawing from the content of the abovementioned research and the suggestion of potential future research, this study intends to extend the contribution to the extant literature by examining two contemporary areas of scholarly discussion – the roles of board gender diversity and culture on ESG disclosure.

It is expected that the outcome of this study will contribute to the comprehension of the wider consequences of board diversity and culture on the governance in general. To achieve the said objectives, the study employed a bibliometric and content analysis approach. Bibliometric analysis identifies publication trends, prominent articles, researchers, and sources, whilst content analysis enables a qualitative investigation into research content, facilitating the identification of potential future research. This dual method offers a thorough knowledge of the current scholarly discourse. This study is likely to contribute to several stakeholders; it may support policymakers to further understand the involvedness of board gender diversity and culture in the process of ESG reporting and thus, develop appropriate regulations that support equal representation of women, and cultural considerations, which could improve corporate governance structures and firm performance. Businesses, on the other hand, could take important cues from this study on the importance of board gender diversity and cultural norms on ESG reporting and thus strategize and execute appropriate sustainability initiatives. These initiatives could further enhance investors' confidence and boost bottom-line results. Finally, the expected outcome from this study could

assist future researchers in potential academic studies on board gender diversity, culture and ESG initiatives and reporting.

Research Methodology

This study has used the Scopus database as the data source has wide academic journal coverage (Q. Huang & Liu, 2019; Khan et al., 2022). Bibliometric methodology (Baker et al., 2020, 2023) is employed to examine the extant literature and its scholarly discussion about board gender diversity and ESG reporting. As noted in most review-based studies (Baker et al., 2023), Bibliometrix R-package (Biblioshiny) and VOSviewer is utilized in this study.

The following research questions (RQs) are addressed:

RQ1: What are the publications trends, prominent sources, documents, and authors on board gender diversity, culture and ESG reporting?

RQ2: What are the major clusters or themes identified from this review-based study on board gender diversity, culture and ESG reporting?

RQ3: What are the potential future research areas on board gender diversity, culture and ESG reporting?

The proceeding section delineates data extraction and analysis.

Data Extraction

The data extraction commenced in March 2024 with the search for articles, using the Scopus database in the title, abstract, or keyword list; “ESG reporting” OR “Environmental, Social and Governance Reporting” and “Board Gender diversity” and “culture” which turned up 6946 scholarly works. Strict inclusion and exclusion criteria were applied; a citation topic search was carried out with the use of the keywords "Economics," "Gender & Sexuality Studies," and "Management," which narrowed the results to 402 scholarly works. Thereafter, limiting our scope to articles published in the English language from the domains of Economics, Business, Business Finance, Management, Women's Studies, Family Studies, Social issues, Social work, and Psychology multidisciplinary, a total of 383 scholarly works were identified. The search results were further filtered by selecting the document types "Article" or "Early Access," published between 1998 and 2023, thus resulting in the final corpus of 312 articles. For the content analysis, this study ranked all the journals using ABDC metrics and decided to critically examine articles published in the A and A* journals only as these journals are recognized for their high academic rigor. This resulted in 34 articles. A further manual reading of the entire articles eliminated another 4 articles not relevant to the topic of discussion, resulting in a final corpus of 30 articles that are discussed under the content analysis.

Data Analysis

This study undertook both quantitative and qualitative approaches. For the quantitative analysis, we used the Bibliometrix R-package (Biblioshiny) (Aria & Cuccurullo, 2017) and analyzed the publishing trends, prolific authors, publications, and prominent sources. Authors' affiliations and country collaborations are also documented. As for the qualitative analysis, we used the VOSviewer software (Yasmeen Ansari, et al., 2022; Hasan Ejaz; Baker et al., 2020; Khan et al., 2022; van Eck & Waltman, 2009) and analyzed the keywords network visualization. Additionally, the study undertook a content analysis, whereby 30 top journal publications were critically reviewed (Sheela, S et al., 2024). The ultimate purpose is to comprehend the scholarly discussion on board gender diversity and ESG reporting, thus enabling the identification of gaps and suggestions for potential future research. The findings of this synthesis could add to the extant literature on board gender diversity, culture and ESG reporting and provide insightful information to all stakeholders; policymakers, business leaders; investors, and the community at large.

Results & Findings

Publication By Year on Board Gender Diversity and ESG Reporting

Figure 1. demonstrates the publication trends for the period, 2018 to 2024. The trend indicates a gradual increase in publications for the years 2018 and 2019 but significant growth is noted from 2020 onwards – with a peak in 2023 (67 publications). This surge in the number of publications in 2023 is an indication of growing acknowledgment and research interest amongst researchers in the area of board gender diversity, culture and ESG. The scholarly academic community recognizes the importance of promoting inclusivity in all aspects of an organization, including the boardroom and cultural values and believes. The importance of gender parity and its beneficial impact on an organization's decision-making, particularly in the context of ESG, is also recognized by scholars. Therefore, extensive research on gender diversity on boards, culture and ESG reporting from a worldwide viewpoint would benefit all parties involved.

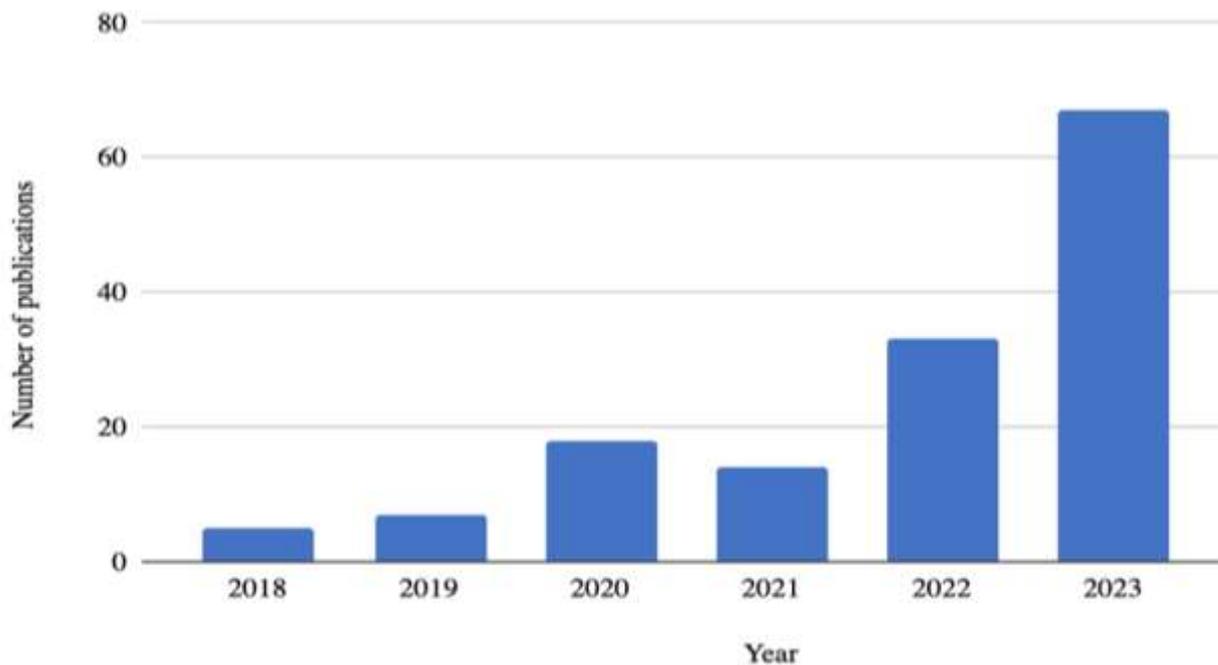


Figure 1. The Growth Trends of The Number of Publications Included in The Database Relating to Gender Diversity on Boards, Culture and ESG Reporting in the Years 2018-2023

Source: Own elaboration based on Scopus database.

Most Prominent Sources (Journals) On Board Gender Diversity, Culture and ESG Reporting

Table 1. displays the prominent journals that have published articles related to board gender diversity, culture and sustainability reporting, suggesting the relevance of this subject matter in current times. It is noted that esteemed journals such as Business Strategy and the Environment, British Accounting Review, Finance Research Letters, International Review of Financial Analysis, and Journal of Business Research have published articles in this domain of research, signifying its significance, acknowledgment, and the growing importance of board gender diversity, culture and ESG amongst scholars. These journals are published by esteemed publishers such as John Wiley, Emerald, and Elsevier Inc., which is another indication of the scholarly importance and significance of this area of research. It also highlights the utmost relevance of these governance studies to all stakeholders, i.e., business practitioners, investors, regulators, and the public in general.

Table 1. Most Prominent Sources (Journals) on Board Gender Diversity, Culture and ESG Reporting

Journal title	Number of documents	Citations	Publisher	SJR	ABDC	ABS
Business Strategy and the Environment	6	544	John Wiley and Sons Ltd	Q1	A	3
British Accounting Review	1	446	Elsevier	Q1	A*	4*
Journal of Business Research	2	415	Elsevier	Q1	A	3
Journal of International Financial Markets, Institutions and Money	1	183	Elsevier	Q1	A	3
Tourism Management Perspectives	1	159	Elsevier	Q1	A	2
International Journal of Bank Marketing	1	86	Emerald Group Publishing Ltd.	Q2	A	1
International Journal of Managerial Finance	2	63	Emerald Group Publishing Ltd.	Q2	A	2
Journal of Accounting Research	1	52	Wiley-Blackwell Publishing Ltd	Q1	A*	4*
Global Finance journal	1	31	Elsevier	Q2	A	2
International Journal of Intercultural Relations	1	11	Elsevier	Q1	A	1
Finance Research Letters	4	10	Elsevier BV	Q1	A	2
International Review of Financial Analysis	3	8	Elsevier Inc.	Q1	A	3

Source: Own elaboration based on Scopus database.

Most Prominent Researchers on Board Gender Diversity, Culture and ESG Reporting

Table 2. lists notable intellectuals whose scholarly endeavors on board gender diversity, culture and ESG initiatives and reporting have received widespread academic attention. These academics have made significant contributions to the field of gender diversity, culture and sustainability practices. Bryan Husted, with the most citations (16,120), illustrates the significant importance and acknowledgment of his work in aligning gender diversity to ESG outcomes. The intellectual relevance and significance of this research subject are further highlighted by Alexander Dyck and Ali Uyar, who have citation counts of 14,093 and 7,492, respectively. Authors such as Thi Hong Van Hoang, Muhammad Azeem Qureshi, and Binh Bui, with their considerable citations, indicate the expanding academic acknowledgment and significance of research on the link between corporate governance and ESG, highlighting its critical role in shaping sustainable corporate practices. It is worth noting that most authors are from Europe. A larger academic concentration and competence in these areas within Europe may result from the region's awareness of gender diversity, corporate sustainability, and ESG reporting. To present a more complete global viewpoint, researchers from the Asian region must be further encouraged to explore and publish quality output in this domain of study as Asian researchers can provide localized information, specifically on the impacts of culture, that are essential for developing pertinent and efficient ESG frameworks that are cognizant of regional differences.

Table 2. Most Prominent Researchers on Board Gender Diversity and ESG Reporting

Researchers	Citation	Affiliation	Country
Bryan Husted	16120	Tecnológico de Monterrey	Mexico
Alexander Dyck	14093	University of Toronto	Canada
Ali Uyar	7492	Excelia Business School	France
Thi Hong Van Hoang	1887	Montpellier Business School	France
Muhammad Azeem Qureshi	1710	Oslo Metropolitan University	Norway
Binh Bui	1697	Macquarie University	Australia
Ali Meftah Gerged	1680	The University of Sheffield	England
Faizul Haque	1647	University of Southampton	England
Mohammad Hassan Shakil	1304	Norwegian University of Science and Technology	Norway
Francisco Bravo Urquiza	1217	Universidad de Sevilla	Spain

Source: Own elaboration based on Scopus database.

Most Prominent Articles on Board Gender Diversity and ESG Reporting

Table 3. shows the top 10 articles and their scholarly impact on board diversity, culture and ESG initiatives and reporting. (Haque, 2017a) highlights a positive relationship between board independence, gender diversity, and carbon reduction initiatives, along with an association between environment-social-governance-based compensation policy and initiative. (Qureshi et al., 2020a) extends to European contexts, examining sustainability disclosure and board diversity's effect on firm value. It further supports the above study and documents the positive relationship between gender diversity and ESG disclosures. (Lu & Wang, 2021a) examines how corporate governance and cultural background affect firms' environmental performance and CSR disclosure globally, concluding that CEO non-duality, ESG committees, and gender-

diverse boards enhance ESG consequences, supporting the theory of voluntary disclosure. These studies collectively enhance our comprehension of gender diversity's role and culture in fostering sustainable corporate governance, reflecting the diverse cultural, legal, and economic landscapes across the globe. This comprehensive body of work underscores the critical importance of incorporating gender perspectives and cultural ethos into ESG strategies to achieve sustainable global corporate practices. Nevertheless, (Husted & Sousa-Filho, 2019a) suggests that board independence has a positive impact on ESG disclosure, but gender diversity inversely affects ESG reporting in Latin America, indicating an interesting avenue for future research in other regions.

Table 3. Most Prominent Articles on Board Gender Diversity and ESG Reporting

Researcher	Article Title	Citation	Country
(Haque, 2017a)	The effects of board characteristics and sustainable compensation policy on carbon performance of UK firms	446	UK
(Husted & Sousa-Filho, 2019a)	Board structure and environmental, social, and governance disclosure in Latin America	414	Brazil, Mexico, Colombia, Chile
(Qureshi et al., 2020a)	The impact of sustainability (environmental, social, and governance) disclosure and board diversity on firm value: The moderating role of industry sensitivity	235	European countries
(Lu & Wang, 2021b)	Corporate governance, law, culture, environmental performance and CSR disclosure: A global perspective	183	Global
(Uyar et al., 2020a)	The link among board characteristics, corporate social responsibility performance, and financial performance: Evidence from the hospitality and tourism industry	159	Global
(Bravo & Reguera-Alvarado, 2019a)	Sustainable development disclosure: Environmental, social, and governance reporting and gender diversity in the audit committee	142	Spain
(De Masi et al., 2021)	Toward sustainable corporate behavior: The effect of the critical mass of female directors on environmental, social, and governance disclosure	90	Italy
(Shakil et al., 2020)	Board gender diversity and environmental, social and governance performance of US banks: moderating role of environmental, social and corporate governance controversies	86	US
(Dyck et al., 2023a)	Renewable Governance: Good for the Environment?	52	41 countries
(Bristy et al., 2021)	Gender diversity: the corporate social responsibility and financial performance nexus	33	US

Source: Own elaboration based on Scopus database.

Keywords Analysis

As shown in the network visualization, four clusters are identified.

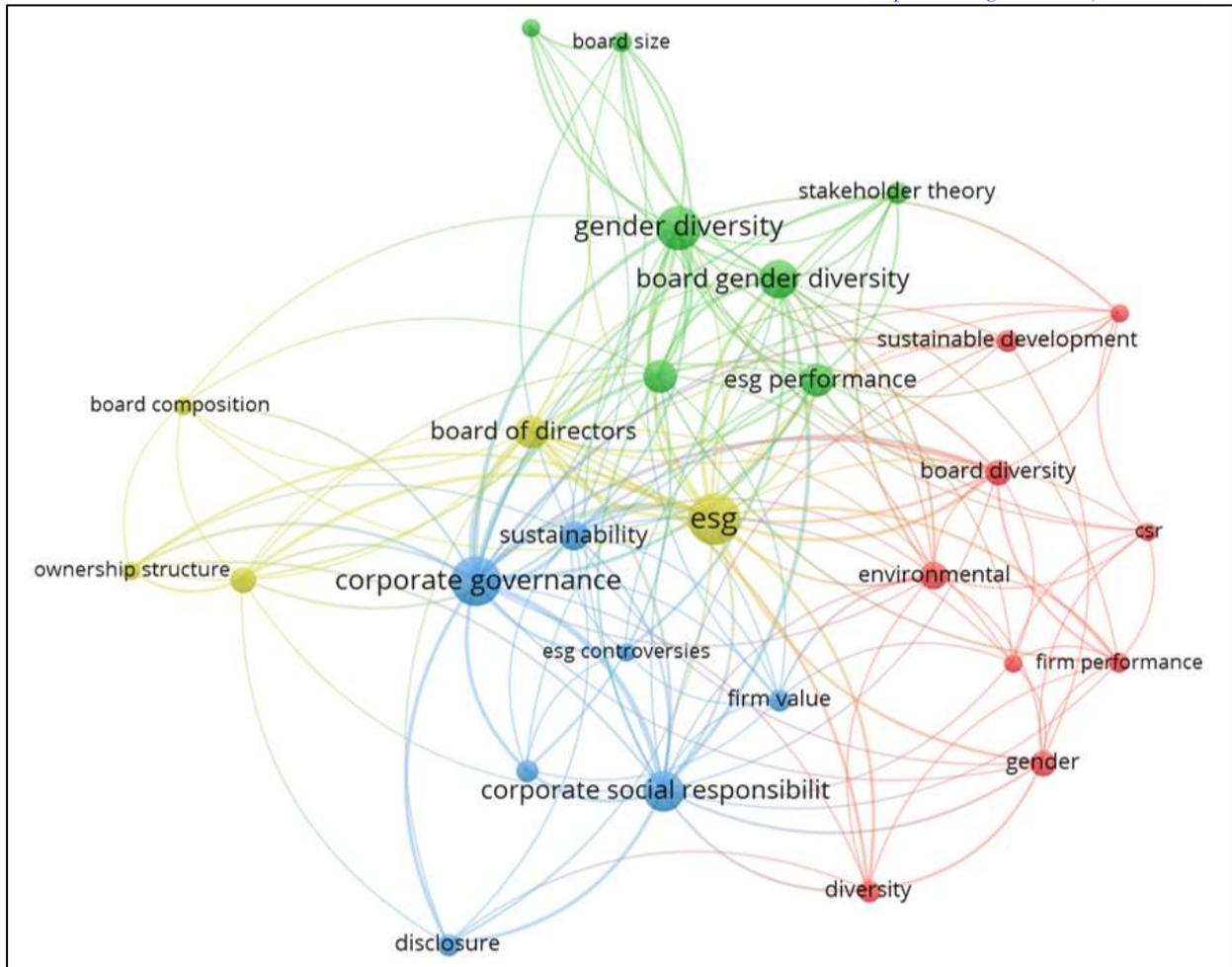


Figure 2. A Network Visualization of Keywords in Publications Included in Scopus` Database Relating to Board Gender Diversity, Culture and ESG Reporting

Source: Authors` elaboration based on Scopus and VOSviewer

These clusters are characterized by the main concentration of the keywords and are presented by color:

Yellow Cluster – ESG And Board Composition

The yellow cluster focuses on the concept of ESG and board. It includes terms like ESG, board composition, board of directors, and ownership structure. These terms all relate to the internal mechanisms a company uses to direct, manage, and hold itself accountable. Studies suggest a link between boards with directors possessing ESG expertise and increased ESG disclosures and focus (f.e. (Arayssi et al., 2020). Board diversity in terms of members` backgrounds, including gender and ethnicity (cultural beliefs), implies governance that takes into account a broader range of ESG factors [e.g. (Nuhu & Alam, 2024)]. Another factor determining the approach to ESG in management is the ownership structure. Small institutional investors who care about advancing the concept of sustainability can put pressure on management to prioritize these issues. However, the impact of family ownership on ESG is not clear: research indicates that family businesses may engage in ESG, while other research suggests that due to the higher costs of ESG-related activities, it is abandoned (Al Amosh & Khatib, 2021).

Blue Cluster – Corporate Governance and Gender Diversity

The blue cluster is related to corporate governance. It illustrates the relationship between corporate governance and gender diversity, as well as with sustainable business development. It also shows the links between corporate governance and ESG disclosure controversies, such as greenwashing, bluewashing, social washing, and pinkwashing. According to the demonstrated connections in this cluster, there is a strong positive correlation between good corporate governance practices and firm value (Ammann et al., 2011; Fijalkowska et al., 2018; Gangi et al., 2020; Girerd-Potin et al., 2014). This is because ESG practices, in particular, improve the image and brand of a socially responsible entity, attract employee talent, improve customer loyalty, and can also attract external financing from diverse investors.

Red Cluster – Board Diversity, Firm Performance and Sustainable Development

The red cluster centers on performance, based on keywords like sustainable development, firm performance, board diversity, and gender. A growing body of evidence suggests that sustainable development, achieved through strong ESG practices, can lead to improved firm performance. Moreover, some research suggests that strong ESG performance is increasingly recognized as a driver of long-term corporate value creation (Zumente & Bistrova, 2021), whereas board diversity, particularly gender diversity, can contribute to a company's commitment to sustainable development (Ibrahim & Hanefah, 2016; Kim & Li, 2021; Rao & Tilt, 2015). Some empirical research has proved that a critical mass of at least three female directors is necessary to improve ESG performance and that executive women directors represent a crucial component of board mechanisms, in terms of aligning the needs of stakeholders, since they increase ESG performance (Cambrea et al., 2023a). Independent boards can hold management accountable for integrating ESG factors into their strategies (Birindelli et al., 2018; Gerged et al., 2023a).

Green Cluster – Board Gender Diversity, Stakeholder Theory and ESG Performance

The green cluster highlights the importance of board gender diversity, ESG performance, and stakeholder theory. Stakeholder theory allows us to understand the importance of the impact of gender diversity on the board in improving ESG performance. Research shows that gender-diverse boards support and understand the diverse needs of stakeholders. Thus, through appropriate disclosures that consciously respond to the information needs of report users, they contribute to creating long-term value for all stakeholders (De Massis et al., 2024; Fijalkowska et al., 2018; Zyznarska-Dworczak et al., 2023). Diverse boards gain public trust and promote stakeholder engagement, while also contributing to the legitimacy of the company as a sustainable organization (Qiu et al., 2023a; Qureshi et al., 2020a). The knowledge map shows connections between clusters: effective corporate governance practices and fair ESG disclosure practices (blue cluster) can determine corporate ESG performance (red cluster).

The links between the clusters indicate the relation between board gender diversity and ESG, including ESG reporting. Effective corporate governance practices and a transparent approach to ESG disclosure (blue cluster) can impact a company's ESG performance (red cluster). In turn, strong ESG performance can lead to improved company performance (blue cluster). A well-composed supervisory board makes strategic decisions that benefit the environment, society, and the long-term success of the company (yellow cluster). Board gender diversity impacts the implementation of the ESG strategy (green cluster). In other words, the knowledge map indicates that gender diversity on the board is an important premise for responsible ESG reporting, as it influences a fuller understanding of stakeholder needs, promotes comprehensive decision-making, and facilitates stakeholder engagement for the long-term growth of the company.

Content Analysis

As part of the content analysis, we manually read through with a critical lens all the 34 articles from the top journals. Upon stringent scrutiny, we eliminated 4 articles as it was not fully relevant to this discussion. Thereafter, a summary and critical commentary is undertaken on these articles. Firstly, a comprehensive manual assessment of the articles reveals several prominent theories underlying the relationship between

board gender diversity and ESG reporting. The following sections will further elaborate on the theories and subsequently evaluate the findings of the selected research articles.

Theoretical Underpinnings

The use of theory in science is an ongoing debate in the production of knowledge. Theories are fundamental bricks supporting the development of meaningful research questions, designing the methodology, and providing explanations of the underlying causes or influences of observed phenomena, ultimately contributing to the bigger perspective of the subject. The theoretical foundations become the substances for the background of the research upon which research is built. Therefore, it is crucial to understand the theoretical underpinnings in conducting valid and reliable research that can contribute to widespread knowledge in the field.

Table 4. summarizes and exhibits the theoretical underpinnings of research on board gender diversity and ESG reporting. Four prominent theories, i.e., Resource Dependence, Stakeholder Theory, Agency Theory, and The Upper Echelon theory have been identified as being extensively used in studies exploring the influence of gender-diverse boards and ESG. According to the Resource Dependence Theory, board members' psychological traits, background, knowledge, and expertise affect business performance (Aggarwal & Kyaw, 2010) and aid strategic decision-making to manage stakeholder demand (Post et al., 2002). Stakeholder theory advocates for firms to give priority to the welfare of all stakeholders rather than merely being focused on shareholder profit maximization. Literature documents that male and female directors tend to have diverse views on organizational matters (Burgess & Tharenou, 2002); female directors are believed to also emphasize non-financial results, in addition to financial results in their planning and decision-making (Hollindale et al., 2019). Thus, board gender diversity is an appropriate governance mechanism that could promote and optimize ESG performance (Velte, 2016).

The agency theory is a widely debated concept in management that primarily focuses on the conflict between managers and shareholders. Research in this field has demonstrated that having a diverse range of genders on boards can decrease cognitive biases, improve strategic decision-making, promote innovation, and enhance organizational effectiveness. This is because women often bring unique perspectives, skills, expertise, and experiences that complement those of their male colleagues. The Upper Echelon idea is another often-employed theory in the context of board gender diversity and ESG. The core principle of the Upper Echelon theory posits that the knowledge, background, and convictions of directors and top management team (TMT) have an impact on their cognitive processes and choices (Abatecola & Cristofaro, 2020; Chatterjee & Hambrick, 2007). Therefore, the presence of a variety of genders within a board of directors may account for the variations in abilities, conduct, and performance among its members (Khandelwal et al., 2023).

Other ideas that are included are Social Categorization Theory, Critical Mass Theory, and Institutional Theory. Social Categorization Theory recognizes the impact of social dynamics and gender-based groups in the workplace, and how these classifications may shape individuals' behaviors and viewpoints towards others. Furthermore, Critical Mass Theory asserts that it is essential to have a substantial number of women on boards to enhance decision-making and strategic planning. Research has shown that having at least three women on a board contributes to positive environmental, social, and governance (ESG) results. Institutional Theory is a sociological framework that examines how cultural and institutional norms influence the activities of companies with gender diversity and environmental, social, and governance (ESG) issues. These theoretical foundations jointly enhance our comprehension of the relationship between gender, environmental, social, and corporate governance (ESG), and corporate social responsibility (CSR) (see more (Zyznarska-Dworczak, 2018)). They highlight the importance of using a flexible and context-specific strategy to uncover the underlying processes. This comprehensive theoretical landscape is integral to contextualizing and interpreting the diverse findings presented across the studies, contributing significantly to the different theoretical foundations that support the relationship between gender, ESG (environmental, social, and governance), and CSR (corporate social responsibility). It also provides a deeper understanding of this nexus, highlighting the importance of a flexible and context-specific approach to uncover the underlying mechanisms.

Table 4. Theoretical Underpinnings of Research on Board Gender Diversity and ESG Reporting

Author	Theoretical Underpinnings
(Ahsan & Qureshi, 2020)	Stakeholder theory, shareholder theory,
(Au et al., 2023a)	Gender socialization theory, fem-power washing theory
(Bravo & Reguera-Alvarado, 2019a)	Stakeholder theory, agency theory
(M. L. Bui, 2021)	Stakeholder theory
(Cambrea et al., 2023a)	Agency theory, resource dependency, and gender role theory, social categorization theory
(DasGupta & Roy, 2023a)	Institutional theory
(De Masi et al., 2021)	Critical mass theory
(Eliwa et al., 2023)	Upper echelon theory and the gender socialization theory
(Gerged et al., 2023a)	Gender socialization, resource dependence theory, agency theory
(Haque, 2017a)	Agency theory
(He et al., 2023)	Generational theory
(Hoang, 2024)	Agency theory, information asymmetry theory, signaling theory, legitimacy theory, and stakeholder theory
(Q. Huang et al., 2022)	Stakeholder theory
(Husted & Sousa-Filho, 2019a)	Stakeholder theory
(Lu & Wang, 2021a)	Agency theory, resource dependency theory, voluntary disclosure theory
(De Masi et al., 2021)	Social capital theory
(Hang Nguyen et al., 2023)	Upper echelons theory
(Song, 2024)	Upper echelons theory
(Qiu et al., 2023a)	Social trust theory
(Shakil et al., 2020)	Resource dependence and legitimacy theory
(Uyar et al., 2020a)	Upper echelons theory, Resource dependence theory,
(Uyar et al., 2023a)	Slack theory, agency theory, critical mass theory, stakeholder theory
(Wu & Tham, 2023a)	Stakeholder theory, agency theory, social categorization theory
(Okafor & Ujah, 2020a)	Stakeholder theory,
(Yorke et al., 2023)	Agency theory, resource dependency theory

Source: Own elaboration based on Scopus database.

Analysis and Syntheses of Articles

Table 5 illustrates a summary of each of the 30 high-impact journal articles extracted from the broader Scopus database of 312 articles on board diversity and ESG reporting. Drawing insights from the high-impact journal articles, the following section will critically synthesize and comment on the research content and propose avenues for future research, aiming to augment both theoretical frameworks and practical contributions in the field. A cursory check on the articles indicates that some of them are specifically referring to board gender diversity and culture within the realms of CSR activities, whilst the rest are generally on ESG and/or sustainability initiatives and reporting. This comprehension contributes to the broader discourse on how these dynamics shape overall firms' ESG performance and reporting, providing valuable insights for both scholars and practitioners in the field of corporate governance and sustainability.

Table 5. Synthesis Of 30 Articles from A And A* (ABDC-Ranked) Journals on Board Gender Diversity and ESG/CSR Reporting

Author	Findings
(Alkhawaja et al., 2023)	Gender-diverse boards boost ESG disclosure, particularly in weaker stakeholder regimes; quotas spur disclosure further.
(Aabo & Giorici, 2023)	ESG and gender diversity show significance, but data provider dependency influences variations in the impact of female CEOs.
(Au et al., 2023b)	Higher board gender diversity correlates with a 21.81% reduction in workplace sexual harassment, aligned with improved policies.
(Bravo & Reguera-Alvarado, 2019b)	Gender diversity in the Audit Committee (AC) positively correlates with higher quality voluntary ESG reporting, advancing sustainability discourse.
(Bristy et al., 2021)	CSR initiatives are profit-maximizing for US firms, but ROI decreases with a higher proportion of female directors
(B. Bui & de Villiers, 2021a)	Investing in carbon assurance disclosure, and gender-diverse boards correlates with lower earnings management, ensuring reporting integrity.
(Cambrea et al., 2023b)	A critical mass of at least three female directors positively correlates with improved ESG performance, endorsing increased women's presence in strategic board positions.
(DasGupta & Roy, 2023b)	Low power distance links and country-level national culture promotes better financial performance with increased ESG; high power distance shows negative moderation.
(De Masi et al., 2021)	Critical mass of three or more female board members positively enhances ESG disclosure and overall score.
(Dyck et al., 2023b)	Board renewal mechanisms, like majority voting and adding female directors, positively correlate with increased sustainability actions.
(Eliwa et al., 2023)	Gender-diverse boards correlate with reduced ESG decoupling, particularly in low-religiosity domiciled firms, signaling stronger alignment of cultural believes.
(Gerged et al., 2023b)	Females on boards and sub-boards exhibit communal, participative leadership, engaging in sustainability strategies and community-oriented initiatives compared to senior managers who are profit-oriented.
(Haque, 2017b)	Positive relationship exist between board independence, gender diversity, and carbon reduction initiatives, along with an association between environment-social-governance-based compensation policy and these initiatives.
(He et al., 2023)	The presence of Gen X directors correlates positively with firm value. They contribute to value-enhancing CSR investments, promote gender diversity, and show particular value for knowledge-intensive firms.
(P. Huang et al., 2023)	Firms with significant government customers demonstrate higher ESG performance, with female managers, institutional ownership, media coverage, and public attention reinforcing the positive relationship.
(Husted & Sousa-Filho, 2019b)	While board size and independent directors positively impact ESG disclosure, the presence of women on the board and CEO duality have negative effects in Latin America.
(Jin et al., 2024)	The study underscores the importance of diverse boards for environmental awareness, advocating the removal of gender barriers to advance women's professional progress in Chinese publicly listed firms.
(Lu & Wang, 2021c)	Internal governance practices, including CEO non-duality and gender-diverse boards, align with better environmental performance, while cultural factors influence CSR disclosure.
(De Masi et al., 2021)	Companies led by a female chair of the board or committee demonstrate superior ESG performance. Female influence and recognition within the boardroom are heightened when holding a formal title.

Author	Findings
(Nguyen et al., 2023)	Certain board characteristics like gender diversity and cultural diversity complement each other, while others, such as gender diversity and board size, exhibit a substitution effect on ESG reporting. The study supports a corporate governance bundle view, emphasizing the importance of various factors.
(Oh, Song, 2023)	Female CMO with high power in the TMT is highly associated with positive firm performance. This suggests gender diversified powerful CMOs enhance firm performance.
(Qiu et al., 2023b)	Increased female board representation positively correlates with social trust, especially in regions with specific demographic and economic characteristics. The nature of this relationship changes across various geographic and cultural settings. This fosters corporate ESG ratings, indicating a mutually beneficial relationship.
(Qureshi et al., 2020b)	Enhanced stakeholder trust, best management practices, and female board representation positively impact firm value, with higher female representation correlating with superior environmental, social, and governance performance.
(Shakil et al., 2020)	Board gender diversity enhances ESG performance in US banks.
(Uyar et al., 2020b)	Companies with a CSR committee and female directors on the board exhibit enhanced CSR performance across ESG dimensions. Independent directors and diligence contribute selectively to the overall CSR score and individual pillars.
(Uyar et al., 2023b)	CSR committees and female directors' crucial role in fostering superior ESG practices, bringing diverse perspectives and specialized oversight. It encourages discernment, acknowledging effectiveness variations based on organizational context and industry specifics.
(Okafor & Ujah, 2020b)	Executive compensations show mixed effects on CSR, with golden parachutes positively impacting CSR performance. Female executives contribute more, highlighting gender diversity's relevance.
(Wu & Tham, 2023b)	The study uncovers a positive ESG impact on firm performance, yet diverse board perspectives negatively affect ESG's relationship with financial performance. Gender diversity in boards positively influences this dynamic. Policy implications highlight the need for cautious consideration of conflicts in combining diverse boards and ESG initiatives.
Van Hoang, et al. (2023)	Firms in countries achieving Sustainable Development Goals show a strong positive relationship with ESG disclosure, especially firms with a higher Corporate Social Responsibility (CSR) engagement, and with women on boards.
(Yorke et al., 2023)	The study finds that female financial experts (FFE) on audit committees (ACs) have a more significant impact on ESG performance than male financial experts. Single-gender financial expertise harms sustainability performance, emphasizing the need for diverse ACs, particularly with female financial experts. The strength of this relationship varies across geographical and cultural contexts.

Source: Own elaboration based on Scopus database.

Board Gender Diversity, Culture and ESG Reporting

(Yorke et al., 2023) and (Qiu et al., 2023a) conducted a study on the influence of board gender diversity and female leadership on ESG reporting and performance. The authors found a significant association between the presence of women in leadership roles on boards and executive committees and enhanced ESG performance, as well as greater social trust amongst stakeholders (Qiu et al., 2023a). Nevertheless, the extent of this relationship differs depending on the geographical and cultural context, thus a need to consider the context when studying these relationships. The study conducted by (De Masi et al., 2021) also discovered that the presence of women in leadership positions can enhance ESG performance. However, the study emphasizes the importance and the need for formal acknowledgment and structural modifications within organizations to address gender prejudices and fully capitalize on the valuable

contributions of women in leadership. Hence, it is recommended for companies to actively promote the participation of women in leadership roles to cultivate gender diversity. (Bravo & Reguera-Alvarado, 2019a) and (Yorke et al., 2023) documented that women financial experts in audit committees enhance ESG performance and the quality of reporting. However, the authors also highlighted the inverse impact on sustainability initiatives due to expertise homogenization. The structure and operating environment of leaders is essential to optimizing the positive effects of gender diversity (De Masi et al., 2021; Bravo & Reguera-Alvarado, 2019a; De Masi et al., 2021; Qumsey et al., 2013).

Studies by (B. Bui & de Villiers, 2021b), and Haque (2017) show the relationship between board diversity and carbon disclosure. Critically evaluating the findings, Bui et al. (2021) indicate that firms voluntarily investing in carbon assurance, carbon disclosure and maintaining gender-diverse boards exhibit a lower likelihood of engaging in earnings management, thus implying higher reporting integrity, aligning with the premise that ethical consideration lead to improve reporting quality. (Haque, 2017a), further raised questions about the effectiveness of current corporate governance mechanisms in addressing climate change risks and emphasized the need for a more comprehensive approach that directly impacts carbon performance outcomes.

Research by (De Masi et al., 2021) suggests that adequate women representation in leadership positions referred to as a "critical mass," has the potential to further enhance ESG performance and reporting. Increased female representation on corporate boards plays a pivotal role in enhancing innovative and inclusive decision-making. Nevertheless, both studies highlight the concept of critical mass, i.e., the need for a minimum of three female board members to achieve substantial advantages. The studies document that the presence of less than three women representation may not contribute significantly but a minimum of three women could lead to substantial enrichments in ESG outcomes. This emphasizes that gender representation should not be a mere symbolic representation or fulfilling regulatory requirements but should be looked at more holistically for a substantial impact on the long-term sustainability of a corporation.

(Eliwa et al., 2023) used the 'upper echelon' and 'gender socialization theories' to explain how gender diversity, religiosity, and cultural factors could reduce ESG decoupling. Similar studies were undertaken by (DasGupta & Roy, 2023a), who used the 'institutional difference hypothesis' to examine the association between institutional elements and country-level national culture (which includes gender) on ESG performance and financial performance. In terms of gender relevance, the study found that females could discourage ESG initiatives and thus adversely impact firm performance. (Husted & Sousa-Filho, 2019a) documented similar findings. The findings of this study bring to attention the importance of context-specific governance regulations and the need for countries and companies to tailor their strategies, taking into account cultural consideration and public demand. These factors may play a pivotal role in companies embracing and adopting appropriate measures to enhance ESG initiatives and reporting. Internal corporate governance practices like CEO non-duality and establishment of executive committees such as ESG committees can also contribute towards sustainability performance and disclosure (Lu & Wang, 2021a).

(Hang Nguyen et al., 2023) show in turn that four statistically significant factors affect financial performance: corporate social responsibility, board gender diversity, ownership concentration, and government ownership. They also clarified the importance of information ESG disclosure to interested parties when making economic decisions based on the agency theory, stakeholder theory, and fundamental corporate social responsibility. There are also studies indicating multidirectional dependencies or determinants of the impact of board diversity on company values (f.e. (Alkhwaja et al., 2023; Gerged et al., 2023a; Shakil, 2021). According to (Shakil et al., 2020) board gender diversity adversely influences the total and systematic risk, nevertheless women's weak participation on board moderates and escalates the association between ESG and financial risk. (Alkhwaja et al., 2023) proved that gender-diverse boards around the world significantly increase ESG disclosure, however, this positive effect of gender diversity on ESG becomes stronger in countries with weaker stakeholder regimes as well as in countries with weaker information environments. Gerged et al. (2023) introduce a unique perspective, highlighting that females on boards and sub-boards exhibit communal, participative leadership, engaging in sustainability strategies.

This research implies that CG structures, with women representation, seemed to work efficiently and effectively and thus eliminate harmful climate change conditions and other environmental and social effects.

(Husted & Sousa-Filho, 2019a) indicated the institutional context in their research on the effect of board structure on ESG disclosure in Latin America. They showed that in this geographic area, factors such as board size and independent directors impact ESG disclosure positively. At the same time, women on the board and CEO duality impact ESG disclosure negatively, nevertheless, it may be the result of a lack of critical mass for women on management boards to have a positive impact on the disclosure of ESG information. In turn, Qureshi, et al. (2020) bring a European perspective, indicating that their results are robust to different firm and country-specific control variables and year- and country-fixed effects. Using a large panel data set comprising 812 listed European firms, this study proved that ESG disclosure and female representation on boards affect firm value, as well as the firms with higher female representation on their boards present significantly superior environmental, social, and governance performance.

In a critical assessment of these collective findings, it becomes evident that while there is substantial support for the positive influence of gender diversity on ESG performance, there are contextual distinctions and potential challenges that need consideration, such as institution, culture, religiosity, etc. Thus, it is important to take a comprehensive approach to fully understand the various effects of gender diversity and culture on sustainability reporting.

Building upon the insights garnered from the existing studies, several promising avenues for future research emerge.

Most studies have established a positive relationship between board gender diversity and ESG performance and reporting. Thus, future studies could undertake extensive multi-country comparative analysis and further determine the similarities and differences between countries and the causes for any differences that arise, specifically from a cultural perspective. Alternatively, research could also examine the moderating variables affecting the relationships, such as culture, and religiosity.

Another potential research avenue involves investigating the role of gender diversity and cultural beliefs at different organizational levels and its cascading effects on ESG practices.

Board Gender Diversity, Culture and Corporate Social Responsibility (Csr)

Extant literature has discussed quite extensively the relationship between gender diversity and corporate social responsibility and has confirmed the presence of a relationship between these issues. The synthesis of the studies by (Lu & Wang, 2021a; Bristy et al., 2021; P. Huang et al., 2023b; Uyar et al., 2020a, 2023a) sheds light on the complex relationship between CSR practices and gender diversity. Moreover, there are also studies confirming the improvement of ESG performance under the influence of CSR committees and female boards of directors (Uyar et al., 2020a, 2023a). The researchers of these studies emphasize, however, that the effectiveness of CSR policy varies depending on the organizational settings, cultural beliefs and industry environment. (Lu & Wang, 2021a) present similar research results. The authors confirm that diverse leadership improves environmental performance but calls on managers to take into account the impact of cultural differences in CSR reporting. Another factor determining the importance of gender diversity and CSR initiatives is the role of Generation X, especially in knowledge-intensive industries (He et al., 2023). The complex relationship between a company's financial performance, CSR, and gender diversity is also indicated by a study conducted by (P. Huang et al., 2023b) in 1,327 companies in 14 countries in 2016–2020. According to researchers, there is a significant positive relationship between corporate ESG performance disclosed in reports and a country's performance in achieving sustainable development goals. This relationship is most visible in light industries and in companies whose management boards are women. In turn, (Bristy et al., 2021) reveals opposite conclusions, indicating that increased representation of women on management boards may reduce financial returns from CSR. The authors claim too that more female presence on boards may harm corporate profitability.

This disparity raises concerns regarding the consistency of such findings across various organizational, cultural, and economic contexts. Furthermore, such factors as methodological approaches in the research, industry-specific conditions, regional differences, and changing social and corporate practices may influence the results of the cited studies. In other words, the applicability of a few studies that have been conducted so far, to other sectors and geographic areas is still questionable. Moreover, an approach that focuses solely on gender may miss other aspects of diversity, such as professional, cultural, and ethnic backgrounds, which can also have a substantial impact on CSR outcomes. Comparative legal and regulatory frameworks' exploration can also provide insights into the global landscape of gender equality, culture and social responsibility. In particular, the most important research questions include:

How cultural perspectives influence perceptions and outcomes of gender diversity and CSR initiatives.

What is the impact of industry specificity on the analyzed relationship and how to ensure the effectiveness of ESG policy for sectors with different corporate governance and cultural believes.

How to designate optimal leadership structures to take into account the assessment of employee prospects, workplace culture, and organizational performance.

Such comprehensive research can support stakeholders in improving organizational strategies as well as social impact and adapting companies to changing expectations for ethical and inclusive practices. The outcomes will contribute to creating more sustainable, equitable, and socially responsible business environments. These research findings should have important implications for stakeholders. Business leaders, regulators, and non-profit organizations could gain insightful information and tailor their strategies to specific contexts. Investors, on the other hand, could further comprehend the importance of board gender diversity and culture and its impact on ESG as investors and fund managers have also jumped into the bandwagon of sustainable investment choices. Strategies initiated by regulators and implemented by business leaders will positively impact employees and the broader community as more effective diversity policies and practices are promoted and adopted at the workplace. Ultimately, it is envisioned that the findings of the study will have far-reaching effects on developing corporate landscapes that give importance to diversity, cultural believes, equity, and sustainability.

Conclusions

This study intends to fill the existing gaps found in these review-based studies and further extend the scholarly contribution on board gender diversity, culture and ESG reporting. It systematically examined the role of board gender diversity and culture on ESG reporting through a comprehensive analysis of bibliometric data and content analysis. The results of the bibliometric and content analyses explicitly answered the research questions proposed in this study. The empirical results show an increasing trend in the number of publications, with several prominent authors, publishers, and documents. Business Strategy and the Environment, British Accounting Review, Finance Research Letters, International Review of Financial Analysis, and Journal of Business Research are the most cited journals. Bryan Husted from Tecnológico de Monterrey has emerged as the top author in board gender diversity, culture and ESG reporting with the publication titled "Board Structure and Environmental, Social, and Governance Disclosure in Latin America". Other top authors include Alexander Dyck, Ali Uyar, and Thi Hong Van Hoang, to mention a few. The content analyses highlight that most of the articles are related to board gender diversity, culture, ESG, and CSR performance and reporting. Though generally, most studies indicate a positive relationship between board gender diversity, ESG, and CSR performance and reporting, important issues such as context-specific impacts, cultural impact, and critical mass for women's representation in boards were discussed.

Highlighting the importance of board gender diversity and culture is a significant advancement in addressing sustainability reporting concerns and advancing toward a more sustainable future. This initiative gains strength through standardized reporting frameworks that emphasize action-oriented approaches, facilitating meaningful comparisons and propelling effective actions. It is also noted that institutional

policies and governance mechanisms play a significant role in companies aligning their strategies to ESG performance and reporting and ultimately contributing towards SDGs. This is mainly due to the fact that comprehensive framework, i.e., ESG reporting, encourages and promotes transparency, monitors governance-related matters and accountability by management teams, and communicates sustainability efforts. Engaging in sustainability or ESG reporting creates a platform for companies to identify voids in their sustainability performance and establish goals and strategies to achieve sustainability-related targets.

Credit Authorship Contribution Statement

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The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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The authors declare that they have written entirely original work. Grammarly was used for improving writing by checking grammar accuracy.

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