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Environmental, Social, and Governance, Investment, and Firm Value: Insights from a Bibliometric and Systematic Review

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Abstract

Purpose: This study synthesizes the literature on the relationship between Environmental, Social, and Governance (ESG) factors, investment outcomes, and firm value. Despite the growth of ESG research, the findings remain fragmented, particularly regarding which ESG dimensions are materially relevant for valuation and investment decisions.

Research Methodology: A systematic literature review combined with a bibliometric analysis was conducted using the Scopus database. A total of 67 peer-reviewed journal articles published between 2017 and 2025 were selected based on predefined inclusion criteria, including relevance, accessibility, and journal quality (Q1–Q2 journals). Bibliometric techniques—keyword co-occurrence, author co-citation, and bibliographic coupling—were performed using VOSviewer to identify the key themes and intellectual foundations.

Results: The results show a sharp rise in ESG-related research after 2021, with a 35% increase in the number of publications. Themes such as ESG performance, corporate governance, and firm valuation metrics, such as Tobin's Q, are central. However, studies relying on aggregate ESG scores dominate, and research on specific ESG indicators and dynamic ESG risks, such as controversies, is limited.

Conclusions: The findings reveal substantial heterogeneity across institutional and market contexts, explaining the inconsistent empirical evidence. ESG research has grown significantly, but more granular and context-sensitive studies are needed to explore the varying impacts across industries and regions.

Limitations: This study was limited to Scopus-indexed, English-language, open-access Q1–Q2 journal articles and did not assess causal relationships. This may exclude relevant studies from non-English journals or other sources.

Contributions: This study provides a bibliometric synthesis of ESG investment firm value research, highlighting gaps and encouraging future studies focused on indicator-specific ESG measures and dynamic risks.

Keywords: *Bibliometric Analysis, ESG, Firm Value, Investment, SLR*

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1. Introduction

In recent decades, Environmental, Social, and Governance (ESG) factors have become essential elements in both corporate strategy and investment decision-making. Studies have shown that proper ESG disclosure can positively influence firm value (Mabhanda & Masukume, 2025). Traditional financial analysis, which primarily focuses on short-term economic performance, is gradually evolving. Investors and other stakeholders now recognize that firm value creation extends beyond immediate financial metrics and includes the long-term risks and opportunities associated with it. ESG frameworks incorporate non-financial dimensions that capture environmental risks, social responsibilities, and governance quality (Santamaria, Paolone, Cucari, & Dezi, 2021). These factors are increasingly perceived as materially relevant in determining firm value, reflecting a broader recognition of their importance across global financial markets and corporate strategies (Ioannou & Serafeim, 2019).

The incorporation of ESG considerations into corporate decision-making is driven by growing awareness of the need for firms to manage sustainability-related risks and leverage associated opportunities over time (Dako, Onalaja, Nwachukwu, Bankole, & Lateefat, 2023). This shift in perspective is reflected in empirical studies that consistently show a positive correlation between strong ESG performance and enhanced firm value. Specifically, research indicates that firms with superior ESG performance tend to experience better financial outcomes, such as increased profitability and reduced cost of caputrpital (Aydoğmuş, Gülay, & Ergun, 2022; Wu, Song, & Jin, 2025). Furthermore, companies with strong ESG practices are more resilient during periods of financial distress and systemic shocks, contributing to their long-term stability (Albuquerque, Koskinen, & Zhang, 2019; Broadstock, Chan, Cheng, & Wang, 2021). This growing body of evidence has led to an increased emphasis on ESG as a core element in investment decisions and firm valuation, with implications for both capital market strategies and corporate governance(Liu, Beck, & Gao, 2024; Wilberg, Kjellevoll, Holz, & Neumann, 2025).

However, despite substantial research on the link between ESG and firm value, the literature is heterogeneous. Several studies have documented the positive effects of ESG on financial performance; however, these effects are often inconsistent across industries and institutional contexts (Jucá, Muren, Valentinčič, & Ichev, 2024; Xiao, Hou, & Kong, 2025). Aggregate ESG scores commonly used in research can obscure the underlying performance of individual environmental, social, and governance indicators. Consequently, there is a growing need for more granular studies that disaggregate ESG into its constituent parts and analyses that consider industry-specific ESG dimensions and their materiality to firms (Postiglione, Carini, & Falini, 2024). Contextual factors, such as institutional environments, governance structures, and sectoral risks, also play a significant role in shaping the ESG–firm value relationship, adding to the complexity of this field of study. The increasing complexity of ESG research underscores the importance of systematic reviews that can map trends, gaps, and thematic clusters within the literature. While ESG studies have grown rapidly in recent years, there is still a lack of structured analysis that consolidates diverse findings. A bibliometric approach combined with a systematic literature review (SLR) can provide the necessary framework for synthesizing existing knowledge and identifying key research gaps. This study aims to address these gaps by conducting a comprehensive bibliometric and SLR analysis of the literature on ESG, investments, and firm value. Through this integrated approach, this study maps publication trends, thematic clusters, and intellectual linkages, providing a clearer understanding of the evolution of ESG research and the factors driving the increasing focus on ESG dimensions in investment analysis.

The motivation for this study is rooted in the growing importance of ESG factors in financial decision-making, which calls for a deeper understanding of how these factors influence firm values and investment outcomes. Given the increasing volume of ESG-related research, a structured review of the literature is essential to identify key themes and trends and highlight the limitations of current research. By analyzing the existing literature, this study highlights the need for more granular and context-specific studies on ESG and the necessity of integrating ESG risks and controversies into investment models. Moreover, this study aims to offer insights into the role of governance mechanisms, transparency in ESG disclosures, and sector-specific ESG risks in shaping firms' financial outcomes. In conclusion, the rapid growth of ESG research indicates its increasing relevance in corporate finance and investment.

This study aims to provide a comprehensive bibliometric and systematic review that synthesizes existing knowledge, identifies key research gaps, and offers directions for future studies. By focusing on industry-specific ESG indicators and dynamic ESG risks, this study advances the understanding of how ESG factors influence firm valuation and investment decisions. This approach contributes to the ongoing evolution of ESG research, offering valuable insights for academics, policymakers, and investors as they navigate the complexities of sustainable business practices and financial performance.

2. Literature Review and Hypothesis Development

2.1 Introduction

Environmental, Social, and Governance (ESG) factors have become critical in corporate strategy and investment decisions, capturing both financial and non-financial risks and opportunities. ESG covers environmental impact, social responsibility, and governance practices, influencing firm values and investment outcomes (Aboud & Diab, 2018). Empirical evidence shows that strong ESG performance is associated with higher profitability and lower capital costs (Aydoğmuş et al., 2022; Wu et al., 2025). Furthermore, studies have found that firms integrating ESG into their strategy demonstrate long-term performance advantages (Eccles, Ioannou, & Serafeim, 2014). The ESG–firm value relationship remains heterogeneous across industries and institutional contexts(Jucá et al., 2024; Xiao et al., 2025). Meta-analyses confirm the overall positive impact of ESG on financial outcomes (Friede, Busch, & Bassen, 2015). Material ESG issues drive firm performance when aligned with the core business strategy (Khan, Serafeim, & Yoon, 2016). Moderating factors such as board diversity, sector characteristics, and governance mechanisms significantly affect this relationship (dos Reis Cardillo & Basso, 2025; Nadifah, Dahlan, & Handoyo, 2025)

Institutional investors increasingly influence ESG adoption. Dyck, Lins, Roth, and Wagner (2019) show that institutional investors in developed markets exert pressure on firms to implement corporate social responsibility (CSR) and ESG practices. Chen et al. (2022) similarly highlights that investors incorporate CSR risks into investment decisions. Internal factors, such as related party transactions, also impact firm performance, particularly in family owned firms (Wang, Cho, & Lin, 2019). Evidence also indicates that firms with diverse boards and high ESG disclosure quality achieve stronger valuation benefits (Gull, Haq, Ghafoor, Ahsan, & Bayraktar, 2025; Yeye & Egbunike, 2023).

2.2 Hypothesis Development

Based on the literature review, the following hypotheses were developed to test the relationship between ESG performance and firm value, as well as the role of ESG disclosure in shaping investment outcomes.

(H_1): Higher ESG performance (measured through environmental, social, and governance dimensions) is positively related to increased firm value in developed markets.

This hypothesis is based on the concept that companies with better ESG performance have better reputations and are more attractive to investors. This aligns with Aydoğmuş et al. 's (2022) researchAydoğmuş et al. (2022) which found that superior ESG performance significantly boosts profitability and market value. Furthermore, firms with strong ESG practices tend to be more resilient in the stock markets (Albuquerque et al., 2019).

(H_2): Higher-quality ESG disclosures enhance the impact of ESG performance on firm value.

Chen et al. (2022) show that the quality of ESG disclosure plays a critical role in strengthening the impact of ESG performance on firm value. Transparent and accurate disclosure helps investors evaluate a company's sustainability, thereby increasing investment decisions and market valuation. Therefore, we expect that companies with better ESG disclosures will experience an increase in their firm value.

(H_3): ESG performance negatively impacts the cost of capital, particularly in the energy and utility sectors.

ESG performance lowers the cost of capital, especially in environmentally and socially sensitive sectors, such as energy and utilities (La Rosa & Bernini, 2022). Evidence shows that voluntary ESG disclosure reduces equity costs (El Ghoul, Guedhami, Kwok, & Mishra, 2011), while higher ESG

ratings enhance investor confidence and lower perceived risk, leading to lower financing costs (Liu et al., 2024).

(H_4) ESG performance moderates the relationship between corporate tax avoidance and firm value.

ESG performance can moderate the effect of tax avoidance on firm value, with more socially and environmentally responsible companies likely to have higher values, even if they engage in tax avoidance. Kriswanti and Indriani (2025) demonstrated that ESG performance influences how the market perceives corporate tax policies and their impact on market value.

2.3 Conceptual Synthesis and Model Development

Based on the existing literature, the following conceptual model is proposed to link ESG performance with investment outcomes and firm value: This model identifies the direct and indirect effects of ESG performance on dependent variables, such as firm value and cost of capital, with moderating factors, such as ESG disclosure quality and industry-specific characteristics. Conceptual Model:

1. Independent Variables: ESG performance (environmental, social, governance dimensions)
2. Moderating Variables: ESG disclosure quality, firm characteristics, industry sector
3. Dependent Variables: Firm value (Tobin's Q, stock price performance), cost of capital

The model suggests that higher ESG performance increases firm value and reduces capital costs, with ESG disclosure quality and industry factors serving as moderating variables that strengthen or weaken this effect.

2.4 Competing Theories: Stakeholder Theory, Shareholder Value Theory, and Risk Mitigation Theory

Three main theories are relevant to this research: stakeholder theory, shareholder value theory, and risk mitigation theory. Each theory offers a different perspective on ESG's role of ESG in creating firm value.

1. Stakeholder Theory: This theory suggests that firms have responsibilities not only to their shareholders but also to other stakeholders, such as employees, customers, and society at large. Strong ESG performance is considered to fulfill these responsibilities, ultimately enhancing long-term firm stability and value.
2. Shareholder Value Theory: In contrast, the shareholder value theory argues that the primary goal of firms is to maximize shareholder wealth. From this perspective, ESG activities are viewed primarily as a means of attracting investors and reducing risk, thereby increasing firm value and profitability.
3. Risk Mitigation Theory: This theory posits that ESG factors help firms reduce various risks that could negatively impact their businesses, such as reputational, environmental, and regulatory risks. Therefore, effectively managing ESG risks can enhance firm value by decreasing the likelihood of costly adverse events and improving market perceptions.

2.5 Conclusion

This section explains the development of hypotheses based on relevant theories and previous research, as well as the proposed conceptual model linking ESG to investment outcomes and firm value. By testing these hypotheses, this study aims to provide a deeper understanding of how ESG performance influences firm value, cost of capital, and investment decisions, and how factors such as ESG disclosure quality moderate this relationship.

3. Methodology

This study adopts a systematic literature review (SLR) combined with bibliometric analysis to examine the academic literature addressing the relationship between Environmental, Social, and Governance (ESG), investment, and firm value. The use of both SLR and bibliometric techniques ensures transparency, rigor, and replicability in synthesizing the literature and identifying emerging trends and gaps in the ESG research.

3.1. Literature Search Strategy

A literature search was conducted using the Scopus database, which is widely recognized for its comprehensive coverage and standardized bibliometric information across disciplines, including finance, business, and sustainability. Scopus was chosen because of its broad journal coverage, reliable metadata, and compatibility with bibliometric software. The search was performed on January 19, 2026, covering publications from the earliest available records in Scopus until the search date. The following search string was applied to the TITLE–ABS–KEY fields: ("ESG" AND "investment" AND "firm value"). This query was specifically designed to capture studies that directly addressed ESG in the context of investment-related outcomes and firm valuation while avoiding excessive dilution from tangential sustainability research.

3.2. Inclusion and Exclusion Criteria

After the initial search, a multistage screening process was applied to refine the sample. The inclusion and exclusion criteria were as follows:

1. Inclusion Criteria:
    a. Studies published in peer-reviewed journals indexed in Scopus.
    b. Articles were written in English to ensure consistency and accessibility of interpretation.
    c. Articles published between 2017 and 2025 were selected to capture the most recent and relevant research.
    d. Only open-access articles were retained to enhance transparency and replicability. The decision to limit the sample to open-access publications was made to ensure the availability of data to all researchers, although it may have excluded some potentially relevant studies from subscription-based journals.
2. Exclusion Criteria:
    a. Studies that do not explicitly discuss ESG, firm value or investment outcomes.
    b. Non-peer-reviewed publications, such as working papers, conference proceedings, and books.
    c. Articles that do not address the key relationship between ESG performance and firm value.

3.3. Screening Process

The screening process was conducted in multiple stages.

1. Initial Search: The search yielded 418 journal articles. First, we excluded non-English publications, narrowing the search to 412 articles.
2. Open-Access Selection: We restricted the sample to open-access articles, which reduced the number of records to 162.
3. Final Publication Status: Only final published articles were retained, excluding drafts and preprints, which resulted in 151 records.
4. Subject-Area Screening: We applied subject-area filtering to retain articles from relevant disciplines, including Social Sciences, Economics, Finance, Business, Management, Environmental Science, and Decision Sciences, yielding 144 articles.
5. Journal Reputation Screening: The final filtering step included journal quality assessment. Only articles published in Q1 or Q2 journals (according to the Scimago Journal Rank (SJR)) were retained, resulting in a final sample of 67 peer-reviewed journal articles.

3.4. Data Analysis Techniques

Once the sample was finalized, bibliometric analysis was conducted using VOSviewer (version 1.6.x), a widely used software for constructing and visualizing bibliometric networks. This tool enabled the exploration of publication trends, thematic clusters, and intellectual foundations in the ESG literature.

1. Descriptive Bibliometric Analysis: We first examined the publication trends, journal distribution, citation characteristics, and authorship patterns. This analysis included the following metrics.
    a. Publication years, number of journals, and number of articles per journal.
    b. Citation counts, average references per article, and co-authorship structures.
2. Network-Based Bibliometric Techniques
    a. Co-occurrence Analysis: We analyzed the co-occurrence of author keywords to identify dominant research themes and clusters within the ESG literature. A minimum occurrence threshold was applied to filter out low-frequency keywords and enhance the interpretability.

b. Co-citation Analysis: This technique was used to identify influential authors and foundational studies by examining patterns of joint citations across articles.
c. Bibliographic Coupling Analysis: This was performed at the country, journal, and author levels to explore the structural relationships and similarities in reference usage. This analysis helps us understand the international and institutional structures of ESG research.

All bibliometric maps were generated using the association strength normalization method and visualized through network, overlay, and density visualizations provided by VOSviewer. To complement the bibliometric analysis, a qualitative synthesis of the reviewed articles was conducted to contextualize the findings and provide a deeper understanding of the identified clusters.

3.5. Prisma Diagram

A PRISMA flow diagram was created to ensure transparency and rigor in the screening process. This diagram outlines the inclusion and exclusion processes in a clear, step-by-step manner and provides an overview of the article selection process.

4. Results and Discussions

4.1 Overview of Bibliometric Analysis Results

This section presents the fundamental characteristics of the articles included in this systematic literature review. The final dataset consisted of 67 peer-reviewed journal articles published between 2017 and 2025, originating from 39 international journals. The average number of articles per journal is 1.72, indicating that research on ESG, investment, and firm value is widely dispersed across journals rather than being concentrated in a limited number of outlets. In terms of citation structure, the reviewed articles collectively cited 671 references, with an average of 10.01 references per article. This suggests that studies in this field tend to rely on a focused but well-established body of literature, primarily drawn from finance, sustainability, and corporate governance research. Keyword analysis revealed 235 distinct author keywords, with an average of 3.51 keywords per article, reflecting thematic diversity within the ESG literature. Regarding authorship patterns, the 67 articles involved 203 unique authors, with an average of 3.03 authors per article. Only three articles were authored by a single researcher, while the majority involved multi-author collaborations, underscoring the collaborative and interdisciplinary nature of ESG research.

Criteria	Description	Result
General Information	Period	2017–2025
	Number of Journals	39
	Number of Articles	67
	Average Number of Articles per Journal	1.72
Citation	Total References	671
	Average References per Article	10.01
Co-occurrence	Total Keywords	235
	Average Keywords per Article	3.51
Co-authorship	Total Authors	203
	Average Number of Authors per Article	3.03
	Single-authored Articles	3
	Multi-authored Articles	64

Figure 1. Fundamental characteristics of the reviewed articles

4.1.1 Distribution of Articles by Year of Publication

The bibliometric analysis highlights the increasing prominence of ESG in recent research, particularly from 2021. The results indicate that ESG is a central theme in the literature on investment and firm value, as evidenced by the concentration of keywords such as “ESG performance,” “corporate governance,” and “firm value” firm value. The prominence of these keywords in the network suggests that ESG is increasingly seen as materially relevant to investment decisions and corporate strategies.

However, despite the centrality of ESG in the literature, the overreliance on aggregate ESG scores in many studies is a notable limitation. These scores often combine environmental, social, and governance factors, potentially masking the distinct impact of each dimension. This underscores the need for more granular research examining the individual contributions of environmental, social, and governance factors.

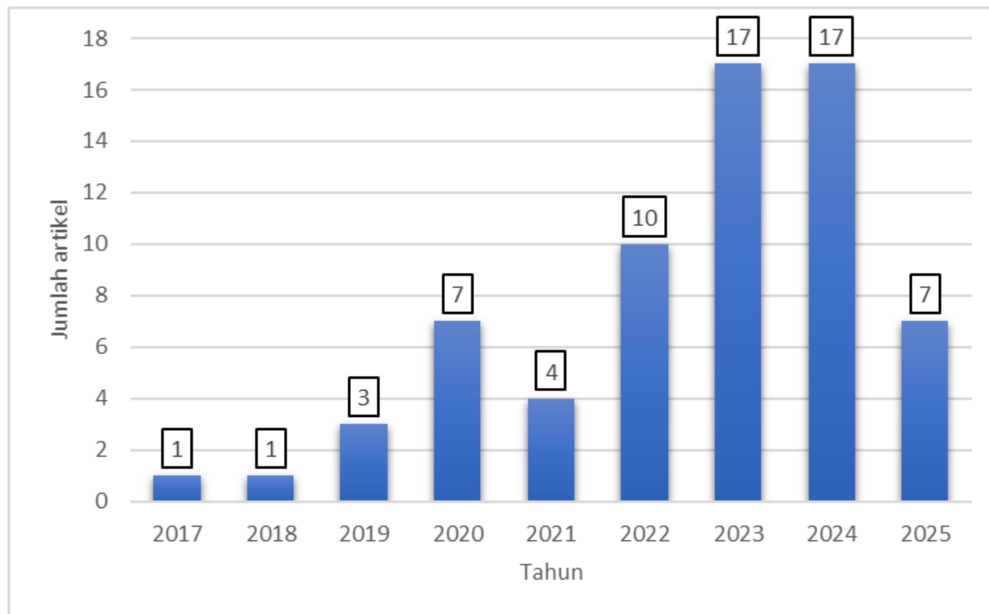

Figure 2. Number of articles by year of publication

This figure shows a significant increase in ESG-related publications post-2021, reflecting the increasing relevance of ESG in academic research.

4.2 Co-Occurrence Analysis of Author Keywords

The co-occurrence analysis of author keywords revealed three primary thematic clusters in ESG research.

1. ESG and Value Creation:
   This cluster emphasizes the positive relationship between ESG performance and firm value. Keywords
2. ESG and Cost of Capital
   Another prominent theme connects ESG performance with the cost of capital. Keywords such as "cost of capital," "debt," and "equity" show that many studies investigate how strong ESG practices help firms reduce financing costs. This is consistent with risk mitigation theory, which posits that firms with strong ESG performance are perceived as less risky by investors, thus lowering their capital costs (El Ghoul et al., 2011).
   Interpretation: The focus on the cost of capital highlights the growing recognition that ESG factors play a critical role in how firms are perceived by capital markets. The reduction in financing costs due to good ESG practices demonstrates the economic relevance of ESG factors in making investment decisions.
3. ESG and Risk Management
   The third thematic cluster focuses on ESG as a risk management tool. Keywords such as “risk management,” “environmental risks,” and “regulatory risks” suggest that ESG practices are increasingly seen as mitigating various risks, such as reputational and regulatory risks, that can affect firm performance. This is particularly evident in industries such as energy and utilities, where ESG risks are material.

Interpretation: ESG practices are essential risk management tools for firms operating in high-risk sectors. By integrating ESG into corporate strategies, firms can mitigate environmental and social risks, thereby enhancing their resilience to external shocks and improving their long-term stability.

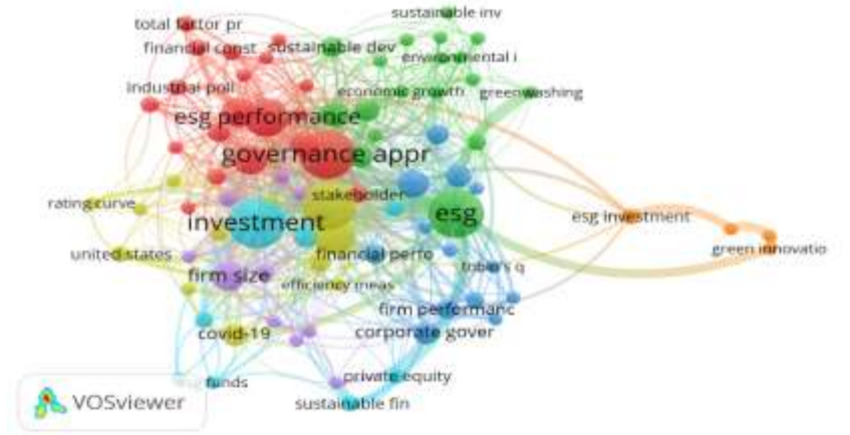

Figure 3. Co-occurrence network of the author keywords

This figure illustrates the thematic clusters identified through keyword co-occurrence, highlighting the central role of ESG in value creation, capital cost, and risk management.

4.3 Co-Citation Analysis of Authors

Bibliometric analysis is closely related to stakeholder and risk mitigation theories. The central role of terms such as “stakeholder,” “governance,” and “sustainability” in the co-occurrence network reflects the growing alignment of ESG research with stakeholder theory. This theory argues that firms must balance the interests of shareholders with those of other stakeholders (e.g., employees, customers, and the broader community). ESG practices are seen as fulfilling this broader responsibility, which in turn creates long-term value for firms. Additionally, the strong relationship between ESG and the cost of capital supports shareholder value theory, which emphasizes maximizing shareholder wealth. Companies with better ESG performance are perceived as less risky, leading to lower capital costs and ultimately enhancing shareholder value. Although these theories are well supported in the literature, some contradictions remain. For instance, studies in sectors such as oil and gas sometimes show weaker or even negative correlations between ESG performance and financial outcomes. The negative effects of ESG controversies on firm performance are well documented. Jucá et al. (2024) provide evidence that firms with higher exposure to ESG-related controversies, particularly in certain industries, experience significant financial setbacks. This suggests that ESG’s impact of ESG on firm value may not be uniform across all industries or institutional contexts.

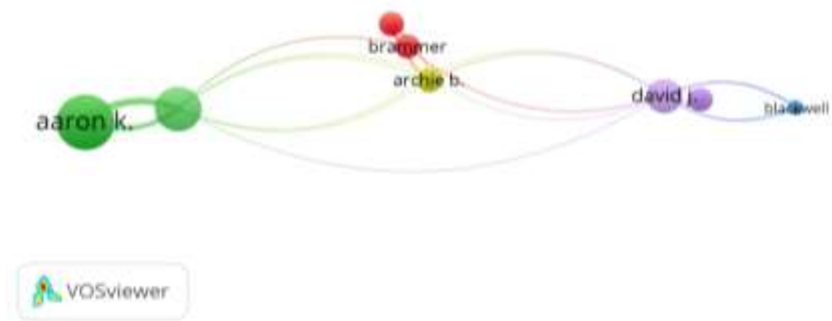

Figure 4. Author co-citation network

This figure shows the co-citation analysis, which identifies influential authors and foundational studies in the ESG literature, providing insights into the theoretical underpinnings of the research.

4.4 Anomalies and Contradictions in the ESG Literature

A key anomaly in the literature is the inconsistent use of ESG metrics across studies. Many studies rely on aggregate ESG scores that combine different ESG dimensions into a single measure. This approach may mask the distinct contributions of environmental, social, and governance (ESG) factors. For example, a company with strong governance practices but poor environmental performance might still receive a high aggregate ESG score, potentially leading to misleading conclusions regarding the overall impact of ESG on firm value. Additionally, while many studies have found a positive correlation between ESG and firm value, sector-specific anomalies remain. In the energy sector, for example, companies that perform well on ESG metrics do not always experience higher financial returns. This suggests that the relationship between ESG and financial performance may be more complex and context-dependent than is often assumed. These contradictions underscore the need for future research to disaggregate ESG into its constituent components and consider industry-specific contexts when examining its impact on firm values. A more nuanced approach could help resolve some inconsistencies in the current literature.

Figure 5. Bibliographic coupling network by country

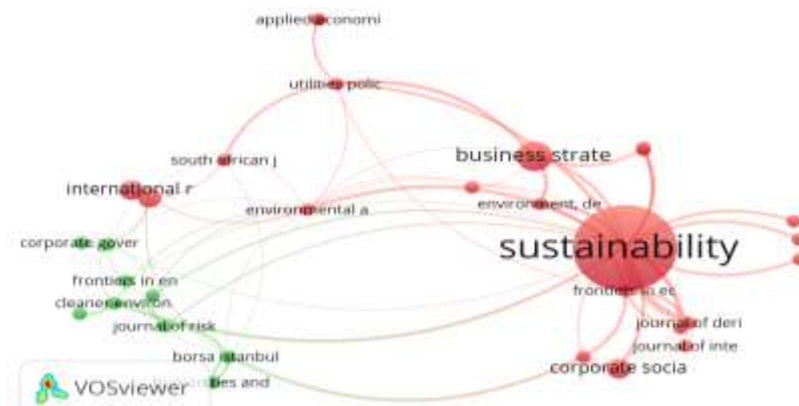

Figure 6. Bibliographic coupling network by journal/source

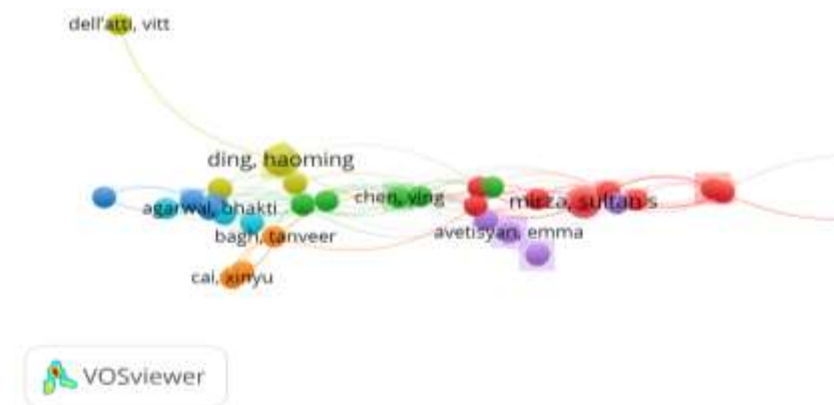

Figure 7. Bibliographic coupling network by author

4.5 Discussion

The findings of this bibliometric and systematic literature review provide important insights into the development, structure, and orientation of research on ESG, investment, and firm value. The observed growth in publication volume, particularly after 2021, indicates that ESG has transitioned from a peripheral topic to a central theme in finance and business research. This surge in academic interest coincides with increasing regulatory attention, investor demand for sustainability information, and institutionalization of ESG practices in capital markets. The rapid expansion of the literature suggests that ESG-related investment research is still in an active phase of conceptual consolidation rather than being mature. The dispersion of articles across numerous journals further underscores the interdisciplinary nature of ESG research. Rather than being confined to a single academic domain, ESG-related investment studies span finance, management, sustainability and environmental economics. While this diversity enriches the literature, it also contributes to the fragmentation of theoretical perspectives and methodological approaches. The relatively low average number of articles per journal indicates that ESG research has yet to establish a dominant publication outlet, reinforcing the role of bibliometric analysis in mapping this field's intellectual landscape.

Co-occurrence analysis highlights the conceptual core of the literature, where ESG, investment, firm value, and financial performance emerge as tightly interconnected themes. This pattern suggests that most studies conceptualize ESG not merely as an ethical or regulatory concern but as an economically relevant factor linked to valuation and performance outcomes. The strong presence of governance-related keywords in the network reflects the enduring importance of corporate governance as a bridge between sustainability considerations and financial decision-making. Simultaneously, the integration of sustainability and stakeholder-related terms indicates a gradual convergence between traditional finance theories and broader stakeholder-oriented perspectives.

Co-citation analysis provides further insights into the intellectual foundations of ESG research. The presence of cohesive author clusters suggests that the literature is anchored in a relatively stable set of foundational studies, particularly those addressing corporate governance, sustainability, and financial performance. This intellectual cohesion may enhance cumulative knowledge building as researchers increasingly draw on shared theoretical frameworks and empirical benchmarks. However, it may also limit theoretical diversity if newer or alternative perspectives are underrepresented within dominant citation networks. The bibliographic coupling results reveal meaningful patterns at the country, source, and author level. At the country level, the prominence of China, the United Kingdom, and several European countries reflects both the scale of academic output and the institutional relevance of ESG in these contexts. The emergence of distinct country clusters suggests that ESG research is influenced by national regulatory environments, market structures, and policy priorities. This finding implies that cross-country comparability remains a challenge and that future research could benefit from a more explicit consideration of institutional heterogeneity(Aydoğmuş et al., 2022; Wu et al., 2025).

At the source level, the strong coupling between sustainability- and finance-oriented journals indicates that ESG research increasingly functions as an interface between sustainability discourse and financial analysis. This bridging role reinforces the strategic position of ESG research in advancing interdisciplinary dialogues. However, this also suggests that methodological standards and evaluative criteria may vary across journals, potentially contributing to inconsistencies in empirical findings. At the author level, bibliographic coupling reveals the formation of research communities centered on shared references and methodological approaches. While such clustering can facilitate a deeper exploration of specific themes, it may also contribute to path dependency in research design. Greater cross-fertilization between author clusters can foster innovation and encourage the adoption of novel methodologies or theoretical perspectives.

Taken together, these results suggest that the ESG–investment–firm value literature is characterized by both consolidation and fragmentation. Consolidation is evident in the convergence of core concepts and foundational studies, while fragmentation persists in terms of measurement approaches, contextual focus, and methodological choices. This duality helps explain why empirical findings in the ESG literature remain heterogeneous, despite the growing volume of research. From a broader perspective,

the findings highlight the value of bibliometric and systematic approaches for synthesizing complex and rapidly expanding research fields. By mapping thematic structures and intellectual linkages, this study provides a foundation for future research to move beyond aggregate assessments toward more nuanced, context-sensitive analyses. In particular, future empirical studies may benefit from greater attention to measurement transparency, cross-country comparability and longitudinal dynamics in ESG-related value creation.

Overall, this discussion underscores that while ESG has become firmly embedded in investment and firm value research, the field is continuing to evolve. The insights derived from this bibliometric review contribute to a clearer understanding of how ESG scholarship has developed, where it currently stands, and which avenues offer the greatest potential for advancing theory and providing empirical evidence. Gull et al. (2025) found that female directors play a crucial role in reducing the negative financial impact of ESG-related controversies in U.S.-listed firms. Similarly, Nadifah et al. (2025) highlight that diverse boards improve ESG performance and subsequently enhance firm value, suggesting that governance structures are a key determinant of ESG effectiveness. Moreover, Yeye and Egbunike (2023) provide evidence that firms with high ESG disclosure quality and diverse boards experience stronger valuation benefits, reinforcing the importance of transparency and inclusive governance in ESG strategy.

Finally, future studies should address the dynamic nature of ESG performance, including controversies, reputational risks, and regulatory changes. Cross-sector and cross-country analyses are necessary to understand the contextual variability in ESG impact, as well as the moderating role of disclosure quality, board composition, and industry characteristics (dos Reis Cardillo & Basso, 2025) (Y. Chen (2020);). Recent research also points to sustainability gaps in the financial sector, indicating that different industries may vary in how they align ESG practices with their financial goals (Ragazou, Sklavos, Zournatzidou, & Sariannidis, 2025). Moreover, emerging studies suggest that financial technology adoption, including AI and big data, may play a critical role in enhancing ESG measurement and reporting (Christine, Hakam, Nainggolan, Wiryono, & Hakam, 2025; Mondal, Akter, Moni, & Polas, 2023).

5. Conclusions

5.1 Conclusion

This study provides a comprehensive bibliometric and systematic review of the relationship between Environmental, Social, and Governance (ESG) factors, investment outcomes, and firm value. ESG has become a central consideration in corporate strategy and investment decisions, with strong ESG performance generally linked to higher profitability, lower capital costs, and enhanced firm resilience. Despite this, the literature demonstrates heterogeneous results across industries and institutional contexts, highlighting the need for more granular research. Further research should examine the role of board diversity in moderating ESG-related risk.

5.2 Research Limitations

This study had several limitations. First, the analysis was limited to peer-reviewed, English-language, open-access articles indexed in Scopus, potentially excluding relevant studies from other databases or subscription-based journals. Second, bibliometric analysis relies on the accuracy of metadata, which may introduce biases in keyword clustering and author identification. Third, this review is descriptive and does not establish a causal relationship between ESG performance and financial outcomes. Finally, most studies rely on aggregate ESG scores, which may obscure the distinct contributions of environmental, social, and governance dimensions and limit the granularity of the findings.

5.3 Suggestions and Directions for Future Research

Future research on the relationship between ESG, investment, and firm value should focus on several key areas. First, researchers should move beyond aggregate ESG measures and assess the environmental, social, and governance components separately to gain a more precise understanding of their effects on firm value. Additionally, it is important to incorporate dynamic ESG performance by considering ESG controversies, reputational risks, and regulatory changes over time, potentially through longitudinal or event-driven studies. Another area of focus should be the role of board diversity

and governance, particularly in moderating the impacts of ESG. This includes examining the influence of female representation and independent directors to better understand governance mechanisms that enhance firm value. ESG disclosure should also be explored, with future studies examining how ESG disclosure influences firm value across sectors and institutional contexts. A bibliometric review could highlight the need for further exploration of how transparent and high-quality disclosures impact financial outcomes, suggesting that such disclosures can enhance investor assessments and firm valuations. Cross-country and cross-sector analyses are also crucial for comparing ESG impacts across developed and emerging markets, as well as across industries with varying ESG sensitivities, in order to identify contextual moderators. To strengthen causal claims about ESG's effects on financial outcomes, future research should employ advanced econometric techniques such as instrumental variables, difference-in-differences, or dynamic panel models. Moreover, the integration of technology is vital, particularly through the use of AI, machine learning, and big data analytics, to analyze complex ESG data, detect patterns, and improve predictive models for firm valuation and risk assessment. Lastly, addressing publication bias and the replicability of ESG findings through standardized measurement frameworks and open-access datasets will help reduce bias in empirical results and enhance the reliability of research in this field.

Author Contributions

ARS, as the main author, managed and wrote the manuscript, taking responsibility for the conceptualization, methodology, data collection, analysis, and writing. TN served as the supervisor, providing academic guidance, especially in formulating the research problem, reviewing literature, and interpreting findings. NAA contributed his expertise in the field of investment and firm value, offering valuable insights to refine the methodology and discussion sections. TA provided strategic direction on ESG factors and their application to investment theories, contributing significantly to the framework of the review and the overall refinement of the manuscript.

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