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Female Leadership for Corporate Sustainability: A Bibliometric Analysis and a Systematic Literature Review

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Abstract

This article examines how and under what conditions female leadership contributes to corporate sustainability, combining a bibliometric analysis with a systematic literature review. The bibliometric analysis draws on documents extracted from the Web of Science database, mapping the structure and evolution of the research field through indicators such as annual scientific production, keyword co-occurrence, and thematic mapping. The systematic literature review follows a Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) selection process across the Springer and Wiley databases. Findings show that female leaders adopt a stronger stakeholder orientation, contribute to higher Environmental, Social and Governance (ESG) performance, and foster environmental innovation. This influence isn't universal. It depends on female leaders' expertise and decision-making authority, as well as on the institutional context, rather than on representation alone. The bibliometric mapping further reveals that female leadership remains a peripheral, undertheorized construct within governance research. Building on these findings, the study proposes an integrated conceptual model distinguishing representation from influence, positioning critical mass and tokenism as contextual moderators rather than independent mechanisms. **Methodology:** Bibliometric Analysis, Systematic Literature Review **Findings:** The findings reveal that female leadership contributes significantly to corporate sustainability, particularly through stronger stakeholder orientation, higher ESG performance, and greater environmental innovation. This contribution is not systematic, it depends on women's decision-making authority and expertise, as well as on the institutional, environmental, and organizational context in which firms operate. **Practical implications:** Companies and policymakers should treat gender diversity as a strategic governance lever, not merely a compliance or equity target. Beyond increasing the number

of women in leadership, firms need to grant them genuine decision-making authority and the conditions to apply their expertise, since representation alone does not guarantee stronger sustainability outcomes. Policymakers, in turn, should design measures that go beyond numerical quotas, supporting women's access to positions of real influence and fostering institutional conditions favorable to their strategic contribution.
Keywords: Female Leadership, Corporate Sustainability, ESG Performance, CSR Performance, Gender Diversity

Introduction

Gender equality has become a fundamental concept debated at both local and international levels. It's recognized as an essential pillar of the Sustainable Development Goals; it has helped position sustainable development as a new management paradigm for business, one that pushes companies to move beyond a narrow shareholder and profit-driven view toward a more holistic approach that accounts for internal and external stakeholders alongside social, environmental, and ethical concerns. This shift places significant pressure on companies to adapt their sustainability practices and rethink their governance structures, with leadership standing out as a crucial pillar of this transition. Leaders who set a company's strategic direction hold the power to prioritize sustainable development and embed it across all aspects of the organization's operations. In this context, diversity within leadership bodies plays a key role in shaping the ethical direction and quality of strategic decisions, and the international community increasingly recognizes diversity within management teams as a key driver of performance and innovation.

Implementing sustainability strategies takes more than leadership in the general sense; it calls for sustainability leadership centered on creating long-term value, grounded in an understanding of the context in which the company operates, and capable of integrating sustainable practices to serve collective progress. Such leadership adopts a long-term vision and an inclusive management style, and has been defined as an approach encompassing long-term decision-making, continuous innovation, the cultivation of a loyal workforce, and ethical, transparent, stakeholder-inclusive management practices (Liao, 2022). This stakeholder-focused dimension of sustainable leadership echoes stakeholder theory (Freeman, 1984), which holds that companies can only generate long-term value if their leaders take into account and balance the interests of all internal and external stakeholders, rather than focusing solely on maximizing shareholder returns. According to the upper echelons perspective (Hambrick et Mason, 1984), the extent to which organizational strategy incorporates sustainable leadership principles is directly shaped by the values, cognitive frameworks, and experiences of top managers, and gender is one trait among these that may play a role. While the literature frequently characterizes female leaders as more long-term and stakeholder-oriented (Birindelli et al., 2019; Glass et al., 2015), the empirical evidence remains mixed, with some studies reporting negative or non-significant effects (Cucari et al., 2018), suggesting that this relationship depends on institutional context rather than holding universally. This research centers on the following question: How and under what conditions does female leadership influence corporate sustainability?

To answer this question, we will follow the outline below: Firstly, we will examine the conceptual framework by defining the key concepts, namely leadership and its styles, as well as female leadership and its characteristics. Next, we will explore the theoretical framework

by discussing the main theories, notably stakeholder theory, critical mass theory, and upper echelon theory. Finally, we will discuss the research methodology, which is based on a bibliometric analysis and a systematic literature review, detailing the methods used and the main results obtained.

Literature Review

Conceptual Framework

What is leadership?

According to (Maxwell, 1998), leadership is the ability to influence others. This minimalist definition is deliberate, eliminating any reference to title, institutional status, or hierarchical position. Maxwell asserts that true leadership is a relational phenomenon, not a structural one: a leader is not appointed, but recognized. This view ties in with his five-level model of leadership, in which the first level (position) represents the lowest stage, where one is followed because one must be. As the leader progresses to higher levels (permission, production, people development, pinnacle), their influence becomes increasingly intrinsic and disconnected from any formal authority.

Leadership Styles

- Democratic leadership:
  This concept was popularized by the psychologist (Lewin et al., 1939). According to him, democratic leadership is characterized by a participatory decision-making process, in which team members are involved and have a say in the decisions that affect them. The leader encouraged discussions and suggestions to determine the direction of the work. Teams led by this style of leadership produced better results, showed greater intrinsic motivation, and continued to work effectively even in the leader's absence.
- Authocratic leadership:
  According to (Blake & Mouton, 1964) in their managerial grid, the authoritarian style corresponds to the (9,1) quadrant: the highest score for task orientation and the lowest score for people orientation (1). This positioning illustrates a managerial style where productivity takes precedence over human well-being. The authoritarian leader (9,1) plans tasks and working methods, monitors their execution, and makes decisions alone, without really involving their staff in the decision-making process.
- Laissez-faire leadership:
  (Bass, 1985a) regards this style as a form of non-leadership. It is characterized by a lack of intervention by the leader in their subordinates' activities, as well as a lack of decision-making and direction. The leader avoids responsibility, postpones decisions, refrains from providing feedback, and does not intervene when faced with urgent problems. The MLQ (Multifactor Leadership Questionnaire), developed by Bass, measures this style as a distinct factor; empirical research associates it with lower levels of satisfaction, effectiveness, and performance than all other styles.

- Transactional leadership:
  (Burns, 1978) First introduced the distinction between transactional and transformational leadership in his book Leadership. According to Burns, transactional leadership is based on a transactional relationship between the leader and their subordinates. The leader sets objectives and offers rewards (material or symbolic) in return for performance or

compliance. This style of leadership is based on concrete transactions; employees receive rewards or penalties depending on their results.

- Transformational leadership:
  (Burns, 1978) also introduces the concept of transformational leadership to describe a mutual commitment between a leader and their followers. Unlike transactional leadership, transformational leadership brings about a profound change in the values, motivations, and aspirations of both parties. Transformational leadership engages followers not based on their immediate needs, but on the basis of their core values and highest moral aspirations. According to Burns, the ethical dimension plays a central role. He argues that leadership can only be described as transformational if it is part of the pursuit of morally high-minded goals. A leader who mobilizes their followers through charisma or emotion in the service of immoral ends does not exemplify transformational leadership.

(Bass, 1985) identified four dimensions of transformational leadership, known by the acronym 4I:
Idealized influence (charisma): The leader serves as a role model, commanding respect and admiration.
Inspirational motivation: This refers to the leader's ability to articulate an inspiring vision, communicate high expectations, and give meaning to day-to-day work.
Intellectual stimulation: The leader encourages creativity, critical thinking, and innovation.
Individualized consideration: The leader supports each employee according to their needs and talents, and acts as a mentor.

Female Leadership
(Sally Helgesen, 1990) She is regarded as one of the pioneers in the study of female leadership. In her view, female leadership does not involve imitating male models, but is a distinct practice with its own strengths. In her book «The Female Advantage: Women's Ways of Leadership (1990) », she demonstrates that women bring a new style of leadership that is better suited to modern organizations. She observed four female leaders in their day-to-day work using a methodology inspired by Henry Mintzberg's research on male managers. Whereas Mintzberg's male managers tended to organize information hierarchically, the women observed by Helgesen distributed it proactively and circularly. They did not see themselves at the top but at the center of a network. A metaphor she formalizes in her second book, entitled «Web of Inclusion». This network, interconnected at all levels of the organization, promotes the flow of information horizontally and pays particular attention to human relationships, which are often neglected in traditional hierarchical structures.

Female Leadership Characteristics
The prevalence of the transformational style
The prevalence of the transformational style:
According to a meta-analysis of 45 studies comparing men and women in leadership roles. (Eagly et al., 2003) women score highest on all four transformational dimensions: idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. These findings are all the more significant given that the transformational style is precisely the one that contemporary research associates with the best long-term organizational performance, particularly in complex and uncertain environments.

Inclusive leadership and networked organization

The concept of the ‘’Web of Inclusion’’, developed by (Helgesen, 1995), describes an organizational architecture radically different from the traditional hierarchical structure. In this model, the leader is situated at the center of a network of relationships, not at the top of a command structure. Information flows in all directions downwards, upwards, and, above all, laterally rather than moving strictly top-down as in a traditional hierarchy. This structure reflects and reinforces several key practices: a particular attention to those on the periphery of the organization; generous, proactive information sharing that reduces power imbalances tied to unequal access to information; recognition of contributions at every level of the hierarchy; and a culture of recognition that is not purely top-down.

Emotional Intelligence

Research by (Eagly & Carli, 2007; Goleman et al., 2002) suggests that female leaders, on average, demonstrate greater emotional intelligence, particularly in empathy, social skills, and self-awareness. Goleman defines empathy in the context of leadership as the ability to accurately read the emotional states of individuals and groups, anticipate reactions to one’s decisions, and communicate in a way that resonates with the deep concerns of one’s interlocutors. In this sense, empathy is as much a cognitive skill as it is an affective one, a leadership tool that is particularly effective in contexts of organizational change or crisis management.

Cooperative and Horizontal Communication

The linguistic research conducted by (Tannen, 1990) made a significant contribution to our understanding of gender-related communication differences in the workplace. According to this research, language serves two fundamental functions in social situations: rapport talk, language geared toward creating and maintaining connections, and report talk, language geared towards conveying information and establishing status. According to Tannen, women tend to prioritize rapport talk, while men prioritize report talk.

In a leadership context, this difference manifests itself in several communicative practices among women: a higher frequency of open-ended questions to explore others' perspectives; frequent use of inclusive phrases such as ‘we’ and 'together'; attention to silences and unspoken elements in group discussions; and a tendency to contextualize decisions by explaining their origins and rationale rather than simply announcing them directly.

Corporate Sustainability

Corporate sustainability refers to a company’s ability to integrate environmental, social, and ethical considerations into its strategies. It is a strategic approach that aims to reconcile economic performance, environmental protection, and social justice, with a long-term perspective and a sense of responsibility extended to all stakeholders, including future generations. It involves a profound transformation of the business model to operate within social and planetary boundaries.

The Triple Bottom Line, or the 3Ps (Profit, People, Planet), is a concept introduced by (Elkington, 1998). It enables companies to be assessed not only on their financial performance, the traditional ‘bottom line’, but also on three key performance indicators: economic, social, and environmental.

The Emergence of non-financial reporting and ESG criteria

Non-financial reporting emerged in the 1990s with the application of the concept of sustainable development to businesses. This trend gave rise to several institutions providing guidelines, such as the GRI founded in 1997, and subsequently to legal obligations such as the NFRD, adopted by the European Union in 2014. The directive requires large companies to publish non-financial information. These developments laid the foundation for the ESG (Environmental, Social, and Governance) criteria now widely used, enabling investors, regulators, and stakeholders to assess companies' non-financial performance beyond traditional financial results.

Classification of ESG Indicators

Table 1

ESG Score Rankings

Dimension	Undersized	Indicators
Environmental	- Waste management - Biodiversity - Climate change - Energy efficiency	- Emission CO_2 - Consommation d'énergie - Taux de recyclage - Investissement pour la protection environnementale.
Social	- Working conditions - Community relations - Diversity and inclusion - Social relations	- Workplace accident rate - Staff turnover rate - Impact on the local Community
Governance	- transparency - Structure of the Board of Directors	- Independence of directors - Quality of ESG reports - Code of Ethics

Source : (GRI)

Theoretical Framework

Upper Echelon theory

This theory posits that executives influence strategic decisions and, by extension, organizational performance, through their personal characteristics. These characteristics break down into observable variables, such as age, education, or professional experience, and psycho-cognitive variables, such as values, mental schemas, and individual perceptions. Together, these shape how executives filter and interpret strategic information before translating it into concrete choices (Hambrick et Mason, 1984) .

Stakeholder Theory

According to stakeholder theory (Freeman, 1984) , a company's success and legitimacy do not depend solely on its ability to create value for its shareholders but on its capacity to balance the interests of all those affected by its activities. This theory emphasizes the interconnected relationships between a company and its stakeholders. Unlike the traditional capital-centric approach, it views the company as an entity embedded within a broader social and ethical

ecosystem. Building on this framework, one could argue that female executives, often described in the literature as more relationship-oriented, may be more inclined to adopt a multi-stakeholder approach, giving greater weight to ESG concerns.

Critical Mass Theory

According to (Kanter, 1977) Critical Mass Theory, first presented in her study of gender dynamics in businesses, holds that women's impact on decision-making only becomes significant once they attain a particular degree of representation in leadership positions. Below this threshold, women in minority roles, sometimes referred to as "tokens," face challenges such as excessive visibility, polarization, and pressure to conform to prevailing norms, limiting their ability to voice distinct viewpoints. Women only become a powerful enough group to influence a firm's strategy and governance once they reach a critical mass, often associated in the literature with three board members or a representation threshold of roughly 20% to 40%. This may explain why some studies only find a significant effect of gender diversity on ESG/CSR performance once this threshold is crossed; simply having women represented is not enough to produce measurable organizational change.

Conceptual model

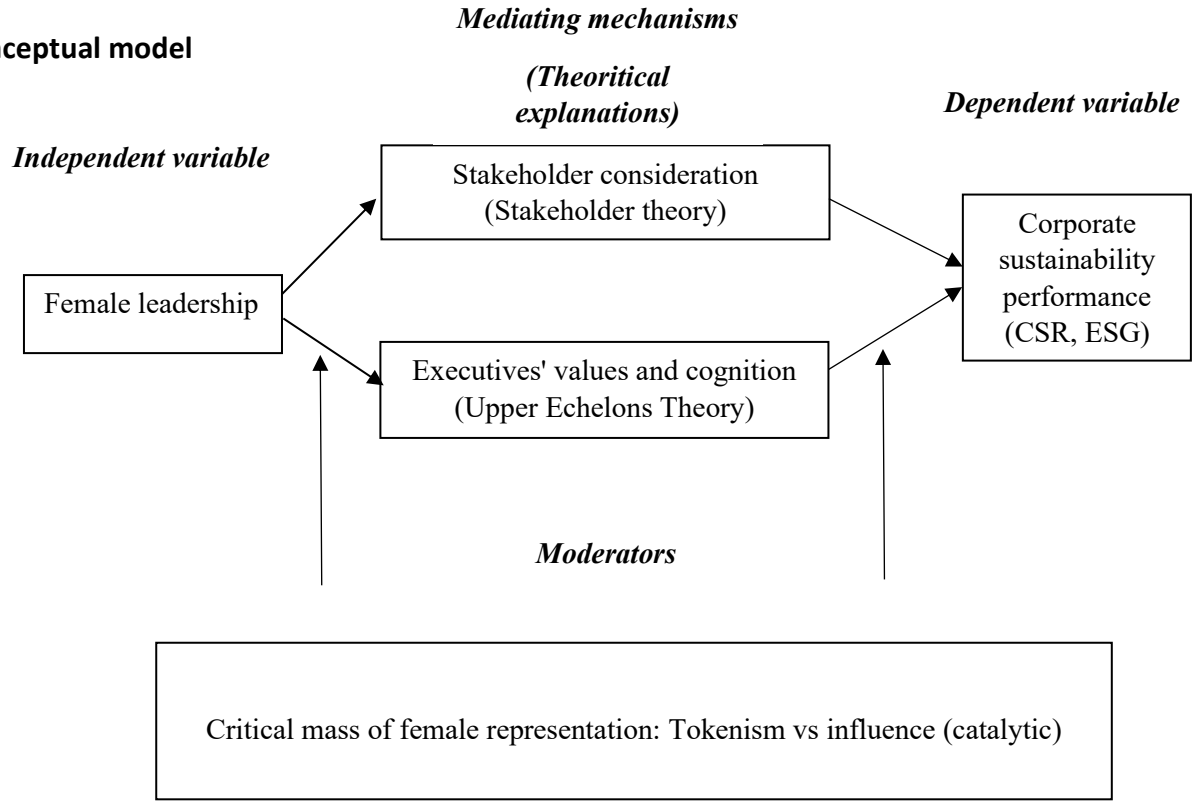


Figure 1: Conceptual model
Source: Authors

Method

This research combines two complementary methodologies, a bibliometric analysis and a systematic literature review. The bibliometric analysis applies quantitative methods to scientific publications, including articles, authors, journals, and citations, to examine the structure, development, and trends within a given research field using indicators such as

annual scientific production, the most relevant sources, keyword co-occurrence networks, and thematic mapping.

The systematic literature review, in turn, aims to rigorously synthesize existing research addressing a specific research question, following a reproducible methodological protocol designed to minimize bias and produce a reliable synthesis of available knowledge on the topic. To ensure transparency and reproducibility, this study follows the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) protocol. This protocol structures the review process through four sequential stages: identification, screening, eligibility, and inclusion. Combining these two approaches allows the study to first map the overall structure and evolution of the research field through bibliometric indicators before narrowing the focus to a systematic, in-depth examination of the most relevant studies using the PRISMA protocol, ensuring both breadth and depth in the analysis of the literature.

Data Collection and Analysis Method

Bibliometric Analysis

The Web of Science database provided the 250 documents that made up the corpus for the bibliometric analysis. This choice is supported by the database's extensive metadata (abstracts, keywords, cited references, and citation counts) and its rigorous editorial selection process. Granting access to the relational dimensions of the field (co-citations, conceptual structure, thematic mapping, this database allows the analysis to move beyond basic descriptive counts. The search was applied to the title, abstract, and keyword fields using two blocks of terms: "female leadership," "women on boards," and "gender diversity" on one side and "corporate sustainability," "CSR," and "ESG performance" on the other, joined by the operator AND. The time frame was set to 2015–2025, since the topic only really gained traction from the mid-2010s onward. The discipline filter was limited to the three areas closest to the research focus: Business Economics, Social Sciences Other Topics, and Women's Studies. Only English-language articles were retained. Biblioshiny was used to analyze the 250 documents thus obtained. The findings presented in the following section are based on this analysis.

Systematic Literature Review

The data were collected from the Springer and Wiley databases, focusing on studies related to female leadership and corporate sustainability. The research was based on the following keywords: female leadership, women on boards, gender diversity, women directors, female CEO, critical mass theory, CSR, ESG, and sustainability performance. The initial research identified 2047 articles. Selection criteria were then applied, including the publication period from 2020 to 2026, English language, article type, and field of Business and Management, Accounting, and Social Sciences. 348 articles were retained for the screening phase following this section process, which was completed by verifying the corpus. The titles and abstracts were then reviewed to identify studies showing a direct connection between gender in leadership and corporate sustainability issues, particularly ESG and CSR. This process resulted in 42 articles being retained for full-text assessment, of which 8 were ultimately included in the systematic review.

The selected studies were analyzed using the conceptual model developed in this study as a reference. For each study, we examined the relationship between female leadership and

corporate sustainability performance, particularly CSR and ESG outcomes. We also identified the theoretical perspectives used to explain this relationship, with a focus on Upper Echelons Theory and Stakeholder Theory. In addition, we looked at contextual factors such as industry sector, firm size, and institutional context, as well as the possible moderating roles of tokenism and Critical Mass Theory. This approach helped us compare the findings across the selected studies and identify similarities, differences, and gaps in the literature in relation to the proposed conceptual model.

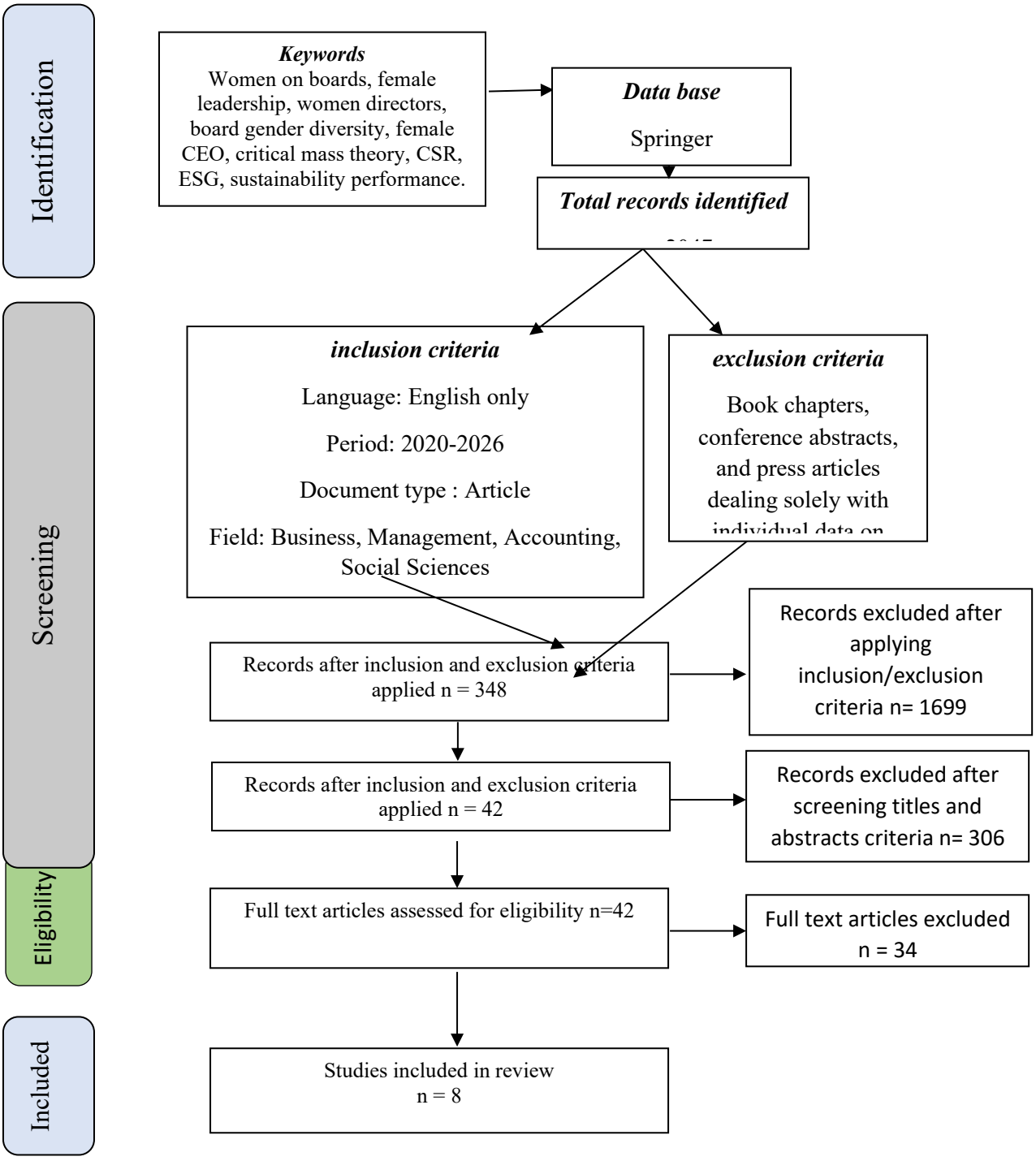


Figure 2: Protocol PRISMA
Source: Authors

Findings

Bibliometric Analysis

Annual Scientific Production

As the annual production graph makes clear, the topic was scarcely covered in the literature up until 2018, with only one or two pieces published annually. From 2019 onward, things start to pick up, but the real acceleration begins in 2022, when the number of articles rises from 11 to over 100 in just two years. The small drop in 2025 doesn't mean interest is fading; the data were collected mid- year, so many 2025 papers simply hadn't been indexed yet. This is a normal delay for bibliometric databases. The growth that started in 2022 was likely driven by the EU's new ESG reporting rules under the CSRD directive. These stricter requirements pushed researchers to pay more attention to board diversity and governance.

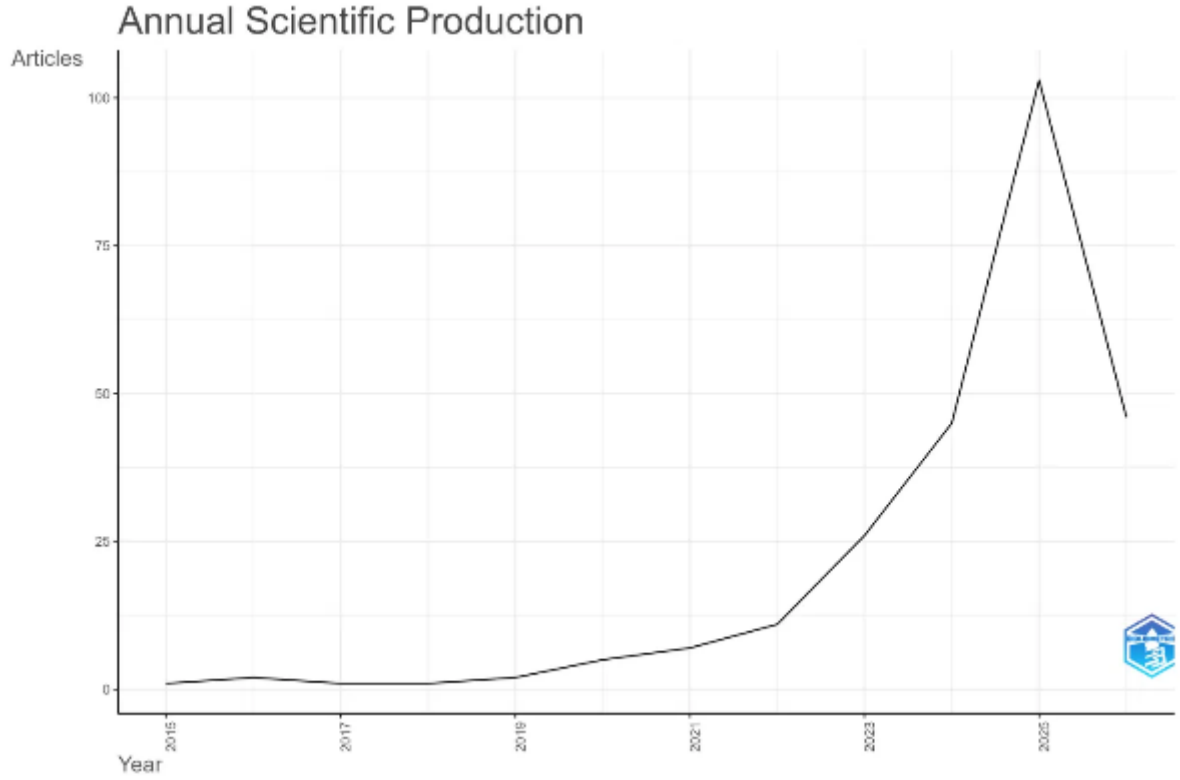


Figure 3 Annual scientific production

Most Relevant Sources

The examination of the most relevant sources reveals a strong editorial concentration within the corpus. Corporate Social Responsibility and Environmental Management alone accounts for 42 articles, or over 17% of the corpus (n= 250), well ahead of Business Strategy and the Environment (16 articles) and Corporate Governance, the International Journal of Business in Society (15 articles), which complete the top three most productive journals.The remainder of the corpus is scattered across a long tail of publications, such as Gender in Management, Journal of Applied Accounting Research, and Finance Research Letters, each accounting for only five or six articles.

This pattern is a textbook illustration of Bradford's Law: the bulk of a field's scientific output is concentrated in a small core of journals, the remainder is scattered a much wider periphery. It also points to a telling disciplinary positioning. The top two journals belong to the CSR and environmental field rather than to leadership or strategic management research. This confirms what the keyword co-occurrence network already suggested: gender diversity is still primarily examined as an explanatory factor for ESG performance, rather than as a stand - alone research topic centered on leadership. This field shows a degree of fragmentation, reflected in the presence of journals devoted to accounting and finance, such as Journal of Applied Accounting Research and Finance Research Letters, alongside gender studies journals such as Gender in Management. So far, no journal is clearly dedicated to the intersection of female leadership and corporate sustainability. This finding underscores the research's positioning within a space that remains editorially under-structured.

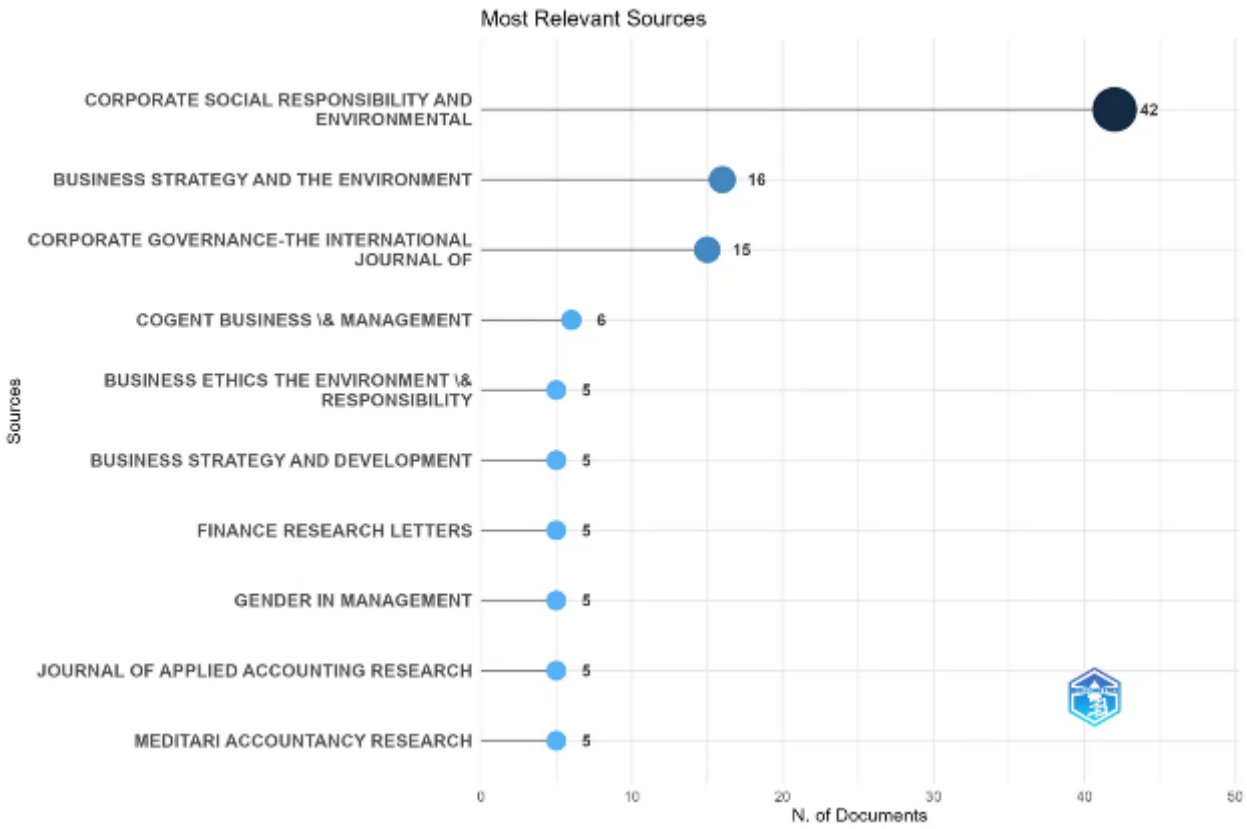


Figure 4 Most relevant sources: Top journals by number of publications

The tree-field plot

The tree-field plot shows a theoretical lineage largely dominated by agency theory. The founding article of Jensen and Meckling (1976) is among the most frequently cited references in the corpus, along with the groundbreaking work of Adams (2009) , Carter et al.(2003), and Campbell and Mínguez-Vera (2008) on gender diversity on boards of directors. The field doesn't have a leadership theory of its own. Instead, it draws on frameworks originally built to examine the influence of executives or the composition of governance bodies on firm performance, not the relationship between gender and sustainability specifically. None of the authors' names truly dominate the field. Scientific output is spread across several research groups, including those in the Middle East, Southeast Asia, and Southern Europe, with no clear institutional or geographic center. This matches what the production curve already showed:

the field is still young, having really taken off only since 2022. The keywords tied to these sources and authors remain focused on performance and governance, impact, corporate social responsibility, gender diversity, ESG performance, and firm performance. None of them are directly linked to leadership. This pattern confirms the gap already noted in this review,the field still lacks a theoretical framework that directly links female leadership to corporate sustainability. Researchers continue to rely on theories borrowed from the traditional corporate governance literature.

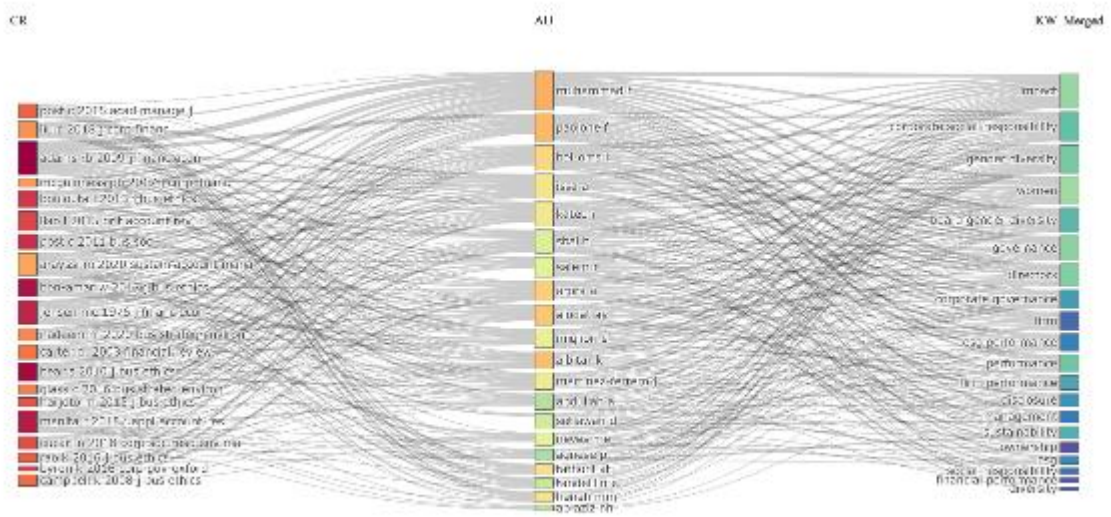


Figure 4 The tree-field plot

Co-occurrence Network

The keyword co-occurrence network divides the field into two distinct but complementary poles. The first is built around the terms gender diversity, directors, board, and agency, reflecting a mechanism-driven view of governance centred on the composition of the board and grounded in agency theory. The second, structured around impact, sustainability, ESG, and critical mass, leans more toward an outcomes-based logic, examining how gender diversity affects ESG performance and sustainability through the lens of critical mass theory and upper echelons theory. A third smaller cluster brings together the theoretical and methodological foundations shared by both poles (stakeholder theory, panel data). This structural dichotomy reveals something that the current literature still addresses as largely separate: governance mechanisms on the one hand, and their impact on ESG performance on the other. It's also worth noting that the term "leadership" occupies only a peripheral position in the outcomes-oriented cluster, with a relatively modest presence in the network

a finding that supports the idea that female leadership remains under-theorized in this corpus rather than being treated as a central construct.

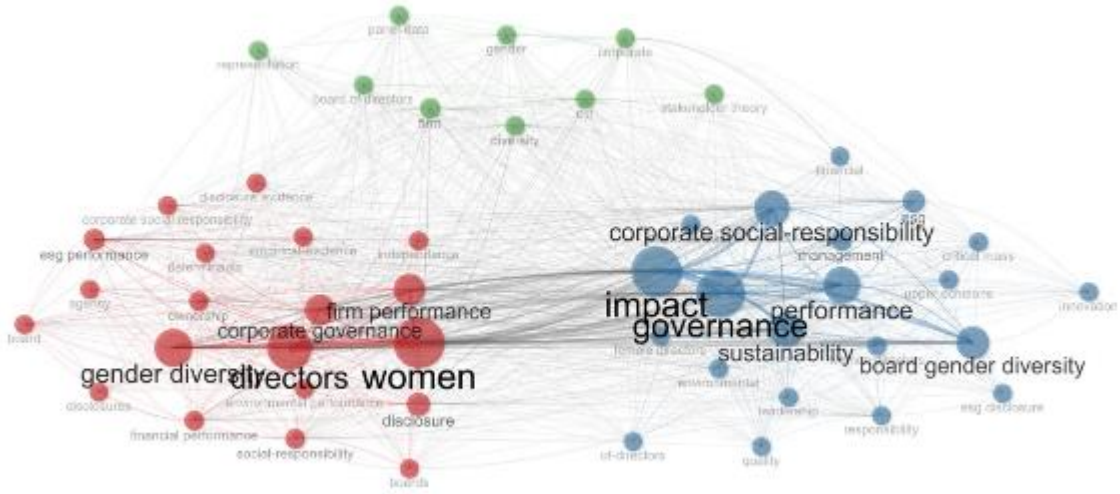


Figure 5 Co-occurrence Network

Thematic map

Thematic cartography classifies the corpus's Keywords along two axes: centrality, reflecting a theme's weight within the field, and density, reflecting its internal maturity. Impact, governance, and performance fall into the motor themes quadrant; central and well developed, they form the core of current research on the topic. Gender diversity, corporate governance, and CSR sit in the basic themes quadrant. They're highly prevalent in the field but still not well structured as an independent sub-domain, suggesting they function more as recurring variables in broader studies than as a research object in their own right. Two small clusters sit in the niche themes quadrant. The first includes corporate sustainability, reputation, and top management. The second includes firm, corporate, and panel data. Both are well-developed but poorly connected to the rest of the field, a sign that they are likely driven by subcommunities working in relative isolation. The most telling results, though, concern the women, directors, and firm performance cluster. It sits in the emerging or declining themes quadrant, the least central and least mature area of the map. This matches what earlier figures already showed. Gender diversity still works more as one governance variable among others than as a theme in its own right, and female leadership hasn't yet become a well-established research topic in this literature.

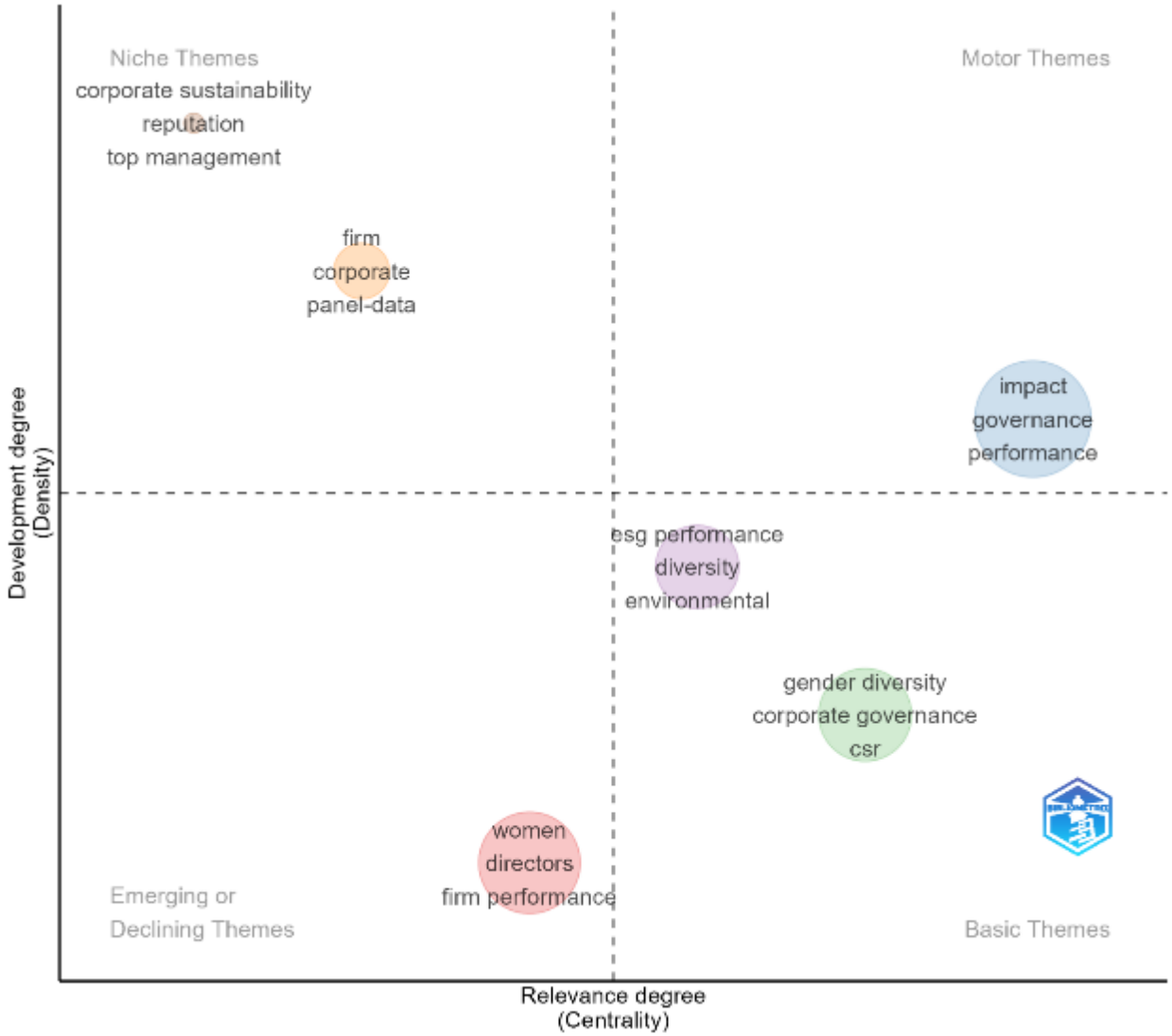


Figure 6 Thematic map

Systematic literature review

To synthesize the main results derived from the literature review, the table below presents, for each selected study, the sample used, the methodology adopted, and the key findings regarding the relationship between female leadership and a firm's ESG/CSR performance.

Table 2

Literature Synthesis

Authors /Year	Sample	Findings
(Ghazwani, 2026)	G20 firms, 2005–2022; 18,941 firm-year observations; OLS, fixed effects (FE), random effects (RE), and system GMM estimations	This study shows that gender diversity on the board of directors has a positive and statistically significant effect on environmental innovation, with a significance level of 1% across all estimated models. These findings suggest that companies with greater female representation on their boards are more likely to develop strategies and initiatives that promote environmental innovation. Indeed, the presence of women in leadership positions may also contribute to a broader range of perspectives in the decision-making process and encourage strategic orientations that are more attentive to environmental and sustainability issues.
(Elsheikh et al., 2024)	Global sample, 2016–2021; over 36,000 observations; panel data analysis with fixed-effect models	This study shows that the presence of women on corporate boards is positively associated with ESG scores. The findings also indicate that this effect is context-dependent and varies according to the institutional environment in which the firm operates. This relationship can be explained by Upper Echelons Theory. This theory suggests that executives' characteristics influence organizational decisions and strategic orientations. Women leaders are generally associated with greater sensitivity to social, ethical, and environmental issues, potentially encouraging the adoption of sustainable practices and improving ESG performance.
(Grau et al., 2026)	European sustainable companies, Euronext Sustainable Europe 120, 2014–2023; 950 firm-year observations; one-step system GMM	BGD has a direct positive effect on overall ESG performance but does not moderate the relationship between busy and non-executive directors and ESG performance as expected. Instead, BGD negatively moderates the relationship between foreign directors and ESG performance, particularly for environmental and social dimensions. It positively moderates the effect of non-executive directors on governance performance.
(Arcuri & Pisani, 2026)	290 Italian non-financial listed companies, 2015–2022; 2320 firm-year observations; panel regression (LSEG & Bloomberg ESG scores)	PWDM is negatively associated with ESG performance overall. When the CEO is female, the relationship becomes U-shaped: initially negative, then positive above roughly 50% female representation. These findings support a "critical mass + aligned leadership" interpretation rather than simple linear relationship between female representation and ESG performance.
(Hoch et al., 2025)	1,555 family firms from 29 countries	This study shows that firms led by female CEOs achieve better CSR performance, particularly with respect to internal CSR practices. The authors emphasize that this relationship is contingent upon the institutional context. Specifically, the positive effect of female CEOs is strengthened in countries characterized by higher levels of legal gender equality. The findings indicate that this influence is also more pronounced in societies with stronger social gender biases against women, suggesting that institutional norms play a

		crucial role in shaping female CEOs' ability to promote CSR practices.
(Fodouop Kouam, 2025)	Global sample of fintech firms; mixed-methods approach (quantitative regression + qualitative thematic coding)	This study demonstrates that gender diversity within leadership teams has a positive and significant influence on corporate commitment to CSR. The author explains that this relationship is partially mediated by employee engagement, serving as a key mechanism for enhancing CSR performance. The findings reveal that this positive effect is strengthened by an inclusive organizational culture and diversity-oriented recruitment practices. These factors act as moderating factors in this relationship.
(García-Meca et al., 2024)	IBEX 35 (Spain), 35 non-financial listed companies, 2015–2019; 175 firm-year observations	The authors demonstrate that the impact of women on corporate boards varies according to their expertise and experience .The findings reveal that female directors with significant managerial experience (female business experts) have a positive and statistically significant effect on environmental innovation , even when their representation remains below the critical mass threshold .In contrast female directors classified as female support specialists, with technical expertise in fields such as finance, law , and sustainable development, positively influence environmental innovation only when they reach a critical mass of at least three women on the board of directors. The authors emphasize that female directors' expertise, experience, and legitimacy are key factors influencing their ability to shape strategic decisions in favor of environmental innovation and enhance ESG performance.
(Karamahmutoglu & Kaya, 2026)	Turkish non-financial firms listed on Borsa Istanbul, 2008–2023; ESG data from LSEG; financial companies excluded for sample homogeneity	The findings provide no empirical evidence supporting this theory. Specifically, the presence of at least three women on the board of directors was not significantly associated with improved ESG performance. Instead, the authors showed that a better gender balance within the board of directors is a more important determinant of ESG performance than achieving a minimum threshold of female representation.

Source: Authors

Discussion

The Contribution of the Bibliometric Analysis

At the field level, bibliometric analysis offers a structural viewpoint that a systematic review alone cannot provide. Three outcomes stand out. First, the annual production curve shows a clearly young field, with significant growth only appearing after 2022, timing that coincides with the tightening of European ESG reporting regulations, such as the CSRD. This suggests regulatory pressure, rather than academic interest alone, has been a driving force behind scholarly attention to the topic. Second, the analysis of sources and co-occurrence further shows that the field remains disciplinarily anchored in CSR and environmental management, rather than centered on leadership research per se. The most productive journals lean toward a CSR orientation, and the keyword network splits into a cluster focused on governance mechanisms and a cluster focused on outcomes, with the term'' leadership '' occupying only a peripheral position. Third, the thematic mapping adds a maturity dimension to this

observation: the '' women/directors/firm performance'' cluster sits in the least central, least developed quadrant of the map. The ''gender diversity '' cluster, by contrast, sits in the Basic Themes quadrant, central to the field, yet still underdeveloped as an independent research topic. These bibliometric results point to something beyond a simple lack of study: female leadership isn't understudied; it's misclassified, treated as a peripheral variable in governance and ESG outcome models rather than as a leadership construct with its own theoretical identity.

The Contributions of the Systematic Literature Review

The bibliometric analysis maps the field's structure, and the systematic literature review digs into its content specifically: the conditions under which female leadership actually strengthens sustainability outcomes. Out of the 8 studies reviewed, three findings stand out that a purely quantitative mapping could not have surfaced. First, the evidence on Critical Mass Theory is mixed rather than confirmatory. (Arcuri & Pisani, 2026) find that female CEOs improve ESG performance only once female representation among managers crosses roughly the 50% mark. . (Karamahmutoglu & Kaya, 2026) ,by contrast, find no significant effect of the ''three women '' threshold at all, instead identifying broad gender balance as the more relevant factor. Second, several studies suggest that expertise and authority matter more than mere representation. (García-Meca et al., 2024) find that only female directors with substantial managerial or technical expertise meaningfully affect environmental innovation. (Grau et al., 2026) point in a similar direction: board gender diversity's effect on ESG performance depends on which other board members it interacts with, rather than on female representation alone. Third, institutional context functions as a genuine moderator rather than a secondary control variable. (Hoch et al., 2025) find that the impact of female CEOs on CSR is stronger in countries with greater legal gender equality. (Elsheikh et al., 2024) similarly note that the diversity-ESG relationship itself depends on the institutional environment.

Synthesis

Reading these sets of findings together reveals a productive tension. The bibliometric analysis shows a field that talks about female leadership mainly as a demographic attribute of the board of directors, something to count, threshold, and correlate with ESG scores. The systematic review tells a different story. Look closely at the content, and the studies producing the most robust, theoretically interesting findings are precisely those that move past headcounts to ask what women actually bring to leadership- expertise, executive authority, and how these interact with institutional context. In other words, the disagreements within the systematic review itself, mixed results on Critical Mass Theory, and effects that shift depending on expertise provide a mechanism-level explanation for something the bibliometric mapping only shows structurally. The field has reached a certain maturity in measuring female presence, but not yet in theorizing female leadership as such. This is precisely the finding that justifies the conceptual framework proposed in this study (Figure 1). By positioning critical mass and tokenism as moderators rather than mechanisms in their own right, and by placing the expertise and decision -making authority of female leaders at the center of the explanatory mechanisms drawing on Stakeholder Theory and Upper Echelons Theory, this model offers a first attempt to explicitly distinguish representation from influence a distinction that, according to our two analyses, is not yet systematically established in the current literature.

Implications

Practical Implications

Increasing the proportion of women in senior decision-making and leadership positions is crucial, but improving corporate sustainability may require more than numerical representation alone. It is also important to consider if women have the knowledge, authority, and organizational conditions needed to genuinely influence strategic decisions. The findings also have practical implications for companies and their CEOs.First, companies should not assess female leadership solely based on the proportion of women in senior positions. The findings show that women's knowledge, experience, and decision-making ability are important for turning female representation in leadership positions into concrete contributions to corporate sustainability. Companies should facilitate women's access to leadership positions where they can have a real influence on strategic decisions. Second, women's skills, professional experience, and decision-making ability should be given particular attention in recruitment and promotion processes. Finally, companies should create an inclusive environment that allows women in leadership positions to have a meaningful influence on strategic decisions and sustainability initiatives.

Policy Implications

The results suggest that programs aimed at promoting female leadership should go beyond simply increasing the proportion of women in senior roles. They should also support women's participation in strategic decision-making and their access to high-level positions. This could include programs to develop women's skills and support their career progression toward decision-making positions, as well as measures to promote equal access to leadership positions and improve transparency in reporting on women's representation in senior roles. The systematic review also highlights the importance of the institutional context, showing that gender equality policies may create more favorable conditions for female executives to have a meaningful influence on corporate sustainability.

Conclusion

This research aims to examine how and under what conditions female leadership influences corporate sustainability. The study is structured around two complementary frameworks: a conceptual framework that analyses the leadership style adopted by female executives, its associated traits and characteristics, and a theoretical framework that draws on the main theories explaining the role of women in organizational sustainability. Methodologically, the findings from the literature show that female leadership generally contributes positively to corporate sustainability by enhancing ESG performance, CSR engagement, and environmental innovation. This influence is not universal. Some studies indicate that a minimum threshold of female representation is necessary to generate sustainability outcomes, while others suggest that gender diversity alone is insufficient. The effectiveness of female leadership depends on several contextual and organizational factors, including the institutional environment, firm characteristics, governance structures, women’s professional expertise, and their decision-making authority. These findings highlight that the relationship between female leadership and corporate sustainability should be understood from a contingency perspective rather than as a universal phenomenon.

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References

Al-Shaer, H., Zaman, M., & Albitar, K. (2026). CEO gender, critical mass of board gender diversity and ESG performance: UK evidence. *Journal of Accounting Literature*, *48*(1), 76–110. https://doi.org/10.1108/JAL-10-2023-0181

Arcuri, M. C., & Pisani, R. (2026). *Gender diversity on the board and in top management and ESG performance: Evidence from Italian non-financial listed companies*. https://doi.org/10.1007/s10997-026-09803-0

Bass, B. M. (1985a). *Leadership and Performance Beyond Expectations*. Free Press.

Bass, B. M. (with Internet Archive). (1985b). *Leadership and performance beyond expectations*. New York : Free Press ; London : Collier Macmillan. http://archive.org/details/leadershipperfor0000bass

Birindelli, G., Iannuzzi, A. P., & Savioli, M. (2019). *The impact of women leaders on environmental performance: Evidence on gender diversity in banks*. https://doi.org/10.1002/csr.1762

Blake, R. R., & Mouton, J. S. (with Internet Archive). (1964). *The managerial grid: Key orientations for achieving production through people*. Houston, Tex., Gulf Pub. Co. http://archive.org/details/managerialgridke00blak

Burns, J. M. (with Internet Archive). (1978). *Leadership*. New York : Harper & Row. http://archive.org/details/leadership1978burn

Cucari, N., Esposito De Falco, S., & Orlando, B. (2018). Diversity of Board of Directors and Environmental Social Governance: Evidence from Italian Listed Companies. *Corporate Social Responsibility and Environmental Management*, *25*(3), 250–266. https://doi.org/10.1002/csr.1452

Eagly, A. H., & Carli, L. L. (2007). *Through the Labyrinth: The Truth About How Women Become Leaders*. Harvard Business Review Press.

Eagly, A. H., Johannesen-Schmidt, M. C., & Van Engen, M. L. (2003). Transformational, transactional, and laissez-faire leadership styles: A meta-analysis comparing women and men. *Psychological Bulletin*, *129*(4), 569–591. https://doi.org/10.1037/0033-2909.129.4.569

Elkington, J. (1998). *Cannibals with Forks: The Triple Bottom Line of 21st Century Business*. New Society Publishers.

Elsheikh, T., Almaqtari, F. A., Al-Hattami, H. M., Al-Bukhrani, M. A., & Ettish, A. A. (2024). The moderating effect of women in boardrooms on the relationship between control of corruption and corporate sustainability performance. *Discover Sustainability*, *5*(1), 502. https://doi.org/10.1007/s43621-024-00490-1

Fodouop Kouam, A. W. (2025). Breaking the Bias: How Gender-Diverse Leadership Drives Performance and Social Responsibility in Fintech Firms. *Corporate Social Responsibility and Environmental Management*. Scopus. https://doi.org/10.1002/csr.70343

García-Meca, E., Ramón-Llorens, M. C., & Martínez-Ferrero, J. (2024). Feminine expertise on board and environmental innovation: The role of critical mass. *Review of Managerial Science*, *18*(8), 2255–2286. https://doi.org/10.1007/s11846-023-00685-2

Ghazwani, M. (2026). The Impact of Board Diversity and Ownership on Environmental Innovation: The Moderating Role of CSR Committees in G20 Firms. *Sustainable Development*, *n/a*(n/a). https://doi.org/10.1002/sd.70653

Glass, C., Cook, A., & Ingersoll, A. R. (2015). *Do Women Leaders Promote Sustainability? Analyzing the Effect of Corporate Governance Composition on Environmental Performance*. https://doi.org/10.1002/bse.1879

Goleman, D., Boyatzis, R. E., & McKee, A. (2002). *Primal leadership: Realizing the power of emotional intelligence*. Harvard Business School Press.

Grau, A., Bel-Oms, I., Castelo-Branco, M., & Núñez-Almonte, J. (2026). Director typology and ESG performance: Does board gender diversity matter? Evidence from European sustainable companies. *Review of Managerial Science*. https://doi.org/10.1007/s11846-026-00998-y

Helgesen, S. (1995). *The Web of Inclusion: A New Architecture for Building Great Organizations*. Currency/Doubleday.

Hoch, F., Seyberth, L., Faherty, C. M., Clinton, E., & Sharma, P. (2025). Can Women Save a Man's World? The Influence of Gender-Discriminating Institutions on Female Family CEOs' CSR Performance. *Journal of Business Ethics*, *202*(2), 357–376. https://doi.org/10.1007/s10551-025-05952-8

Hyun, E., Yang, D., Jung, H., & Hong, K. (2016). Women on boards and corporate social responsibility. *Sustainability (Switzerland)*, *8*(4). Scopus. https://doi.org/10.3390/su8040300

Kanter. (1977). *Men and Women of the Corporation*.

Karamahmutoglu, M. K., & Kaya, H. F. (2026). Unveiling the Nexus Between Board Gender Diversity, CSR and Financial Performance: Evidence From an Emerging Economy. *Corporate Social Responsibility and Environmental Management*, csr.70608. https://doi.org/10.1002/csr.70608

Lewin, K., Lippitt, R., & White, R. K. (1939). Patterns of Aggressive Behavior in Experimentally Created "Social Climates." *The Journal of Social Psychology*, *10*(2), 269–299. https://doi.org/10.1080/00224545.1939.9713366

Liao, Y. (2022). Sustainable leadership: A literature review and prospects for future research. *Frontiers in Psychology*, *13*, 1045570. https://doi.org/10.3389/fpsyg.2022.1045570

Sally Helgesen. (1990). *The Female Advantage: Women's Ways of Leadership*.

Tannen, D. (with Internet Archive). (1990). *You just don't understand: Women and men in conversation*. New York, NY : Morrow. http://archive.org/details/youjustdontunder0000tann