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# Mapping the Landscape of ESG Strategies: A Bibliometric Review and Recommendations for Future Research

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**Abstract:** Environmental, social, and governance (ESG) together comprise what is regarded as a metric system that can be used to gauge a corporation's performance in various facets of social responsibility. The increasing urgency for businesses to contemplate and proactively address ESG issues, due to their immediate relevance, underscores its importance in contemporary business landscapes. In the current academic landscape, scholars across various disciplines have thus been engaged in rigorous investigations of ESG. This research aims to present an overarching comprehension of the theoretical foundation of ESG by reviewing existing research and highlight the latest trends in ESG literature in the field of management. We have engaged in a comprehensive bibliometric examination, supplementing our research with the application of co-citation and bibliographic coupling methodologies. Based on co-citation analysis, this study elucidates four theoretical foundations of ESG research: Sustainability of competitive advantage; compliance of social construction; alignment of governance accountability; and allocation of sustainable capital. We then employ bibliographic coupling to assess current research trends, revealing five groups of research trends correlated with the topics: ESG activities and economic outcomes; ESG reporting and non-financial disclosure; ESG performance and corporate sustainability; ESG attributes and investment market; and ESG practices and board diversity. Furthermore, this study summarizes future research directions in the ESG domain.

**Keywords:** ESG; environmental; social; governance; literature review; bibliometric review; co-citation analysis; bibliographic coupling



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## 1. Introduction

Environmental, social, and governance (ESG) factors have been recognized as crucial elements in ethical or socially responsible investing [1,2] and are critical indicators of companies' managerial skill, non-financial performance, and risk management [3,4]. The concept of ESG took hold in the early 1970s when socially conscious investors began to incorporate social and environmental concerns into their decisions when evaluating an investment's sustainability and ethical impact [2]. Since the establishment of the United Nations Environmental Programme Financial Initiative (UNEP FI) in the year 1992, there has been an observable and substantial transition within financial institutions. This shift is characterized by the increasingly pervasive incorporation of ESG considerations into their decision-making paradigms [5]. Following this progression, the ESG criteria have emerged prominently, evolving into the principal metric through which the international community assesses the potential of economic entities to achieve sustainable growth [6]. The increased ESG consideration by institutional and individual investors motivate companies to operate more transparently in order to fulfil their responsibilities to shareholders and stakeholders [3,7].

Parallel to the burgeoning interest in ESG expressed by corporate managers and investors, academic research in this field has witnessed exponential growth. Some rationales underscore both the theoretical significance and practical necessity of undertaking a holistic evaluation of ESG factors [5,8]. First, and subsequent to these initial contributions, the corpus of literature pertaining to ESG factors has experienced a swift and considerable expansion, resulting in a substantial, though disparate, body of academic literature [6,7]. Second, extant literature reviews centred on ESG factors tend to be domain specific in scope. Current scholarly endeavours have delved into a diversity of sectors in order to interrogate the correlation between ESG and financing decisions [9], and performance [10], and firm value creation [11,12]. Though extant studies have provided a wide-ranging review of ESG research in the fields of accounting and finance [9–12], there is a scarcity of comprehensive reviews from the perspective of management and business studies. Moreover, existing review studies have not sufficiently provided a comprehensive synthesis of the theoretical underpinnings and emerging research trajectories within the ESG literature. Third, the prevalent review studies amalgamate research on ESG and corporate social responsibility (CSR) factors, thereby neglecting the nuanced differentiation between ESG as an integrative concept and CSR [11]. Fourth, and as underscored in prior reviews [4,5], ESG research over the past decades has been unsuccessful in yielding unambiguous and consistent outcomes, providing cogent guidance for management, and in establishing persuasive "best practice" solutions.

The principal objective of this research is to provide a comprehensive bibliometric examination of the literature pertaining to ESG studies in the field of management. Specifically, the study aims to: (1) delineate the theoretical underpinnings of ESG in the field of management, (2) identify prevalent themes in current ESG research within this field, and (3) suggest potential trajectories for future scholarly exploration. By illuminating the key theoretical foundations and the evolving trajectory of this research area, and by indicating potential research voids, this study is projected to function as a pivotal reference for scholars, providing strategic direction for their forthcoming research endeavours. Therefore, we direct our attention towards two primary research questions. The first question is: what are the crucial theoretical foundations of ESG research? The second question is: what are the prevailing trends within the realm of ESG research? The first research question calls for a categorization of scholarly articles. This process resulted in the delineation of four key theoretical pillars: (A) Sustainability of competitive advantage, (B) Compliancewith social construction, (C) Alignmentof governance accountability, and (D) Allocation of sustainable capital. Pertaining to the second research question, we analysed the same set of referenced articles and identified five emerging research streams: (1) ESG activities and economic outcomes; (2) ESG reporting and non-financial disclosure; (3) ESG performance and corporate sustainability; (4) ESG attributes and investment market; and (5) ESG practices and board diversity.

This article employs bibliometric methodologies to undertake a comprehensive review of the ESG literature. Bibliometric analyses have proven their efficacy across an extensive spectrum of management research domains [11,13,14]. Bibliometric reviews, as opposed to highly cited reviews in this field [15], exhibit distinctive characteristics in terms of coverage, data, and analysis [16]. A significant advantage of bibliometric methodologies lies in their capacity to mitigate the subjectivity and bias of reviewers, which are intrinsically associated with traditional qualitative reviews [17]. In a departure from commonly cited reviews in this field, our bibliometric analysis of the ESG domain leans heavily on quantitative data. This approach differs significantly from qualitative interpretations that are often subject to the subjective perspectives and potential bias of the authors [15,16]. Our methodology, therefore, offers a more objective and fact-based overview of the field. This research conducts a bibliometric review of the ESG scholarship covering the period from 2009 to 2022. In our study, we employ a combined approach that integrates two methodologies, specifically co-citation analysis and bibliographic coupling. This fusion of techniques forms the foundation of our research methodology. This integrated analysis permits us to construct a network visualization of publications related to ESG topics. Through this visualization, we can discern and identify distinct clusters of scholarly works that are thematically related. This quantitative overview has enabled us to construct a more comprehensive and systematic depiction of the ESG research landscape, particularly with respect to theoretical foundations and potential trajectories for future investigation.

The organization of this article is as follows: In the ensuing section, Section 2, we explicate the definition of the ESG concept. Section 3 details the methodology employed in this review and outlines the included articles. Section 4 delves into the theoretical cornerstones of ESG research, while Section 5 engages with recent debates within the ESG research domain. Finally, Section 6 elucidates the pivotal conclusions drawn from this examination and provides detailed discourse on prospective directions for subsequent academic investigation.

## 2. Defining ESG

ESG is considered an indicator technique adopted to capture a firm's performance in various areas of social responsibility [18]. The imperative to contemplate and proactively engage with ESG issues has recently intensified owing to the immediate pertinence of these matters to business operations [19]. Financial institutions, governments, and individual investors have been paying more attention to supporting low-carbon and green development for environmental protection, energy conservation, and clean energy and have begun examining companies' ESG performance [7]. Many well-known ESG data brokers (for example, Bloomberg, Thomson Reuters, and investment banks) joined together to construct the ESG evaluation system [20]. The ESG assessment system primarily comprises three dimensions: environment, society, and governance. Each of these dimensions delineates the diverse areas of obligations incumbent upon a firm, namely environmental stewardship, social involvement, and corporate governance, respectively. Environmental responsibility chiefly pertains to a company's commitment to environmental conservation in its production and business operations. This typically involves concentration on the volume of emissions and pollution produced during the company's business activities, as well as the quantity of natural resources utilized [21]. Environmental responsibility also records the company's efforts to improve the ecosystem, which mainly refers to improving environmental performance in operation and reducing environmental costs per unit of output value [22,23]. Social responsibility indicates that a company should abide by higher legal norms, social ethics, and business ethics and emphasize the relationship between external and internal society, including related parties' interests, human rights, and industrial ecology improvement [21]. Social responsibility primarily captures a company's relationship with stakeholders such as customers and employees, and is a factor that is often measured by looking at a company's programs related to employee benefits and loyalty and to ensuring customer satisfaction [24,25]. Governance responsibility epitomizes the manner in which a corporation's executive cadre manoeuvres to safeguard the enduring interests of its shareholders [21]. The degree to which shareholders' rights are safeguarded, the effectiveness of directors, and the structure of executive remuneration are utilized to determine the effectiveness of governance [26,27].

## 3. Methodology

This paper utilizes bibliometric methods to analyse previous research on ESG and present a comprehensive overview of the ESG research agenda. Bibliometric methods enable quantitative and objective examination of publications to identify relevant similarities, connections, and trends [28]. Researchers can employ this to quantitatively review the existing literature, supplementing and validating insights derived from qualitative literature reviews [29]. As a consequence, this helps to minimize human error and bias when synthesizing diverse literature [30]. Our bibliometric analysis follows the procedure guided by Kovács et al. [29] and van Oorschot et al. [30], including four steps: (1) identification, (2) screening, (3) data analysis, and (4) data synthesis (See Figure 1).

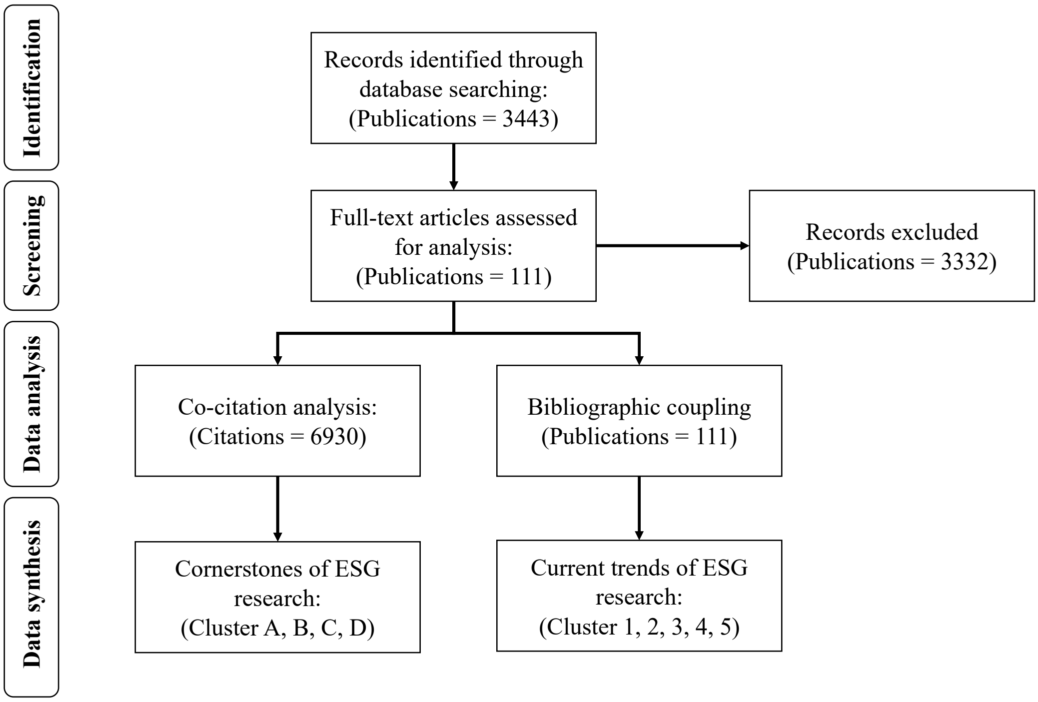


**Figure 1.** Bibliometric analysis process.

### *3.1. Review Procedures*

#### 3.1.1. Identification

The input data of our review was generated by a search query of the Title, Abstract and Keyword fields from the Web of Science Core Collection (WoS) database. In order to precisely capture the underlying research related to ESG, we excluded the relevant themes, such as CSR, socially responsible investing (SRI), ethics, responsibility and sustainability that are mentioned in previous literature reviews of ESG [31–33]. Therefore, the search terms were "ESG" OR "environmental, social and governance". As a result, our initial article search yielded 3443 articles.

#### 3.1.2. Screening

In order to ensure the research sample's quality, we further screened the initial sample using exclusion criteria aligned with current review research [30,34,35]. Primarily, our selection criteria were strictly confined to articles that have been published in scholarly journals and have undergone peer review processes. Secondly, articles were limited to the English language. This standard ensures the constitution of a collective scientific knowledge foundation, as encapsulated by the majority of peer-reviewed scholarly publications [35]. Third, we further narrowed down our review to the articles in the WoS Research Arearesearch area "Management OR Business", as our primary interest is understanding ESG in management and business research [30]. Fourth, we limited our sample to articles published in journals rated 3 and above in the 2021 AJG rankings list [34,35]. Lastly, to assess the articles' relevance to ESG, three reviewers conducted a manual evaluation of each article's title, abstract, keywords, and introduction section. This process enabled us to exclude articles that mention the terms "ESG" or "environmental, social, and governance" in their title, abstract, or keywords, yet lack relevance to the domain of interest [30]. As our review only focused on the strategic management filed, we excluded the investment literature on ESG investing or SRI. As a result of applying these exclusion criteria, the final sample consisted of 111 articles and 6930 citations for bibliometric analysis.

### 3.1.3. Data Analysis

The VOSviewer software (version 1.6.19) was used to implement the co-citation and bibliographic coupling analysis on the WoS data of the remaining 111 articles. VOSviewer's functionality is especially valuable for the clear visualization of extensive bibliometric maps [36]. Consequently, VOSviewer was utilized to identify 111 articles for bibliographic coupling and 6930 cited references for co-citation analysis. The descriptive statistics of the dataset are presented in Figure 2 and Table 1. Section 3.2 will provide an introduction to the co-citation analysis and bibliographic coupling methods.

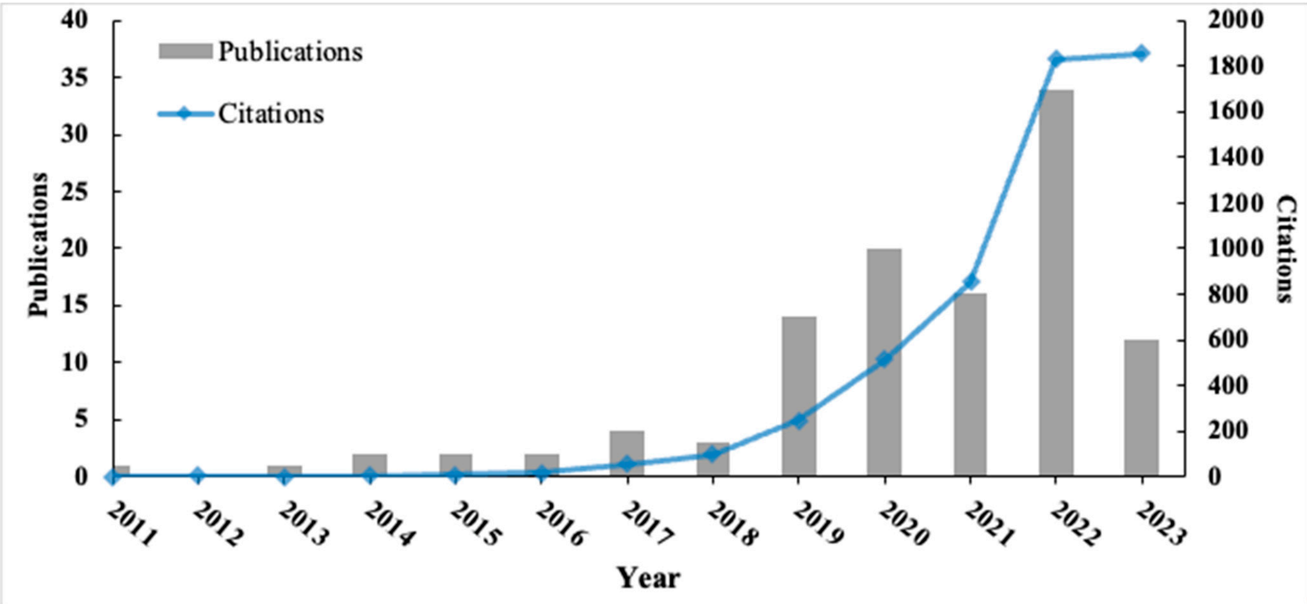


**Figure 2.** Growth of publications and citations on the ESG over time. Value for 2023 is estimated based on data until 29 April 2023.

**Table 1.** Distribution of publications in academic journals.

| Source Title | Publications | AJG Ranking |
|---|---|---|
| Business Strategy and the Environment | 53 | 3 |
| Journal of Business Ethics | 22 | 3 |
| Technological Forecasting and Social Change | 5 | 3 |
| Organization and Environment | 5 | 3 |
| Corporate Governance: An International Review | 5 | 3 |
| Management Science | 4 | 4* |
| Journal of Business Research | 4 | 3 |
| Tourism Management | 2 | 4 |
| Business and Society | 2 | 3 |
| Journal of Operations Management | 2 | 4* |
| Journal of World Business | 1 | 4 |
| British Journal of Management | 1 | 4 |
| Organization Science | 1 | 4* |
| Long Range Planning | 1 | 3 |
| Journal of the Operational Research Society | 1 | 3 |
| California Management Review | 1 | 3 |
| International Business Review | 1 | 3 |
| Total number | 111 | |

AJG ranks journal from 4* to 1 (4* is the highest-ranked title).

#### 3.1.4. Data Synthesizing

Following the analysis, we synthesized and elucidated the results of co-citation analyses and the bibliometric coupling. Co-citation analysis was employed to identify the theoretical foundations of ESG research, specifically Clusters A, B, C, and D. Moreover, bibliographic coupling analysis was adopted to identify five distinct thematic clusters, including Clusters 1, 2, 3, 4, and 5, within the realm of current ESG research. After independently labelling the clusters, three reviewers discussed the results to assign a consistent label for each cluster. In Section 4, we will discuss the identified theoretical cornerstones, while Section 5 will examine current research trends.

### *3.2. Methods: Co-Citation Analysis and Bibliographic Coupling*

To identify thematic clusters in ESG research within the fields of management and business, we utilize two bibliometric analysis techniques that rely on the reference patterns of the articles: (1) co-citation analysis and (2) bibliographic coupling. The underlying assumption of these techniques is that the reference cited in the focal publication provides context for the publication, indicating a certain level of relevance between the focal publication and the publication it references [29]. Co-citation analysis and bibliographic coupling are complementary in that co-citation allows for clustering the origins of a field, while bibliographic coupling captures recent trends within that field [29,37]. Co-citation analysis reveals the foundational pillars constituting the vanguard of research within the ESG academic literature. Conversely, bibliographic coupling is instrumental in identifying clusters that encompass current research themes on ESG, which may not necessarily align with the fundamental pillars (refer to Figure 3 for an illustration of co-citation and bibliographic coupling analysis). In Figure 3, the illustration provided, the grey box symbolizes the chronologically arranged dataset of ESG papers, which was subjected to review. This dataset encompasses publications from the period extending between 2009 and 2022. Articles 1, 2, 3, 4, and 5 are the latest publications, while articles 6, 7, 8, and 9 were published earlier, dating back to 2009. Articles A, B, C, and D were published prior to 2009 and do not form part of the dataset under review. Despite this, they are invoked as references in the articles within the dataset, thereby functioning as external referential sources. Clusters A and B, which are deemed as the theoretical cornerstones of existing ESG research and comprising articles published prior to those within the dataset [29,30,37], were formed through co-citation analysis. The application of bibliographic coupling to the dataset, considering the interconnections between articles that reference the same set of cited articles, led to the establishment of Clusters 1 and 2 [29,30,37].

In line with the previous studies [15,28–30], the association strength measure was employed to ascertain the relatedness between a pair of focal publications. The measure normalizes the frequency of co-occurrence of references made by the focal publications (in the case of bibliographic coupling) or received by them (in the case of co-citation analysis) [29]. The association strength, $AS_{ij}$, between the two focal publications $i$ and $j$ is calculated according to the equation of Van Eck and Waltman [15,36]:

$$AS_{ij} = \frac{C_{ij}}{W_i W_j}$$

where $C_{ij}$ represents the count of shared citations received or references made by both publication $i$ and publication $j$, $W_i$ relates to the total count of citations or references of publication $i$, and $W_j$ relates to the total count of citations or references of publication $j$. The statement implies that the similarity between focal publication $i$ and publication $j$ is proportional to the ratio of the observed count of shared references to the expected count of references shared by both publications [15]. Therefore, the stronger the association between a pair of focal publications, the more closely related these publications are [15]. This calculation was applied for every pair of focal publications in our dataset for both co-citation analysis and bibliographic coupling. The resulting similarity matrix was utilized as input to visualize and identify thematic clusters within ESG research [29].

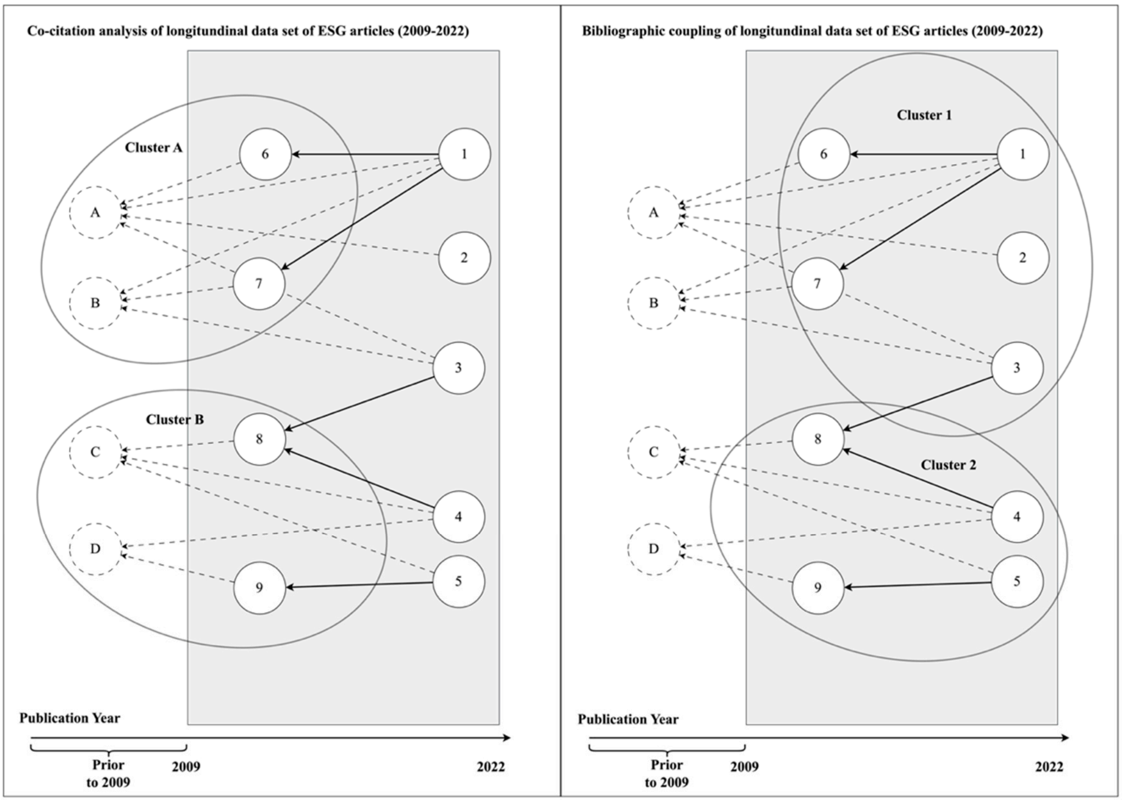


**Figure 3.** Representation of co-citation analysis and bibliographic coupling (adapted from Boyack and Klavans [37]; Kovács et al. [29]; van Oorschot et al. [30]).

The visualization of similarities (VOS) mapping technique was utilized to recognize and visualize thematic clusters using the similarity matrix of publications in our dataset [15]. This technique combines clustering algorithms and optimization to graphically represent the similarities between articles in our dataset, as well as the similarities between their reference lists in the software, VOSviewer [29,30]. VOSviewer applies the VOS mapping technique to position the publications in a two-dimensional map, placing highly related publications in proximity and separating less related publications [15]. Subsequently, the publications are assigned to clusters by the VOS clustering algorithm, which is based on a weighted version of Newman and Girvan's modularity function [38]. The maximum number of clusters is determined by the resolution parameter (set to 1.0 by default) using the modularization function. A higher value of this parameter corresponds to a larger number of clusters. This study set the resolution parameter to 1.1 for co-citation analysis and 1.0 for bibliographic coupling, leading to a clearer differentiation among clusters. All other parameters remained at their default settings. The size of the nodes is represented by each article title, while the dimensions of the respective coloured circles signify the prominence of each article within the comprehensive research landscape (See Figures in Sections 4 and 5). The proximity of two adjacent articles indicates a greater overlap of citation topics between them. That said, articles that are close together are frequently cited in the same publication and tend to share similar themes and research directions, whereas articles that are distant from each other on the map are seldom cited together.

## 4. Cornerstones of ESG Research

Figure 4 presents the visual results of co-citation analysis, thereby unveiling the theoretical underpinnings of the existing ESG research. We identified 6930 references that met the requirements of our analysis. To discern the more consequential ones for the elucidation of representative clusters, we narrowed our attention to articles that had garnered a minimum of seven citations. Specifically, our research network contained four clusters. Cluster A, represented by the red, contains 16 articles and 3 book publications, and can be referred to as "Sustainability of Competitive Advantage". Cluster B, represented by the green, contains 721 articles and can be categorized as "Compliance of Social Construction". In addition, Cluster C contains 19 articles, is shown in blue in the map and can be categorized as "Alignment of Governance Accountability". Finally, Cluster D contains 17 articles and is shown in yellow. It indicates closely related fields with Clusters A, B and C. We classified this cluster under the label "Allocation of Sustainable Capital". In our network, the literature represented by larger nodes has a higher citation frequency, while the distance between each node indicate how often different literature is cited together. We therefore divide publications on each topic by clusters, and literature located in the same cluster will be more likely to be cited simultaneously.

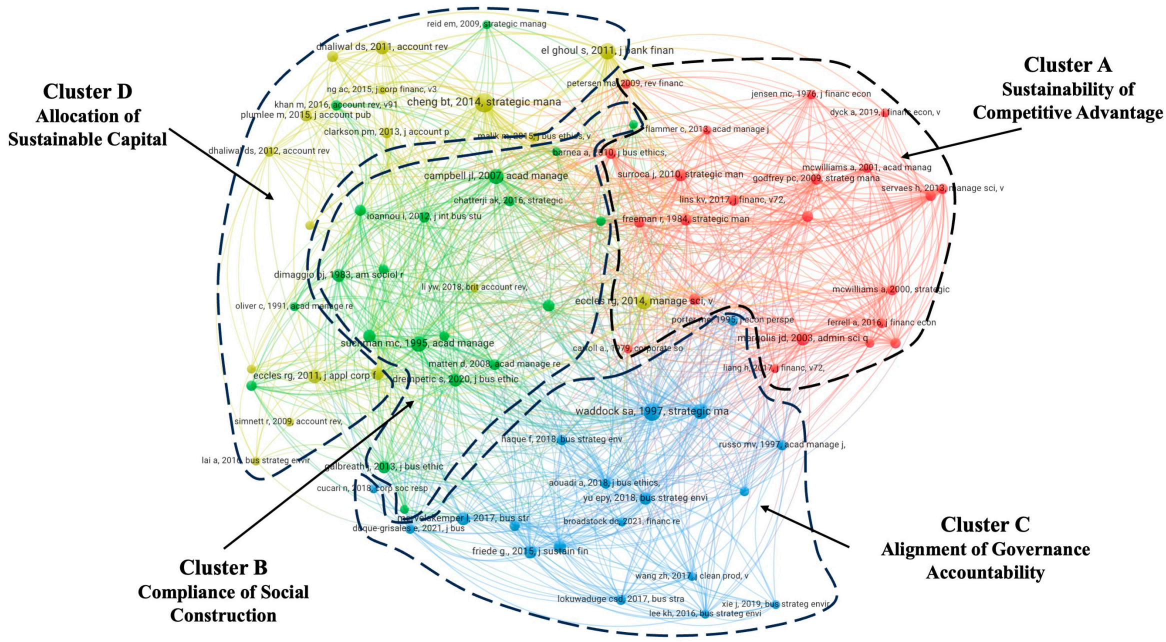


**Figure 4.** Visualization of the co-citation network derived from the ESG literature (2009–2022).

### *4.1. Cluster A: Sustainability of Competitive Advantage*

Cluster A, encompassing 16 articles and 3 book publications, can be aptly identified under the thematic banner of "Sustainability of Competitive Advantage". It is commonplace for the publications within this cluster to address the factors governing the strategic execution of environmental, social, and governance (ESG) initiatives by firms, ultimately fostering unique competitive advantages that grant resilience. Predominantly, the explanations can be traced back to the resource-based view (RBV) [39,40] and the stakeholder theory [41,42]. Both the RBV and the stakeholder theory acknowledge sustainability as a crucial component within their respective frameworks, albeit differing in their interpretations of the concept of sustainability [43]. RBV utilises the term "sustainable" within a conventional strategic management context, associating "sustained" with the concept of competitive advantage [40]. As per the RBV, discrepancies in firm performance predominantly arise from the variances in a firm's resource endowment, particularly of intangible resources, given the difficulty of their acquisition, development, replication, accumulation, and given their imitation by competitors [44]. Given the increasing significance of ecological and social matters in today's global landscape, it is crucial to incorporate these natural and societal considerations into the resource-based view (RBV) model. This integration could potentially prove advantageous in unearthing new avenues for competitive dominance. Hart's [45] concept of the natural RBV provides a robust framework by which to address this gap. This model has been empirically corroborated by various studies, notably by Sharma and Vredenburg [46], and posits that environmental and societal pressures can stimulate the creation of intangible organizational resources. These resources could subsequently serve as potential sources of competitive advantage. Within Cluster A, Surroca et al. [40] leveraged the natural RBV framework to posit that intangible resources act as key mediating variables that can help elucidate the linkage between firms' responsibility performance and their financial performance.

Within this cluster, scholarly works explore firm-based intangible resources, such as reputation, innovation, and human resources [39,40,47–50]. Specifically, and firstly, existing RBV research underscores the establishment of a positive reputation as the cornerstone of corporate sustained profitability and survival [50]. Supporting ESG initiatives aids companies in enhancing their corporate and brand image, thereby building customer loyalty, attracting superior employees, and negotiating better terms with suppliers, all of which contribute to an elevation in competitive advantage [47]. Secondly, a company's proactive ESG strategy can fortify its capability to generate sustainable innovations pertaining to new markets, products, and technologies [40]. Given that the ability to improve processes and spawn new products and technologies is costly for competitors, such sustainable innovation can serve as a source of competitive advantage. Thirdly, RBV scholars place emphasis on people as a strategic asset to a firm [51]. Improved ESG performance by a company facilitates the accumulation of human capital or human resources, which can turn into a source of competitive advantage. A company's active and proactive ESG strategy is often associated with high-commitment human resource practices, including flexible organizational structures by which to promote information flow, employee empowerment, and employee remuneration rewards [48]. ESG performance also contributes to enhancing employee trust and morale, influencing their work attitudes.

Stakeholder theory conceptualizes "sustainability" as an outcome of the establishment and maintenance of enduring relationships with stakeholders. As per the stakeholder theory, the degree of sustainability is predominantly governed by how comprehensively a firm considers the interests of its diverse stakeholder groups. Sustained stakeholder relationships, due to their inherent value and the difficulty in replicating them, can function as a unique source of sustainable competitive advantage. In contrast with the shareholder theory proposed by Friedman [52], which posits that corporate social responsibility activities detract from a firm's financial performance, Reed [53] affirmed the importance of a firm's interaction with diverse stakeholders. Further, the stakeholder theory, as advanced by Freeman [41], also suggests that such interactions contribute to the improvement of a firm's financial performance. When applied to the ESG domain, the stakeholder theory underscores that a firm should not focus solely on traditional objectives such as profitability but should also contemplate the broader impacts of its strategy, including ethical, social, environmental, and health ramifications [42].

Stakeholder theory proposes that the interests of all stakeholders should be considered as the primary objective for managers [43]. Managing in favour of stakeholders does not inherently necessitate a compromise in a firm's financial performance. Contrarily, a significant corpus of research within the domain of stakeholder management in Cluster A demonstrates that a firm's performance can be augmented when it is responsive to the needs of its stakeholders [9,54–58]. A company's engagement in ESG initiatives can enhance its image among relevant stakeholders, facilitated through proper communication with them [42]. Here, letting stakeholders understand the outcomes of a firm's involvement in ESG activities is crucial, aiding the firm in securing a competitive advantage. The study investigates the strategic determinations undertaken by corporations to fulfil the expectations of a heterogeneous group of stakeholders. Specifically, for internal stakeholders of a company, the implementation of a social responsibility strategy that enhances employee benefits can boost their productivity and loyalty [48]. Firms exhibiting a high degree of social responsibility are also manifested in the market through elevated and more resilient stock price levels, thereby benefiting shareholders [9,54,56]. Additionally, firms may pledge to undertake sustainable initiatives with a view to augmenting their public persona and standing amongst external associates, as posited by Benabou and Tirole [59].

### *4.2. Cluster B: Compliance of Social Construction*

Cluster B, comprising 21 articles, can be categorized as "Compliance of Social Construction". Generally, the academic publications in Cluster B deal with the forces that determine how companies comply with prevalent social constructions that delineate appropriate and legitimate business behaviour [60–62]. The legitimacy theory [63] and the institutional theory [60,64] provide insights into the motivations for complying with social constructs in the domain of ESG management.

The legitimacy theory emphasizes how companies perceive themselves as having an implicit social contract, necessitating operation according to a publicly endorsed belief system about environmental and social responsibility behaviours [63]. Through proactive and reactive legitimization strategies, such as disclosure and reporting [63,65], companies seek to construct and maintain themselves in alignment with good practices recognized within the institutional order [63]. This enables companies to uphold their legitimacy as entities entitled to ongoing resource allocation and support from stakeholders and broader society [66,67]. Conversely, the institutional theory posits that companies follow norms and rules institutionalized as effective, rationalized organizational designs and behaviour templates [60,64]. Compulsory homogenization pressures and the internalization of standards as appropriate through normative socialization processes drive corporate adherence to institutionalized ESG management models [61]. Imitating peer behaviour across the organizational field also serves the function of mimetic legitimacy and uncertainty reduction as rule sets evolve over time [60]. Therefore, in the research within Cluster B, the application of legitimacy theory bears similarities with institutional theory in explaining firm sustainable strategies.

Firstly, both institutional theory and legitimacy theory underscore the interplay between corporate behaviour and its social environment. Both emphasize the influence of social expectations on corporate behaviour. In legitimacy theory, firms need to respond to community expectations through alignment with societal values to maintain their social standing [68]. Similarly, institutional theory emphasizes that firms need to comply with norms, regulations, and societal beliefs—the social expectations—in their institutional environment to maintain their social acceptability [61]. Secondly, both theories posit that firms need to communicate their behaviour through public reporting to meet social expectations and establish trust [67]. In legitimacy theory, firms should meet social expectations by releasing information relevant to their ESG practices in public reports [69]. In institutional theory, firms also need to demonstrate, through public reporting, how they adhere to societal norms and values [70,71]. Thirdly, both theoretical perspectives underscore the significance of a company's commitment to sustainability. In legitimacy theory, a company's sustainable practices can enhance its social standing and image, secure key resources, and thereby generate a competitive advantage [63]. In institutional theory, a company's sustainable practices are seen as a way of complying with societal norms and values, improving the image of the firm among stakeholders; reducing economic, social, environmental, and political costs; and increasing key resource acquisition, thus enhancing operational efficiency and financial performance [64]. Finally, both theories imply that a corporations' socially responsible behaviour can have a positive influence on their non-financial performance [62,72,73]. Firms' engagement in ESG practices can improve their non-financial performance through values, goals, and corporate norms consistent with society [61].

### *4.3. Cluster C: Alignment of Governance Accountability*

Comprising 19 articles, Cluster C can be categorized as "Alignment of Governance Accountability". The collective thrust of the publications within this cluster revolves around the influences that determine the correlation between firms' commitment to and execution of ESG practices and the alignment of governance accountability. Agency theory [74,75] and signalling theory [76,77] provide insights into the motivations driving compliance with societal constructs within the ESG management landscape. Both the signalling framework and agency theory concur that information asymmetry can manipulate the behaviour of market participants and potentially lead to market inefficiencies. These theories underscore the importance of aligning a company's corporate governance practices with its accountability to stakeholders. However, the two theories differ in their primary focus. Agency theory primarily explores mechanisms to safeguard the interests of the less informed party (the principal) [74]. In contrast, signalling theory is primarily concerned with how the party with an informational advantage (the signaller) can convey information to the less informed party (the receiver) by emitting "signals" [77].

Agency theory scrutinizes the relationship between a principal, who appoints another party to undertake a specific task, and the agent who carries out that task. The theory addresses the potential agency problem, which may emanate from a divergence of interests between principals and agents or stem from the principal's incapacity to efficiently oversee the agent's conduct. It further explores how these agency problems can be mitigated via various governance mechanisms [74,78]. Friedman [79], an early proponent of agency theory, proposed that CSR embodies self-serving conduct by managers (agents). He argued that their pursuit of environmental and societal objectives would inevitably lead to diminished profits, thereby undermining the interests of shareholders. The associated research in Cluster C extends this dialogue by examining the conflicts of interest between proprietors and administrators in the pursuit of environmental and societal objectives. Barnea and Rubin [55] examined the linkage between CSR ratings and a company's capital and ownership structure. Their findings suggest that insiders have a tendency to overinvest in CSR. Nonetheless, the empirical investigation conducted by Jo and Harjoto [80] scrutinized the influence of external and internal corporate governance and oversight frameworks on ESG practices, resonating with the conflict resolution hypothesis. They proposed a positive association between ESG practices and effective governance mechanisms if managers use these mechanisms and corporate ESG engagement to resolve conflicts among stakeholders. Additionally, the related agency studies within Cluster C investigated the influence of board diversity [81] and female board members [82] on the formulation of corporate ESG strategic decisions. These studies add another dimension to the agency theory by suggesting that board composition can also affect a firm's approach to ESG issues.

Signalling theory pertains to the use of market signals to rectify issues of information asymmetry, thus enhancing the probability of informed decision-making in transactions [83]. The central premise is the conveyance of signals to external stakeholders about the potential, unobservable capabilities or characteristics of the signaller [77,83]. External stakeholders tend to look for signals that are highly correlated with unobservable beneficial features to analyse current corporate decisions and forecast future outcomes [84]. Although public perceptions of a company's ESG practices play an increasingly substantial role in determining outcomes for employees and management, asymmetrical information limits the ability to differentiate firms [75]. Signalling theory suggests that these information asymmetries can be mitigated through the transmission of various "signals". As such, the signalling theory literature in Cluster C focuses on different contexts, including corporate reports [85], press releases [76], and ratings [86]. Furthermore, signal consistency is a focal point of the signalling theory literature. Stakeholders are more likely to agree on the ESG commitment of focus companies, perceiving them as more predictable [75]. Notably, when levels of ESG engagement are high, the value of signal consistency includes an insurance effect [87]. By emitting consistent signals to stakeholders, the credibility of the collective message is improved, potentially nurturing stakeholders' influential power and moral capital among diverse factors, thereby providing a strategic shield against adverse circumstances [76].

### 4.4. Cluster D: Allocation of Sustainable Capital

Cluster D, encompassing 17 articles, can be classified under the label "Allocation of Sustainable Capital". Commonly, the publications within this cluster address the factors that determine how the allocation of scarce capital resources among market participants responds to firms' adherence to ESG engagement. As depicted in Figure 4, the literature in Cluster D also applies stakeholder theory [88], legitimacy theory [89], and signalling theory [90], overlapping with Clusters A, B, and C. However, unlike the previous cluster categories, which emphasize the influence of corporate ESG practices on its value and profitability, the studies in Cluster D focuses on how a company's ESG practices can give it an advantage in the capital market. This advantage is specifically manifested in terms of access to finance [88], cost of capital [91], and cost of equity capital [92].

Several studies in Cluster D approach corporate ESG practices from the perspective of stakeholder theory, considering them as simultaneous management of multiple stakeholder relationships. A multitude of stakeholders inherently amplifies the necessity for firms to actively interpret their business actions. Sustainable development reports and other mediums serve a wider audience by providing valuable information. This helps attract the financial resources of socially responsible investors by explaining how companies respond to societal calls for sustainable business practices [88]. Signalling theory postulates that, in circumstances of uneven information dissemination, one entity strives to credibly relay its information to the counterpart [83]. The sustainability performance of companies is challenging for stakeholders to access, and they perceive it as asymmetric information [93]. When investors access less information about a company's sustainability performance, they perceive these companies as having a higher risk level, including uncertain future claims and higher expected future costs [93]. Conversely, companies adopting a more proactive environmental stance significantly reduce investors' risk perception [94]. Companies strive to diminish the information asymmetry by actively reporting activities pertinent to sustainable development, allowing the broader public to accept their business operations to ensure legitimacy [95,96]. This approach not only addresses the concerns of stakeholders, but it also favourably positions the company in the capital market, potentially facilitating easier access to finance and leading to a decrease in cost of capital.

## 5. Analysis of Research Trends in the ESG Literature

This section aims to identity the prevailing research trends in the ESG literature by performing bibliographic coupling on 111 publications, resulting in 5 clusters. As Figure 5 shows that there are strong links between Clusters 1, 2, 3, and 5, demonstrating tighter fields and more similar areas of research. Cluster 1 (Red) is the largest cluster with 28 articles labelled as "Firm's ESG Activities and Firm Financial Performance and Value". Cluster 2 (green) identifies 25 studies that focus on ESG reporting and non-financial disclosure and has strong ties to Clusters 3 and 4. Cluster 3 (Blue) is contains 23 papers and focus on ESG performance and corporate sustainability. It is worth noting that Cluster 3 has links with Clusters 1, 2, 4 and 5 and is more closely related to Clusters 1 and 2. Subsequently, Cluster 4 (yellow) only illustrates strong ties to Cluster 5 and is clearly separated from Clusters 1 and 2. This cluster has been labelled as "ESG Attributes and Investment Market" and has 16 articles. However, Cluster 5 (purple) is located in the periphery of the network and is strongly connected to Cluster 4. It consists of 16 articles and primarily focuses on ESG practices and board diversity.

### 5.1. Cluster 1: ESG Activities and Economic Outcomes

Cluster 1 includes 28 articles and mainly focuses on the research of firms' ESG attributes and their economic outcomes. Previous studies have established a comprehensive understanding of the connection between CSR and corporate financial performance, laying a solid theoretical groundwork for studying the economic impact of ESG—an important and widely intriguing outcome [75,85,86].

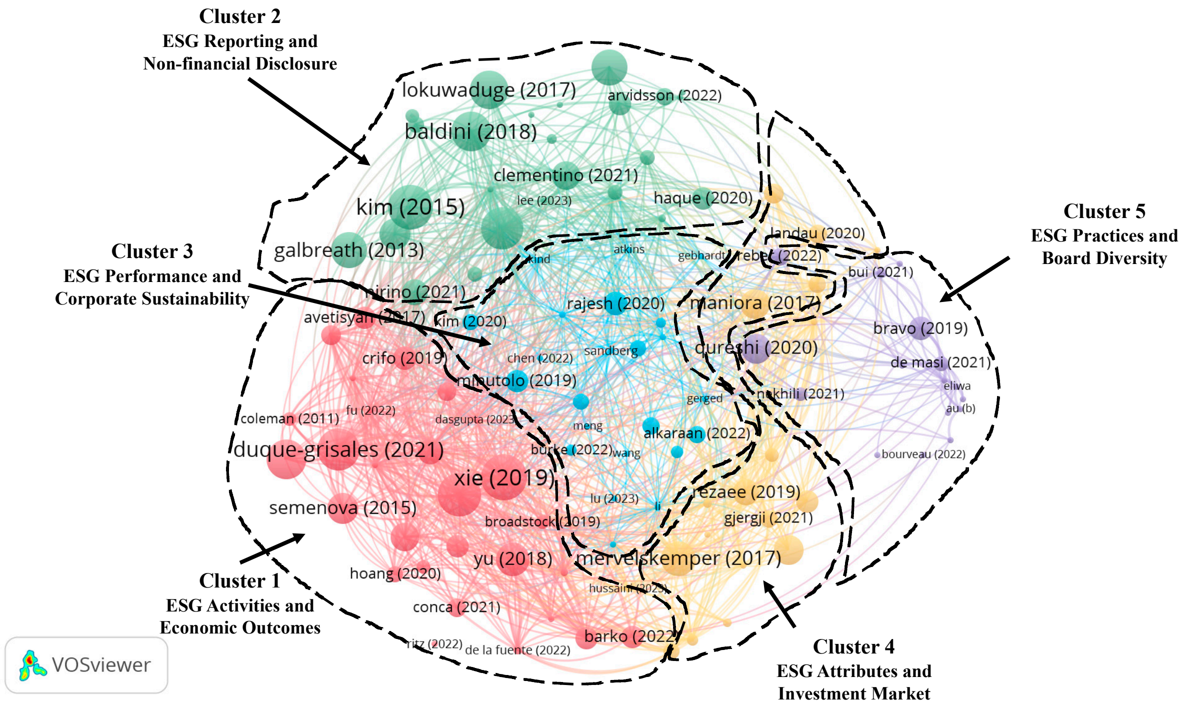


**Figure 5.** Visualization of the bibliographic network derived from the ESG literature (2009–2022).

The relationship between ESG and economic outcomes remains a subject of debate, especially regarding the impact of management choices on firm performance and value. The causal effect of firms' ESG attributes on economic outcomes could potentially be positive, negative, non-linear, or have no effect.

Certain studies suggest that greater engagement in ESG practices can enhance firm performance. Researchers have proposed various mechanisms by which ESG activities can generate value for firms. Firstly, in line with stakeholder theory, corporations can generate value by implementing ESG practices that benefit primary stakeholders such as employees, customers, suppliers, and investors [97–100]. Secondly, according to information asymmetric theory, ESG attributes serve as signals to the capital market and financial institutions, indicating a firm's commitment to sustainable development. This can reduce information asymmetry and increase investor confidence, ultimately leading to increased firm value [19,86,97,99,100].

In contrast, certain empirical studies suggest that ESG activities are not aligned with shareholder interests but are instead a result of agency problems, leading to a decline in firm value. Investors may respond negatively when firms prioritize stakeholders other than shareholders and fail to focus solely on value maximization [101]. There are also studies supporting the cost-concerned school of thought, which perceives ESG practices as cost-generating elements rather than corporate advantages in business operations [102].

Moreover, certain research suggests that the relationship between ESG and corporate economic outcomes is intricate and unclear. For instance, de la Fuente et al. [103] discovered that ESG practices can simultaneously enhance trust and mitigate risks, resulting in an inverted U-shaped correlation between ESG performance and the value of growth options. Xie et al. [86] have demonstrated a nonlinear relationship between the degree of ESG information transparency and corporate efficiency effects. Additionally, evidence suggests that each ESG indicator has different impacts on various financial performance measures [86,104]. This variability in impacts may explain why previous studies have reported positive, negative, non-linear, or no effects of ESG on financial performance.

Economic outcomes encompass financial performance, market value, and other variables. Financial performance is quantified through different indicators, including return on equity (ROE) [19,101], return on assets (ROA) [19,86,97,98,104–106], return on capital employee (ROCE) [104], growth options ratio (GOR) [103], profit margin [97], free cash flow [106], and cash holdings [107]. Market value is assessed using measures such as the price earnings ratio (PE) [104], market-to-book-value ratio (MB) [104], Tobin's q [75,76,86,97,101,103], stock price based on Ohlson model [102,108], and cumulative abnormal return (CAR) [109–111]. Other variables include corporate efficiency, eco-efficiency, labour investment efficiency [99], and green innovation [100].

Numerous existing studies have scrutinized the influence of corporate ESG practices on firm financial performance, primarily concentrating on the institutional differences hypothesis (IDH) [112]. This hypothesis explores the impact of different countries' institutional factors on the correlation between ESG practices and firm financial performance and value [98,101,104–106]. For instance, DasGupta and Roy [101] explored how institutional factors like legal origin, investor protection rights, corruption, and national and cultural levels moderate the connection between a firm's ESG performance and its financial performance on a global scale. Other relevant studies have explored how exogenous factors such as global financial crises [104], financial slack [105], geographic international diversification [105], emerging countries versus developed countries [106], and national culture [98,101] moderate this relationship. Moreover, we have also identified how certain endogenous variables, such as growth option (GO) [103], the quality of the ESG report [102], and institutional ownership [109], exert a negative moderation of the correlation between a firm's ESG activities and its value and financial performance.

### *5.2. Cluster 2: ESG Reporting and Non-financial Disclosure*

Cluster 2, comprising 25 articles, encapsulates research that we have categorized as "ESG Reporting and Non-financial Disclosure". In this cluster, a key question is what the main drivers of firms' participation in ESG reporting or non-financial disclosure are. Previous research has explored the factors influencing a firm's participation in ESG disclosure or non-financial disclosure, offering evidence at multiple levels, including corporate management characteristics, firm-level characteristics, and market characteristics.

First, previous research investigated how the characteristics of corporate upper management influence a firm's involvement in ESG disclosure. For example, Hsueh [113] found that having environmental policy supporters in key decision-making positions within a firm increases the likelihood and intensity of voluntary carbon disclosure among Global 500 companies. However, such positive relationships were not found in European Union-based global businesses. This is because European ESG initiatives mainly rely on programs implemented by external industry associations or companies, which diminishes the influence of executive officers in promoting voluntary ESG disclosure [113]. In their study, Kind et al. [114] found that narcissism is negatively associated with reporting on governance and environmental factors. However, they found no significant relationship between social reporting and CEO narcissism.

Second, several studies have indicated that firm-level factors associated with social requirements and corporate legitimacy influence a company's ESG disclosure practices. The legitimacy theory posits that companies must employ ESG disclosure to showcase their social consciousness and adopt acceptable conduct aligned with stakeholder expectations for their sustainability [67]. Various factors associated with public or social visibility, including leverage, firm size, analysts' coverage, and cross-listing have been examined to explore their positive association with a company's ESG disclosure practices [67]. However, there is no evidence to suggest that the age of a firm determines its environmental disclosure activities [115]. In contrast with the above argument of the legitimacy theory, numerous studies have demonstrated that firms possessing resources, innovations, and capabilities are better positioned to achieve cost advantages and sustainability impact through the implementation of ESG disclosure practices [69,113,115,116]. For instance, Drempetic et al. [69] discovered that companies of a larger size more frequently utilize reporting tools and have more extensive resources to present ESG information in their sustainability reports. Bellamy et al. [116] presented evidence indicating that the adoption of administrative environmental innovations (AEIs) encourages organizational members to develop positive beliefs about the value of environmental information and facilitates its integration into decision-making processes, leading to increased environmental disclosure. Similarly, Hsueh [113] revealed that complementary assets and explicit CSR practices were identified as two factors influencing the engagement in voluntary carbon disclosure. Firms that are already involved in explicit CSR activities and communicate them to their stakeholders can reduce the incremental cost of voluntary disclosure and achieve higher levels of environmental disclosure [113]. This, in turn, assists firms in safeguarding their brand reputation and expanding into new markets. The presence of complementary assets (i.e., green innovation), enables firms to disclose their CSR at a higher level while incurring lower marginal transaction costs [113]. Furthermore, Aluchna et al. [117] examined how ownership characteristics impact a firm's social disclosure. Consistent with the stakeholder salience and prospect theories, institutional investors do not consider local customers, employees, and communities as significant stakeholders, thus reducing the likelihood of their encouraging portfolio companies to engage in social disclosure [117].

Third, several studies have explored the correlation between a company's ESG disclosure practices and the characteristics of the country in which it operates. These characteristics typically pertain to the country's geographic location or the industry in which the company operates. Baldini et al. [67] argue that the ESG disclosure practices of companies are significantly influenced by country-level characteristics such as the political system, cultural system, and labour system, which aligns with institutional theory. Similarly, the mandatory regulations on ESG disclosure by firms are also associated with firms' ESG disclosure practices. Lokuwaduge and Heenetigala [118] presented evidence of a substantial disparity between the ESG reporting practices and the underlying motivations for ESG reporting. The results indicate that companies are inclined to report ESG indicators affected by existing regulatory requirements, demonstrating the positive influence of regulatory stakeholders on firms' implementation of ESG reporting practices [118]. Moreover, the study of Aureli et al. [119] expanded our understanding of how companies respond to the pressures arising from external regulations. The study asserted that regulatory pressures interact with normative and mimetic pressures (existing organizational values and practices), resulting in the development of internal processes aimed at enhancing relationships with external key resources beyond mere compliance with legal requirements [119].

### *5.3. Cluster 3: ESG Performance and Corporate Sustainability*

Cluster 3 encompasses a collection of 23 articles that collectively represent the research trend labelled as "ESG Performance and Corporate Sustainability." Given the growing emphasis on reducing corporate environmental pollution and practicing CSR, measuring a firm's sustainability performance holds significant implications for its profitability and its ability to attain competitive advantages in the future [120,121]. Stakeholders are progressively acknowledging the significance of incorporating ESG factors in to the assessment of a firm's performance [97–100]. Within this cluster, researchers delve into the diverse factors that influence corporate sustainability performance. Moreover, the ESG ratings provided by specialized rating agencies significantly influence the decision-making processes of managers and investors when they make collaboration and investment decisions [120,122,123]. Hence, it is crucial to evaluate the accuracy and effectiveness of the existing ESG metrics methodology in assessing a company's sustainability performance.

In regard to the effects on corporate sustainability performance, prior research explores the influence of institutional factors and firm management factors on ESG performance. On the one hand, ESG encompasses environmental issues that have clear economic externalities, making it challenging to address the resulting market deterioration solely through market forces and corporate consciousness [120]. Enacting institutional measures, such as policies, regulations, and laws, is necessary to rectify corporate business conduct and provide incentives for companies to mitigate negative externalities [121]. For example, Wang et al. [121] discovered that central environmental protection inspection (CEPI) can notably enhance firm ESG performance in China. Meng et al. [124] also demonstrated that corruption, which results in local governments or corporations not fulfilling their due roles, contributes to increased air pollution and hinders the achievement of ESG performance. On the other hand, a firm's internal management strategy and non-financial disclosure strategy play a crucial role in improving its sustainability performance. Numerous studies have illuminated the link between a company's ESG disclosure and corporate sustainability. For instance, Santamaria et al. [125] revealed that integrated reporting (IR) is crucial to facilitate high ESG scores. Lai et al. [95] have also provided evidence that firms which adopt IR demonstrate significantly higher ESG disclosure rating scores compared with those that do not.

While these studies highlight the positive impact of ESG reporting quality on ESG performance, it is important to acknowledge that this relationship may not always hold true. Arvidsson and Dumay [126] demonstrated a steady improvement in the quality of ESG disclosure in Sweden, while ESG performance reached a plateau around 2015. These authors propose that the focus should shift towards enhancing ESG practices rather than solely improving the quality or quantity of ESG disclose report. In addition to corporate ESG disclosure strategies, some researchers also examine the corporate management's impact on ESG performance. Investors recognize a company's value when it exhibits a strong commitment to sustainability by integrating sustainability aspects into its internal management system (IMS) [122,127]. This sets them apart from companies that engage in greenwashing practices [122]. Gebhardt et al. [122] highlighted this by illustrating that incorporating ESG key performance indicators (KPIs) into the IMS results in enhanced ESG performance. Similarly, Kong et al. [128] discovered that the provision of non-executive employee stock ownership plans (ESOPs) to non-executive employees fosters a higher level of corporate ecological engagement. This leads to improved quality of environmental information disclosure, increased spending on environmental protection, and higher ESG ratings. Furthermore, ESG scores have become crucial in facilitating mergers and acquisitions (M&A) transactions [123]. As a result, research has shown a favourable influence on the part of M&A transactions on firms' ESG scores. However, it is noteworthy that this improvement in the ESG score is not immediate [123].

The global investor community is witnessing a significant surge in interest towards green and sustainable finance [129]. In this context, ESG data assumes a pivotal role in fostering effective communication channels between companies, financial analysts, and investors [120,129]. However, it is worth noting that certain ESG metrics provided by social rating institutions may not accurately represent the reality faced by many companies. Therefore, it becomes imperative to subject these indicators to rigorous testing and maintain an ongoing dialogue between companies, financial analysts, and investors. Previous research has been dedicated to exploring the efficacy of ESG metrics in driving corporate sustainability performance. For example, Rajesh and Rajendran [130] conducted a study that focused on the contribution of Thomson Reuters ESG Scores to the sustainability performance of firms. Their findings indicate that the ESG performance measures provided by Thomson Reuters serve as true indicators of ESG performance. Similarly, Atkins et al. [129] explored the effectiveness of sustainability measurement and identify opportunities for improving sustainability disclosure practices. They critically evaluate the validity of the current metrics system and identify various ways in which companies react to the effectiveness of ESG measures during times of crisis. Their study highlights the need for a comprehensive re-evaluation and reformulation of ESG metrics to ensure their continued relevance and effectiveness.

### *5.4. Cluster 4: ESG Attributes and Investment Market*

Cluster 4 comprises 19 articles that focus on research labelled as "ESG Attributes and Investment Market". This cluster synthesizes and analyses multiple studies that enhance our understanding of the relationship between firms' ESG attributes and the investment market, encompassing risk management, cost of capital, and investor value creation.

ESG has been suggested to impact various types of risk, such as reputational risk [131], default risk [132], asset risk [133], idiosyncratic risk [134], and overall risk [133], through various channels. For example, Fafaliou et al. [131] discovered that ESG reputational risk negatively affects firms' access to external financing and growth opportunities, thereby mitigating market longevity. Moreover, some researchers have argued that greater transparency through ESG disclosure can lead to benefits, including reduced risks and costs of capital [132,135,136]. Banks that have fewer ESG controversies demonstrate their adherence to the implementation of ESG strategies to mitigate risk [133]. ESG disclosure and rating both decrease the idiosyncratic risk in the first year of trading after an initial public offering (IPO) [134]. Atif and Ali [132] discovered that firms exhibiting greater ESG disclosure experience reduced default risk. Tarulli et al. [135] demonstrated a negative association between the cost of capital and ESG disclosure, proposing that increased disclosure levels can effectively alleviate the financial burden on enterprises. Yu et al. [136] discovered that enhanced environmental disclosure diminishes a firm's ex ante cost of equity by mitigating investors' information asymmetry and reshaping their perception of the company's risk. Additionally, non-financial factors impact how investors perceive a firm's level of risk. Situating the company in a country with a higher human development index score and exceptional environmental performance reduce investors' risk perception, resulting in a lower ex ante cost of equity [136]. Similarly, Gjergji et al. [137] also discovered that ESG disclosure for small and midsize enterprises (SMEs) generally result in an escalation in the firm's cost of capital, which contradicts the findings for large companies.

ESG disclosure has the potential to create investor value by providing increased access to relevant and firm-specific information, thereby reducing information asymmetry. Importantly, ESG disclosure is valuable to investors, and its financial significance contributes to the enhanced informativeness of stock prices [138,139]. However, the impact of ESG disclosure on the informativeness of stock prices varies across different ESG components, with the social component exhibiting greater sensitivity [138]. Furthermore, ESG disclosure is found to be associated with earnings quality due to its importance to investors and the credibility of corporate reporting [140]. Investors consider earnings to be significant, and the information conveyed through earnings announcements (earnings quality) can impact stock prices as well [141]. Rezaee and Tuo [140] have demonstrated a positive association between the volume of sustainability disclosures and inherent earnings quality, while also revealing a negative correlation with discretionary earnings quality. However, ESG disclosures do not consistently provide value for investors in certain circumstances. For example, Wahl et al. [142] proposed no significant influence of the voluntary IR of ESG on the accuracy of analyst earnings forecasts. This indicates a lack of empirical support for the adoption of IR's claims regarding enhanced information quality for investors. One possible explanation for this lack of impact could be that companies adopting IR already have a relatively high degree of transparency, making the additional effects of IR disclosure unnecessary [142].

### *5.5. Cluster 5: ESG Practices and Board Diversity*

Cluster 5 comprises 18 articles that encompass research categorized as "ESG Practices and Board Diversity". ESG disclosure and board diversity have garnered considerable attention in the realm of corporate governance. This cluster primarily investigates the effects of ESG disclosure and board diversity on firm value, sustainability behaviour, ESG reporting, ESG decoupling, employee board representation, workplace sexual harassment, and social trust.

Several studies have investigated the influence of gender diversity on company boards and its correlation with ESG performance. For example, Qureshi et al. [25] identified a substantial positive relationship between the inclusion of women on boards and ESG performance, suggesting that companies with greater female representation exhibit stronger ESG performance. More specifically, certain studies indicate that reaching a key threshold of at least three females on the board improves ESG disclosure levels and positively influences all dimensions of ESG performance [143,144]. Moreover, heightened representation of women on boards serves as a crucial conduit for enhancing social trust, which, in turn, elevates corporate ESG ratings [145]. Research has identified a positive correlation between gender diversity in audit committees (ACs) and the quality of voluntary ESG reporting [146]. Firms that have a board of directors with greater gender diversity experience fewer occurrences of ESG decoupling, leading to reduced disparities between a firm's ESG performance and its disclosure [147]. Moreover, the research has uncovered variations in these associations. For example, De Masi et al. [143] observed that reaching a critical threshold of female members on the firm board contributes most in improving the governance score rather than the social and environmental scores. Additionally, evidence suggests a positive correlation between the number of women in executive director roles, rather than non-executive director roles, and ESG performance [144]. Furthermore, Eliwa et al. [147] further discovered that the influence of religiosity on the relationship between board gender diversity and ESG decoupling is more significant for firms engaged in greenwashing and operating in controversial industries.

Besides gender diversity, it is crucial to acknowledge that different forms of employee board representation can yield varying impacts on ESG performance. According to Nekhili et al. [26], labour board representatives and employee shareholder board representatives exert distinct influences on both corporate ESG and financial performance. Labour board representatives prioritize the enhancing of social performance while diminishing environmental and corporate governance performance. Additionally, the study emphasized that the manner in which employees are represented on the board influences the corporate ESG–financial performance relationship in unique ways.

## 6. Conclusions, Future Research, and Limitations

### *6.1. Conclusions*

In the preceding sections, we have conducted an exhaustive and systematic review of the literature by analysing 111 high-calibre environmental, social, and governance (ESG)-related articles published from 2009 to 2022, with the aim of identifying the theoretical foundations and research trends of ESG studies. This research augments existing literature reviews in several ways. Firstly, through the section of co-citation analysis, we have elucidated that existing ESG research is underpinned by four theoretical literature clusters: (A) Sustainability of competitive advantage; (B) Compliance of social construction; (C) Alignment of governance accountability; (D) Allocation of sustainable capital. Secondly, we employed bibliographic coupling as a method to evaluate the current research tendencies within ESG literature. This bibliographic coupling analysis uncovered five clusters of theme-related research trends: (1) ESG activities and economic outcomes; (2) ESG reporting and non-financial disclosure; (3) ESG performance and corporate sustainability; (4) ESG attributes and investment market; (5) ESG practices and board diversity. This approach not only validates the theoretical framework but also provides a panoramic view of the prevailing trends, thereby enriching the overall understanding of the ESG field.

### *6.2. Future Research*

While this topic has been extensively researched, several areas warrant further exploration given the dynamic nature of sustainable business management and stakeholder expectations. Building upon the bibliographic coupling of literature clusters presented earlier, a number of priorities for future academic enquiry into ESG emerge (See Table 2).

**Table 2.** Suggested questions for future research on ESG.

| Cluster Topic | Suggested Questions for Future Research |
|---|---|
| ESG Activities and Economic Outcomes | What are the underlying mechanisms through which ESG practices create value for firms? How do these mechanisms vary across different industries and contexts?<br>What are the determinants of the negative or positive effects of ESG activities on firm value and performance? How do factors such as stakeholder orientation, agency problems, and cost concerns influence this relationship?<br>How does the relationship between ESG practices and economic outcomes vary across different ESG indicators? What are the specific impacts of each ESG indicator on financial performance measures?<br>How do institutional factors, such as legal origin, investor protection rights, national culture, and corruption levels, moderate the relationship between ESG performance and financial performance? |
| ESG Reporting and Non-financial Disclosure | What are the motivations of firms in complying with mandatory ESG disclosure regulations? How do regulatory stakeholders and external pressures interact with firms' internal values and practices?<br>How do regulative pressures, normative influences, and mimetic behaviours interact in the context of mandatory non-financial disclosure obligations? How do firms develop internal processes to improve relationships with external key resources beyond legal requirements? |
| ESG Performance and Corporate Sustainability | To what extent do ESG metrics provided by social rating institutions accurately capture the sustainability performance of companies? How well do these metrics align with the actual sustainability practices and impacts of firms?<br>How can sustainability measurement and disclosure practices be improved to ensure their continued relevance and effectiveness? What are the key areas for reformulating ESG metrics to enhance their validity and usefulness?<br>How can one prevent "greenwashing" through an effective ESG evaluation system? |
| ESG Attributes and Investment Market | Identify the contextual factors or conditions under which the relationship between ESG attributes and investor value may be weaker or non-existent. Are there specific industries, regions, or market conditions where ESG attributes have limited impact on investor value?<br>Examine the mechanisms through which ESG attributes translate into investor value. How do ESG attributes affect investor perceptions, decision-making, and stock prices? Are there mediating factors that explain the relationship between ESG attributes and investor value? |
| ESG Practices and Board Diversity | How do different leadership characteristics interact with each other in shaping corporate ESG performance? Are there certain combinations of characteristics that have a more pronounced effect?<br>Are there industry-specific or context-specific variations in the association between leadership characteristics and firm ESG engagement? How do these variations impact our understanding of the dynamics between leaders and ESG profiles? |

#### 6.2.1. Understanding the Complex Relationship between ESG Practices and Economic Outcomes

Future research should aim to further explore the relationship between ESG practices and economic outcomes while considering the complexities and variations identified in the literature review. Firstly, it is essential to investigate the precise mechanisms through which ESG activities generate value across diverse stakeholder groups and industries. This can provide a deeper understanding of how stakeholder theory and information asymmetry theory apply in organizational practice. Secondly, examining the degree of alignment between ESG commitments and shareholder priorities, as well as the potential impacts of prioritizing alternative stakeholders, may offer insightful perspective. This includes exploring agency issues that shape the linkage between sustainability and corporate prosperity. Thirdly, it is crucial to explore relationships between different ESG performance metrics and economic variables indicators. Finally, deepening our appreciation for how institutional factors regarding legal environments, investor protections, cultures and corruption influence said relationships would be prudent. Additional contingent aspects like international diversification and financial resilience warrants investigate as well.

#### 6.2.2. Uncovering the Motivations for ESG Reporting and Non-Financial Disclosures

Future research in the area of ESG reporting and non-financial disclosure should be focused on the influence of regulatory pressures and stakeholder demands on firms' compliance with ESG reporting regulations and the underlying motivations driving their actions. Moreover, exploring the interplay between regulative pressures, normative influences, and mimetic tendencies would provide valuable insights into how organizations develop the internal capacity to nurture meaningful relationships with pivotal external partners beyond mere conformity to legal obligations.

#### 6.2.3. Evaluating ESG Metrics and Enhancing Sustainability Measurement

Research endeavours going forward would greatly benefit from exploring avenues to strengthen sustainability disclosure protocols and refine ESG performance assessment frameworks. Critical examination of the efficacy of prevailing ESG metrics regimes, with special consideration for the dynamic needs of corporations, analysts and investors alike, is recommended. Moreover, investigating the concurrence between ESG ratings assignments and the genuine sustainability policies implemented and the impacts of them as demonstrated by companies would lend valuable perspective.

#### 6.2.4. Unravelling the Link between ESG Attributes and Investor Value

With regard to risk and cost of capital, with a few exceptions, the empirical evidence generally supports the view that higher ESG attributes lower both. In contrast, some research has shown that ESG attributes do not create value for investors in some contexts. Future research should focus on deepening our understanding of the relationship between firms' ESG attributes and the investor value. It is crucial to identify the nuances and contextual factors that influence this relationship.

#### 6.2.5. The Dynamics between Leadership Characteristics and ESG

The relationship between leadership characteristics, other than gender or political orientation, and corporate ESG performance, is notably intricate in terms of its direction and significance. Exploring a wider range of demographic factors related to corporate leaders, beyond those currently examined in the literature, holds substantial potential for enhancing our comprehension of how managerial practices influence firms' ESG profiles. Additionally, it can shed light on the dynamics of how leaders are drawn to specific firms based on their ESG attributes. Consequently, a more comprehensive examination of these factors can contribute significantly to our knowledge in this field.

### *6.3. Limitations*

This literature review ventures into the realm of environmental, social, and governance (ESG) within the management field by leveraging a bibliometric review methodology, thereby reducing the bias commonly found in traditional reviews [15]. While bibliometric methods offer a robust means to surmount bias, they are not panaceas that can supplant fine-grained content analysis [37]. In this context, to thoroughly analyse the identification of theoretical foundations and principal research trajectories within the ESG sphere, we used manual screening to narrow the sample to 111 journal articles. However, this approach may lead to the omission of important theoretical concepts that were not uncovered by our sample.

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