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Environmental, Social, and Governance (ESG) and Corporate Governance: A Scopus-Based Bibliometric Analysis (2016–2025)

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ABSTRACT
This study maps the intellectual structure and thematic evolution of Environmental, Social, and Governance (ESG) and Corporate Governance research through a bibliometric analysis of 1,826 Scopus-indexed journal articles published between 2016 and 2025. Using VOSviewer, the study analyzes publication trends, leading authors, highly cited articles, and keyword co-occurrence through network, overlay, and density visualizations. The findings show a significant increase in publications, particularly after 2022, reflecting growing interest in ESG-related governance issues. ESG performance emerged as the dominant theme, closely linked to board characteristics, ESG disclosure, innovation, and sustainable development. Six major thematic clusters were identified, revealing a shift toward digital transformation, green innovation, responsible investment, and ethical issues such as greenwashing and tax avoidance. These findings offer insights into current trends and future directions for ESG and Corporate Governance research.

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ABSTRAK
Penelitian ini bertujuan memetakan struktur intelektual dan perkembangan tematik kajian *Environmental, Social, and Governance* (ESG) dan *Corporate Governance* melalui analisis bibliometrik terhadap 1.826 artikel jurnal terindeks Scopus yang diterbitkan pada periode 2016–2025. Analisis dilakukan menggunakan VOSviewer untuk mengkaji tren publikasi, penulis terproduktif, artikel dengan sitasi tertinggi, serta kemunculan kata kunci melalui visualisasi *network, overlay, dan density*. Hasil penelitian menunjukkan peningkatan publikasi yang signifikan, terutama setelah tahun 2022, yang mencerminkan meningkatnya perhatian terhadap isu ESG dan tata kelola perusahaan. ESG performance muncul sebagai tema penelitian yang paling dominan dan berkaitan erat dengan karakteristik dewan, pengungkapan ESG, inovasi, dan pembangunan berkelanjutan. Analisis juga mengidentifikasi enam klaster tematik utama yang menunjukkan pergeseran fokus menuju transformasi digital, *green innovation, responsible investment*, serta isu etis seperti *greenwashing* dan *tax avoidance*. Temuan ini memberikan wawasan mengenai tren penelitian terkini dan arah pengembangan studi ESG dan *Corporate Governance* di masa mendatang.

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INTRODUCTION

Environmental, Social, and Governance (ESG) has emerged as one of the most influential frameworks in contemporary corporate management and sustainability discourse. Over the past decade, ESG has evolved beyond a voluntary reporting mechanism into a strategic framework that guides corporate decision-making, investment evaluation, and long-term value creation. The growing emphasis on ESG reflects increasing expectations from investors, regulators, customers, and society for companies to operate responsibly while maintaining financial performance and organizational resilience (Fatemi et al., 2018; Friede et al., 2015; Gillan et al., 2021; Izzadieny et al., 2025). Unlike traditional financial indicators that primarily measure short-term profitability, ESG provides a multidimensional perspective that incorporates environmental stewardship, social responsibility, and governance quality into corporate evaluation. Consequently, ESG has become an important benchmark for assessing sustainable business practices and corporate competitiveness in an increasingly complex global economy.

The emergence of ESG also represents a significant evolution from the earlier concept of Corporate Social Responsibility (CSR). Although CSR has long encouraged companies to address social and environmental concerns beyond profit maximization, ESG introduces a more structured, measurable, and investment-oriented framework that enables stakeholders to quantitatively evaluate corporate sustainability performance (Au et al., 2023; Gillan et al., 2021; Rininda et al., 2025). The transition from CSR to ESG has been accelerated by the adoption of international sustainability standards, climate-related financial disclosures, and responsible investment initiatives that demand greater transparency and accountability from corporations (Eccles & Klimenko, 2019; OECD, 2023; Rizka & Putri, 2025). As a result, ESG is no longer perceived merely as a reputational instrument but increasingly functions as a strategic component of corporate governance and risk management capable of influencing firm value, capital allocation, and stakeholder trust (Buallay, 2019; Izzadieny, et al., 2025; Velte, 2017).

Within the ESG framework, corporate governance occupies a particularly critical position because it provides the institutional foundation through which environmental and social objectives are formulated, implemented, and monitored. Governance mechanisms determine how strategic decisions are made, how risks are managed, and how accountability is maintained across different organizational levels. Elements such as board independence, board diversity, ownership structure, executive compensation, audit committees, and shareholder protection collectively shape the effectiveness of ESG implementation and sustainability performance (Cucari et al., 2018; Hussain et al., 2023; Rao & Tilt, 2016; Shleifer & Vishny, 1997). Consequently, governance serves not only as one dimension of ESG but also as an enabling mechanism that facilitates the successful integration of environmental and social initiatives into corporate strategy.

Empirical evidence further demonstrates that effective corporate governance contributes significantly to the quality of ESG practices and sustainability reporting. Firms characterized by strong governance structures generally exhibit more comprehensive ESG disclosure, higher transparency, improved stakeholder engagement, and stronger long-term financial resilience (Buallay, 2019; Miniaoui et al., 2022; Velte, 2017). Previous studies have also shown that board characteristics, gender diversity, institutional ownership, and governance quality positively influence ESG performance and corporate sustainability outcomes (Bear et al., 2010; Bolourian et al., 2021; Shaukat et al., 2016). Conversely, weak governance mechanisms may encourage greenwashing, opportunistic managerial behavior, and symbolic sustainability practices that fail to generate substantive social and environmental impacts (Lee & Raschke, 2023; Mahoney et al., 2013). These findings highlight the inseparable relationship between ESG and corporate governance in promoting sustainable value creation.

Alongside the rapid expansion of ESG implementation in practice, academic research on ESG and corporate governance has experienced remarkable growth across multiple disciplines, including accounting, finance, management, economics, environmental studies, and public policy. The interdisciplinary nature of this research has generated an increasingly diverse body of knowledge encompassing ESG disclosure, sustainable finance, responsible investment, climate governance, corporate performance, stakeholder engagement, and regulatory compliance (Au et al., 2023; Fatemi et al., 2018; Gillan et al., 2021). Such rapid development creates challenges for scholars attempting to understand the intellectual structure of the field, identify influential contributors, and recognize emerging thematic trends. In this context, bibliometric analysis has become an effective quantitative approach for systematically mapping scientific production, citation networks, conceptual relationships, and research evolution through visualization techniques (Donthu et al., 2021; Van Eck & Waltman, 2010).

Despite the growing number of bibliometric studies in sustainability research, existing investigations have predominantly focused on ESG and financial performance, ESG disclosure, sustainability reporting, corporate social responsibility, or broader sustainability management. For instance, Au et al. (2023) examined the landscape of ESG strategies, while numerous bibliometric studies have concentrated on CSR and corporate governance or ESG performance in specific industrial contexts. However, relatively limited attention has been devoted to comprehensively mapping the intellectual relationship between ESG and corporate governance as an integrated research domain. Existing literature remains fragmented across various themes without providing a holistic understanding of publication trends, influential authors, conceptual clusters, thematic evolution, and emerging research opportunities specifically within the intersection of ESG and corporate governance. This fragmentation indicates the necessity for a comprehensive bibliometric synthesis capable of consolidating dispersed knowledge and identifying future research directions.

Responding to this gap, the present study aims to map the scientific landscape of Environmental, Social, and Governance (ESG) and Corporate Governance research using a bibliometric approach based on publications indexed in the Scopus database during the period 2016–2025. Specifically, this study seeks to identify annual publication trends, determine the most influential authors and highly cited articles, visualize keyword co-occurrence networks and thematic clusters, examine the temporal evolution of research topics through overlay visualization, and identify promising directions for future research. By providing a comprehensive overview of the intellectual development of ESG and corporate governance research, this study is expected to contribute both theoretically and methodologically while offering valuable insights for researchers, practitioners, regulators, and policymakers seeking to advance sustainable corporate governance practices.

LITERATURE REVIEW

Environmental, Social, and Governance (ESG) has become one of the most prominent frameworks for evaluating corporate sustainability and responsible business conduct in the twenty-first century. Originally introduced as an investment screening criterion, ESG has evolved into a comprehensive strategic framework that integrates environmental protection, social responsibility, and governance quality into corporate operations and long-term value creation. The increasing adoption of ESG is largely driven by global sustainability agendas, stakeholder expectations, responsible investment practices, and regulatory developments requiring companies to disclose non-financial information alongside traditional financial performance (Berg et al., 2022; Eccles et al., 2014; Khan et al., 2016). Consequently, ESG has shifted from being a voluntary corporate initiative to becoming a strategic necessity that influences competitiveness, corporate reputation, and investor confidence.

Compared with Corporate Social Responsibility (CSR), ESG offers a more standardized and measurable approach to assessing sustainability performance. While CSR traditionally emphasizes ethical obligations and philanthropic activities, ESG incorporates quantifiable indicators that facilitate benchmarking, investment analysis, and corporate evaluation. The integration of environmental, social, and governance dimensions enables stakeholders to evaluate not only financial outcomes but also organizational resilience and long-term sustainability (Christensen et al., 2022; Gillan et al., 2021; Rizka et al., 2025). Accordingly, ESG has become an essential component of sustainable finance and corporate strategy, encouraging organizations to adopt transparent reporting practices and strengthen accountability toward multiple stakeholder groups.

Among the three ESG dimensions, governance occupies a central position because it establishes the institutional mechanisms through which environmental and social objectives are formulated, implemented, and monitored. Corporate governance refers to the system of rules, structures, and processes that directs and controls organizational activities while balancing the interests of shareholders and other stakeholders. Governance mechanisms, including board independence, board gender diversity, ownership concentration, executive compensation, audit committees, and shareholder protection, play an important role in ensuring managerial accountability and reducing agency conflicts (Aguilera et al., 2021; Claessens & Yurtoglu, 2013; Rizka et al., 2022). Consequently, governance serves as the organizational infrastructure that enables effective ESG implementation and strengthens corporate credibility in increasingly demanding business environments.

The theoretical relationship between ESG and corporate governance can be explained through Stakeholder Theory, which argues that firms should create value not only for shareholders but also for all parties affected by corporate activities, including employees, customers, governments, communities, suppliers, and the natural environment (Freeman, 1984). Under this perspective, ESG initiatives represent strategic responses to stakeholder expectations and societal demands. Organizations that effectively integrate environmental stewardship, social responsibility, and transparent governance are more likely to strengthen stakeholder trust, improve legitimacy, and achieve sustainable competitive advantages. Recent empirical studies demonstrate that stakeholder-oriented governance structures positively influence ESG disclosure quality and sustainability performance by encouraging broader accountability and inclusive decision-making (De Villiers et al., 2020; Hussain et al., 2023).

In addition to Stakeholder Theory, Agency Theory provides another important explanation for the interaction between ESG and corporate governance. Jensen & Meckling (1976) argue that conflicts of interest naturally arise between shareholders and managers because managers may prioritize personal objectives over shareholder wealth maximization. Corporate governance mechanisms function as monitoring instruments that reduce agency costs through independent oversight, incentive alignment, and enhanced transparency. Within the ESG context, effective governance encourages managers to pursue sustainability initiatives that create long-term corporate value while preventing opportunistic behaviors such as earnings manipulation or superficial ESG disclosure. Recent evidence suggests that firms with stronger governance structures generally demonstrate superior ESG performance and more credible sustainability reporting compared with firms characterized by weak monitoring systems (Albitar et al., 2020; Alkaraan et al., 2024).

Another theoretical foundation frequently applied in ESG research is Legitimacy Theory, which posits that organizations continuously seek societal approval by aligning their actions with prevailing social norms and expectations Suchman (1995). ESG disclosure therefore functions as a communication mechanism through which corporations demonstrate responsible business conduct and maintain their social license to operate. As environmental concerns, climate change, and social inequality receive increasing public attention, firms are under growing pressure to disclose sustainability information that reflects genuine organizational commitment rather than symbolic compliance. Companies that fail to meet these expectations risk experiencing reputational damage, declining stakeholder trust, and reduced investor confidence (Cho et al., 2015; Michelon et al., 2015). Consequently, governance quality becomes essential for ensuring that ESG reporting reflects substantive organizational performance rather than greenwashing practices.

The adoption of ESG practices can also be interpreted through the lens of Institutional Theory, which emphasizes that organizational behavior is influenced by regulatory requirements, professional norms, industry expectations, and societal pressures (Campbell, 2007; DiMaggio & Powell, 1983). Firms often implement ESG initiatives because governments, stock exchanges, institutional investors, and international organizations increasingly demand sustainability disclosure and responsible governance. These institutional pressures create isomorphic tendencies in which companies adopt similar ESG practices to maintain legitimacy and competitiveness within their respective industries. As sustainability regulations continue to evolve globally, governance structures become increasingly important for ensuring organizational compliance and facilitating the integration of ESG considerations into strategic planning and corporate decision-making (De Villiers et al., 2020; García-Sánchez et al., 2019).

Empirical research consistently demonstrates that corporate governance significantly influences ESG implementation through various organizational mechanisms. Board diversity, board independence, sustainability committees, institutional ownership, and audit quality have all been identified as important determinants of ESG performance and disclosure quality. Diverse and independent boards generally promote more balanced decision-making, improve oversight effectiveness, and strengthen organizational responsiveness to stakeholder concerns. Likewise, sustainability-oriented governance structures contribute to higher reporting transparency and stronger environmental and social performance (Arayssi et al., 2016; Raimo et al., 2021). Despite the substantial expansion of ESG scholarship across accounting, finance, management, and sustainability disciplines, existing literature remains fragmented across multiple themes and research contexts. Therefore, bibliometric analysis provides an appropriate methodological approach for systematically mapping publication trends, intellectual structures, collaboration networks, thematic evolution, and future research opportunities within the intersection of ESG and corporate governance.

Bibliometric analysis provides a systematic and quantitative approach to examining the structure and development of scientific literature by analyzing bibliographic data and relationships among publications (Donthu et al., 2021). Beyond evaluating research productivity and citation impact, bibliometric analysis incorporates science mapping techniques to explore the intellectual and conceptual structure of a research field. Science mapping enables researchers to identify relationships among research topics, authors, publications, and other bibliographic elements, thereby revealing patterns and structures that may not be readily observable through conventional literature reviews (Van Eck & Waltman, 2010). In this context, keyword co-occurrence analysis can be used to identify the conceptual structure of a research domain by examining how frequently keywords appear together, while network, overlay, and density visualizations facilitate the identification of thematic clusters, temporal developments, and the relative prominence of research topics. Therefore, the integration of bibliometric analysis and science mapping provides an appropriate methodological foundation for systematically mapping the intellectual structure and thematic evolution of ESG and Corporate Governance research.

METHOD

This study employs a qualitative research approach by integrating a systematic literature review with bibliometric analysis to examine the scientific development of Environmental, Social, and Governance (ESG) and Corporate Governance (CG) research. The bibliometric approach was selected because it provides a systematic and quantitative means of synthesizing a large volume of scientific publications into a structured knowledge map, thereby enabling researchers to identify publication trends, intellectual structures, collaboration patterns, and emerging research themes. Using the Scopus database as the primary source of bibliographic information, this study investigates the evolution of ESG and Corporate Governance research through analyses of publication outputs, citation patterns, keyword co-occurrence, and conceptual relationships among scientific studies.

Data collection was conducted by searching the Scopus database using the keywords "Environmental, Social, and Governance" OR "ESG" in combination with "Corporate Governance", with the publication period limited to 2016–2025. The initial search yielded 1,891 documents. To improve the consistency and quality of the dataset, the search results were subsequently restricted to publications written in English, reducing the total number of eligible records to 1,844 documents.

A further screening process was performed to exclude publication types that were not considered suitable for bibliometric analysis. Specifically, editorials (5 documents), errata (4 documents), retracted publications (4 documents), notes (3 documents), and conference reviews (2 documents) were removed from the dataset. Following this exclusion process, the final dataset consisted of 1,826 scientific articles, which served as the basis for subsequent bibliometric analysis.

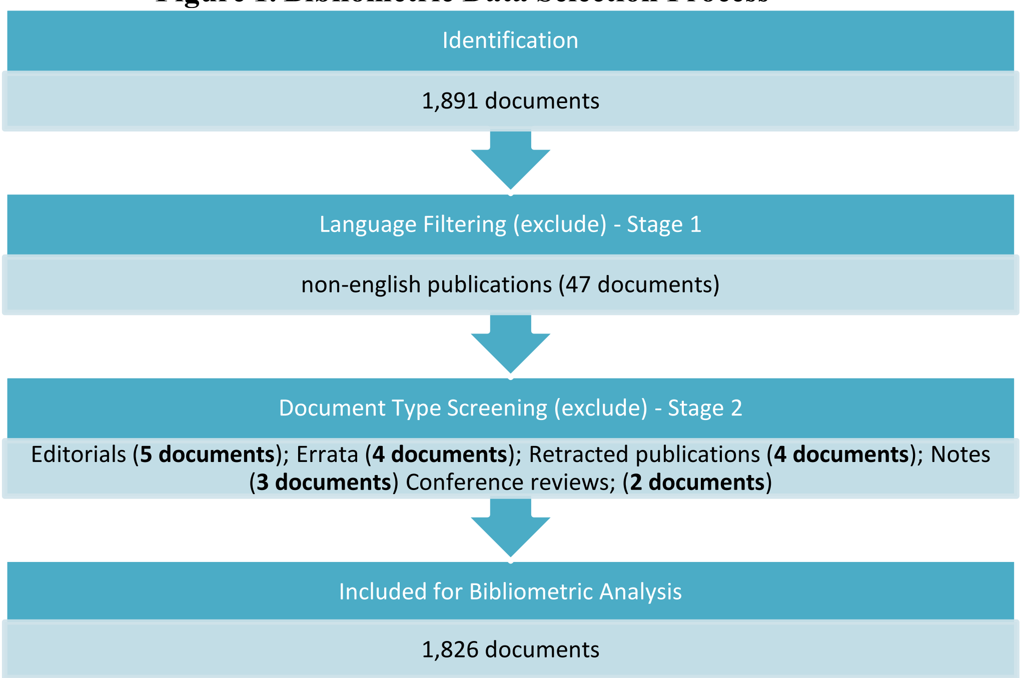
The decision to focus exclusively on English-language journal articles was intended to ensure the inclusion of peer-reviewed scientific publications with high academic quality and international relevance. Restricting the analysis to journal articles also minimizes potential inconsistencies arising from non-peer-reviewed document types and provides a more reliable representation of scholarly developments within the ESG and Corporate Governance research domain.

Bibliometric analysis was performed using VOSviewer version 1.6.20. Data were retrieved from the Scopus database on 19th June 2026 using the following search query: TITLE-ABS-KEY(("Environmental, Social, and Governance" OR ESG) AND ("Corporate Governance")). Network construction was conducted using the full counting method. These settings were selected to ensure a reliable visualization of the conceptual relationships among keywords.

The bibliometric analysis was conducted using VOSviewer, a widely recognized software application for constructing and visualizing bibliometric networks. VOSviewer enables the exploration of relationships among publications through various analytical techniques, including keyword co-occurrence analysis, citation analysis, co-citation analysis, and network visualization. The software generates graphical representations in the form of network visualization, overlay visualization, and density visualization, allowing researchers to identify dominant research clusters, thematic evolution over time, and the relative prominence of specific research topics within the literature.

Network visualization was employed to examine conceptual relationships among keywords and to identify major thematic clusters in ESG and Corporate Governance research. Overlay visualization was used to illustrate the chronological evolution of research themes by highlighting the temporal distribution of keywords according to their average publication year. Meanwhile, density visualization provided insights into the frequency and concentration of keyword occurrences, thereby revealing well-established research areas as well as topics that remain relatively underexplored. Through these bibliometric procedures, the study aims to provide a comprehensive overview of the intellectual landscape of ESG and Corporate Governance research during the 2016–2025 period. The analysis is expected to identify influential publications and authors, reveal major thematic developments, uncover potential research gaps, and propose promising directions for future studies. The overall data selection process adopted in this research is illustrated in Figure 1.

Figure 1. Bibliometric Data Selection Process

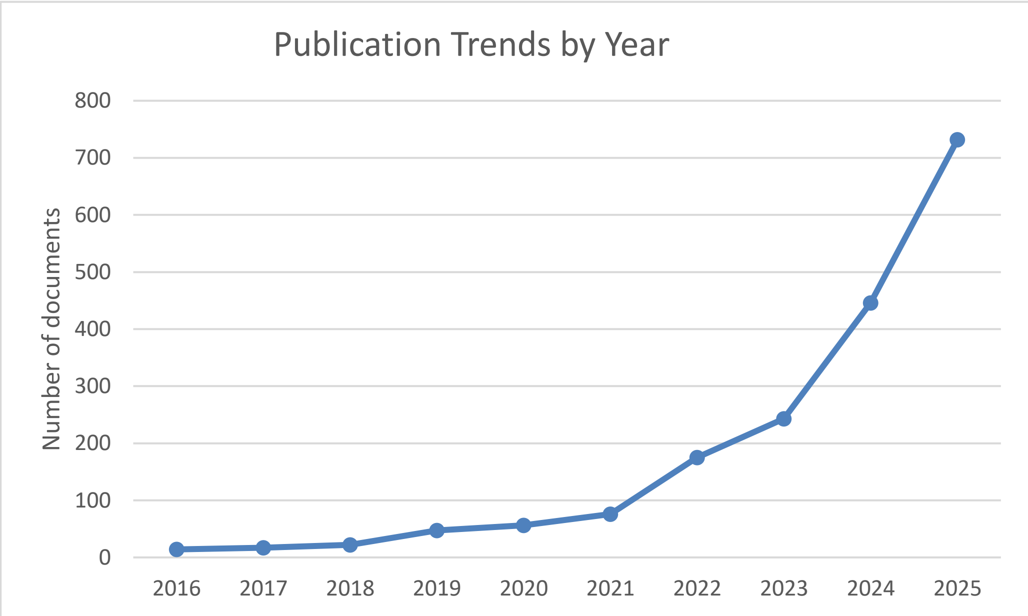


Source: Processed Data, 2026

RESULTS AND DISCUSSIONS

Based on the Scopus database, research on Environmental, Social, and Governance (ESG) and Corporate Governance (CG) has shown a remarkable and consistent upward trend during the period 2016–2025. As illustrated in Figure 2, the number of publications increased substantially from only 14 articles in 2016 to 732 articles in 2025, indicating the growing academic interest in the integration of sustainability and corporate governance. Although publication growth was relatively gradual between 2016 and 2021, with annual outputs ranging from 14 to 76 documents, a significant acceleration occurred from 2022 onwards, when the number of publications increased to 175 articles, followed by 243 articles in 2023, 446 articles in 2024, and reaching its highest level of 732 articles in 2025. The trends of the number of articles per year can be seen in Figure 2.

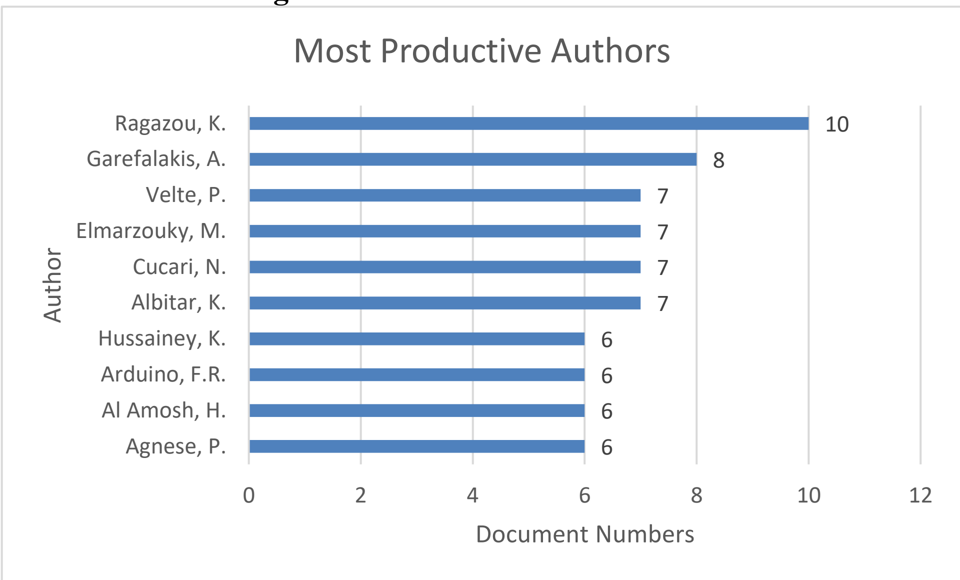
Figure 2. Publication Trends by Year



Source: Processed Data, 2026

The rapid growth after 2022 reflects the increasing importance of ESG as a strategic agenda for corporations, regulators, and investors worldwide. The literature also demonstrates a clear thematic evolution over time. Earlier studies mainly focused on ESG disclosure, sustainability reporting, responsible investment, and the governance mechanisms supporting corporate accountability. However, more recent publications have expanded toward emerging topics such as artificial intelligence adoption, digital transformation, ESG committees, board diversity, green finance, ESG controversies, and greenwashing. For example, Naveed et al., (2025) investigated the relationship between artificial intelligence adoption and ESG disclosure quality, Octavio et al. (2025) highlighted corporate governance as a key driver of ESG performance in ASEAN companies, while Fan et al. (2025) and Muhammad & Tadele (2026) explored governance mechanisms in addressing ESG controversies and greenwashing practices. These findings suggest that ESG and corporate governance research has evolved from a disclosure-oriented perspective into a broader interdisciplinary field that integrates governance innovation, digital technologies, and sustainable business strategies. This sharp increase reflects the growing global attention toward ESG following the implementation of international sustainability initiatives and the increasing demand for transparent corporate governance practices. Similar trends were also reported by Au et al. (2023), who observed a rapid expansion of ESG-related research during the post-2020 period.

Figure 3. Most Productive Authors



Source: Processed Data, 2026

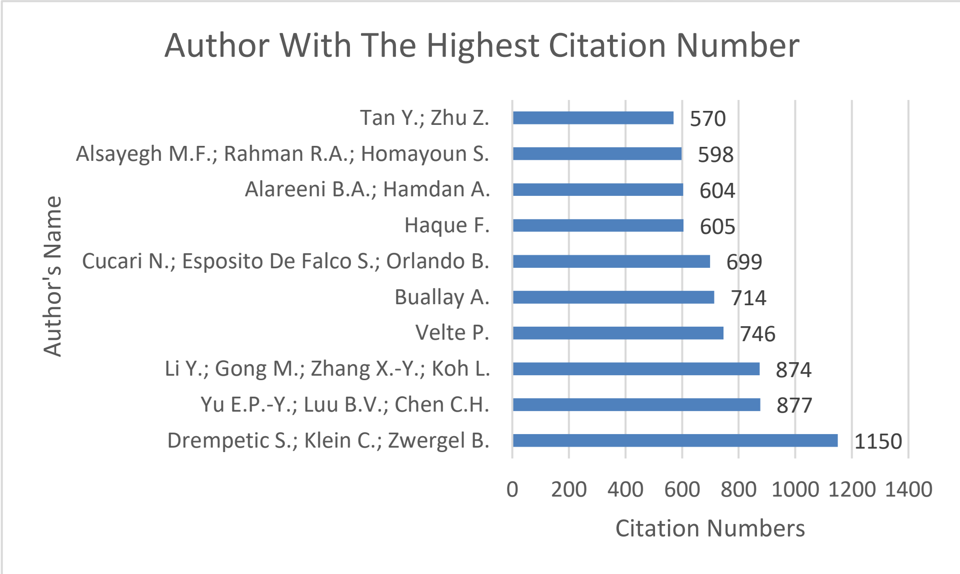
Figure 3 presents the ten most productive authors in the field of Environmental, Social, and Governance (ESG) and Corporate Governance research based on the Scopus dataset analyzed in this study. The results reveal that Ragazou, K. is the most prolific contributor, with 10 publications, followed by Garefalakis, A. with 8 publications. Meanwhile, Albitar, K., Cucari, N., Elmarzouky, M., and Velte, P. each contributed 7 publications, indicating their significant and sustained engagement in this research area. Other notable contributors include Agnese, P., Al Amosh, H., Arduino, F.R., and Hussainey, K., each of whom authored 6 publications during the observation period.

The distribution of publication productivity suggests that ESG and Corporate Governance research is characterized by the active involvement of several leading scholars rather than being dominated by a single author. Although Ragazou, K. produced the highest number of publications, the relatively small difference between the leading contributors indicates a collaborative and diversified research landscape. This pattern reflects the multidisciplinary nature of ESG research, which integrates perspectives from accounting, finance, corporate governance, sustainability management, and strategic management.

Furthermore, the prominence of authors such as Albitar, K., Elmarzouky, M., Al Amosh, H., and Hussainey, K. demonstrates the increasing scholarly attention devoted to ESG disclosure, sustainability reporting, corporate governance mechanisms, and the relationship between governance quality and organizational performance. Similarly, the substantial contributions of Cucari, N. and Velte, P. highlight the continued interest in board characteristics, governance structures, and sustainability-related corporate policies. Collectively, these prolific authors have played an important role in expanding the intellectual foundation of ESG and Corporate Governance research and have significantly influenced the evolution of the field over the last decade.

Another notable finding is that the difference between the first-ranked author and the tenth-ranked author is relatively small, ranging from 10 to 6 publications. This narrow distribution indicates that scientific productivity in this field is relatively balanced and dispersed across multiple researchers rather than concentrated within a limited group of dominant scholars. Such a pattern suggests that ESG and Corporate Governance has become an increasingly collaborative and rapidly expanding research domain, attracting contributions from academics with diverse disciplinary backgrounds and geographical contexts.

Figure 4. Most Cited Authors within the ESG and Corporate Governance Dataset



Source: Processed Data, 2026

Figure 4 presents the authors with the highest citation counts within the ESG and Corporate Governance dataset analyzed in this study. The results indicate that Drempetic S., Klein C., and Zwergel B. obtained the highest citation count, with a total of 1,150 citations. They are followed by Yu E.P.-Y., Luu B.V., and Chen C.H., whose publications accumulated 877 citations, and Li Y., Gong M., Zhang X.-Y., and Koh L., with 874 citations. Other authors with substantial citation counts include Velte P. (746 citations), Buallay A. (714 citations), Cucari N., Esposito De Falco S., and Orlando B. (699 citations), Haque F. (605 citations), Alareeni B.A. and Hamdan A. (604 citations), Alsayegh M.F., Rahman R.A., and Homayoun S. (598 citations), as well as Tan Y. and Zhu Z. (570 citations).

The citation distribution suggests that these authors have made important contributions to the development of ESG and Corporate Governance research. Their studies have been widely referenced by subsequent publications, indicating their relevance in shaping scholarly discussions on topics such as ESG disclosure, sustainability reporting, governance mechanisms, firm performance, and responsible business practices. High citation counts also reflect the extent to which these publications have influenced the conceptual and empirical advancement of the field.

A comparison between publication productivity and citation performance reveals that the most productive authors are not necessarily those with the highest citation counts. For example, Ragazou K. ranks first in terms of publication output, yet does not appear among the top-cited authors in the dataset. Conversely, Drempetic S., Klein C., and Zwergel B. achieved the highest citation count despite having fewer publications than some other contributors. This finding highlights that scientific productivity and citation impact represent different dimensions of academic contribution, where the quality and influence of individual publications may outweigh the quantity of research outputs.

Overall, the results demonstrate that the intellectual foundation of ESG and Corporate Governance research has been shaped by a relatively small group of highly cited scholars whose works continue to serve as key references for subsequent studies. The concentration of citations among these authors also indicates the presence of seminal contributions that have significantly influenced the evolution and maturity of this rapidly growing research area.

Table 1. The Most Cited Articles

Rank	Authors	Title	Year	Citation Number
1	Drempetic S.; Klein C.; Zwergel B.	The Influence of Firm Size on the ESG Score: Corporate Sustainability Ratings Under Review	2020	1150
2	Yu E.P.-Y.; Luu B.V.; Chen C.H.	Greenwashing in environmental, social and governance disclosures	2020	877
3	Li Y.; Gong M.; Zhang X.-Y.; Koh L.	The impact of environmental, social, and governance disclosure on firm value: The role of CEO power	2018	874
4	Velte P.	Does ESG performance have an impact on financial performance? Evidence from Germany	2017	746
5	Buallay A.	Is sustainability reporting (ESG) associated with performance? Evidence from the European banking sector	2019	714
6	Cucari N.; Esposito De Falco S.; Orlando B.	Diversity of Board of Directors and Environmental Social Governance: Evidence from Italian Listed Companies	2018	699
7	Haque F.	The effects of board characteristics and sustainable compensation policy on carbon performance of UK firms	2017	605
8	Alareeni B.A.; Hamdan A.	ESG impact on performance of US S&P 500-listed firms	2020	604
9	Alsayegh M.F.; Rahman R.A.; Homayoun S.	Corporate economic, environmental, and social sustainability performance transformation through ESG disclosure	2020	598
10	Tan Y.; Zhu Z.	The effect of ESG rating events on corporate green innovation in China: The mediating role of financial constraints and managers' environmental awareness	2022	570

Source: Processed Data, 2026

Table 1 summarizes the ten articles that received the highest number of citations within the ESG and Corporate Governance dataset. The article by Drempetic, Klein, and Zwergel (2020), entitled *The Influence of Firm Size on the ESG Score: Corporate Sustainability Ratings Under Review*, ranks first with 1,150 citations. The high citation count suggests that this study has been extensively used as a reference in discussions concerning ESG measurement and the interpretation of sustainability ratings, particularly regarding how firm characteristics may influence ESG assessments.

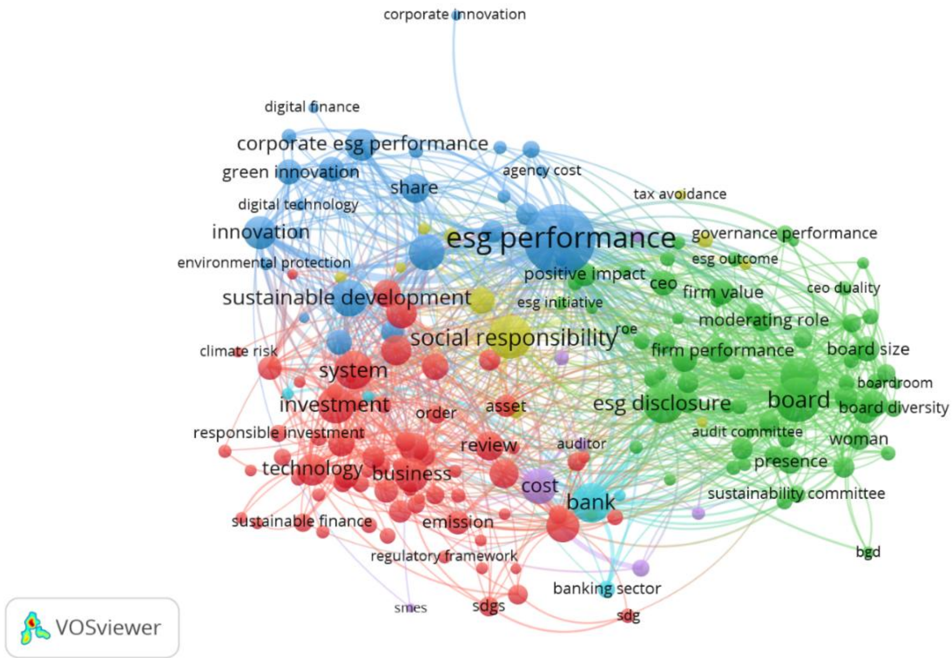
The second-ranked article is *Greenwashing in Environmental, Social and Governance Disclosures* by Yu, Luu, and Chen (2020), which has accumulated 877 citations. Its prominence reflects the growing academic concern over the reliability and credibility of ESG disclosures, especially in distinguishing substantive sustainability practices from symbolic reporting. A comparable level of scholarly attention is observed for the work of Li, Gong, Zhang, and Koh (2018), *The Impact of Environmental, Social, and Governance Disclosure on Firm Value: The Role of CEO Power*, which received 874 citations and examines how ESG disclosure interacts with executive influence in shaping corporate value.

The remaining highly cited publications reveal several recurring themes within the literature. Velte (2017) investigated whether ESG performance contributes to financial performance using evidence from Germany and recorded 746 citations, while Buallay (2019) explored the association between ESG reporting and organizational performance in the European banking sector, attracting 714 citations. These studies indicate that the relationship between sustainability practices and corporate performance has remained one of the most extensively investigated topics in the field.

Issues related to governance structures also appear prominently among the most cited publications. Cucari, Esposito De Falco, and Orlando (2018) examined the influence of board diversity on ESG performance in Italian listed companies and received 699 citations, whereas Haque (2017) analyzed the effects of board characteristics and sustainable compensation policies on corporate carbon performance, accumulating 605 citations. The inclusion of these studies among the most frequently cited publications demonstrates the continuing importance of governance mechanisms in explaining variations in ESG outcomes.

Other influential contributions focus on broader organizational and strategic implications of ESG implementation. Alareeni and Hamdan (2020) analyzed the effect of ESG practices on the performance of firms listed in the S&P 500 index (604 citations), while Alsayegh, Rahman, and Homayoun (2020) investigated the transformation of economic, environmental, and social sustainability through ESG disclosure (598 citations). In addition, Tan and Zhu (2022) explored the impact of ESG rating events on corporate green innovation in China, highlighting the mediating roles of financial constraints and managerial environmental awareness, and has already accumulated 570 citations despite its relatively recent publication. Taken together, the citation profile demonstrates that highly referenced studies in ESG and Corporate Governance are concentrated around several major research streams, namely ESG ratings, ESG disclosure quality, firm value, financial performance, board characteristics, governance mechanisms, and green innovation. The diversity of these themes suggests that the field has expanded beyond conventional sustainability reporting toward a broader interdisciplinary perspective that integrates governance, strategic management, finance, and environmental innovation. Consequently, these highly cited publications provide an important intellectual foundation for understanding the evolution and future direction of ESG and Corporate Governance research.

Figure 5. Network Map of Research Themes in ESG and Corporate Governance 2016-2025



Source: Processed Data, 2026

Figure 5 illustrates the keyword co-occurrence network generated using VOSviewer based on publications related to Environmental, Social, and Governance (ESG) and Corporate Governance from 2016 to 2025. In this visualization, node size represents the frequency of keyword occurrence, while the links between nodes indicate the strength of co-occurrence relationships. The analysis reveals that "esg performance" occupies the most prominent position in the network, reflecting its high frequency and strong connectivity with numerous research topics. This finding indicates that ESG performance has become the principal concept linking discussions on governance mechanisms, sustainability, innovation, corporate strategy, and organizational outcomes. The network visualization identifies six major clusters, each representing a distinct yet interconnected research stream within the ESG and Corporate Governance literature. The dense connections among clusters demonstrate that contemporary ESG research has evolved into a multidisciplinary field that integrates perspectives from corporate governance, finance, sustainability, innovation, and strategic management.

Cluster 1 (Red): Investment, Technology, and Sustainable Business Transformation

The red cluster represents one of the largest thematic groups in the network and is primarily centered around the keywords "system," "investment," "technology," "business," "finance," and "growth." Additional terms, including "report," "emission," "regulatory framework," "sustainable finance," "responsible investment," "blockchain," "fintech," "SDGs," and "environmental sustainability," further characterize this cluster. The composition of this cluster indicates that ESG and Corporate Governance research has increasingly expanded beyond conventional governance and disclosure issues toward broader discussions on sustainable business transformation and investment decision-making. The frequent occurrence of technology-related keywords such as blockchain and fintech suggests that digital innovation is emerging as an important enabler of ESG implementation and sustainable finance. At the same time, the presence of concepts such as responsible investment, climate, emission, and regulatory framework reflects growing scholarly attention to integrating environmental considerations into financial markets and corporate strategy. Overall, this cluster highlights the convergence of investment practices, technological development, and sustainability-oriented business models, demonstrating that ESG has become closely associated with broader economic transformation and long-term value creation rather than functioning solely as a reporting or compliance mechanism.

Cluster 2 (Green): Corporate Governance Mechanisms, Board Attributes, and ESG Disclosure

The green cluster primarily captures research examining the relationship between corporate governance mechanisms, board characteristics, and ESG disclosure. The most prominent keywords in this cluster include “board,” “director,” “esg disclosure,” “gender diversity,” “board size,” “woman,” “firm performance,” “firm value,” and “governance structure.” Other closely connected terms, such as “independent director,” “board composition,” “board characteristic,” “governance mechanism,” “audit committee,” “executive compensation,” “sustainability committee,” “CEO duality,”, “legitimacy”, “agency theory,” and “ESG controversy,” further demonstrate the central role of governance structures in shaping sustainability practices.

The dominance of the keywords board and director indicates that board-level governance remains one of the most extensively investigated topics in the ESG literature. A substantial body of research has focused on how board composition, board size, independence, and gender diversity influence ESG disclosure quality, corporate transparency, and sustainability performance. In particular, the frequent appearance of gender diversity and woman reflects increasing scholarly interest in the contribution of female directors to corporate sustainability and responsible governance practices.

The strong connections between “esg disclosure,” “firm performance,” and “firm value” suggest that governance mechanisms are commonly examined as strategic drivers of both sustainability reporting and organizational outcomes. In addition, the presence of terms such as “agency theory,” “governance mechanism,” and “executive compensation” indicates that many studies adopt governance-based theoretical perspectives to explain managerial behavior and the effectiveness of ESG implementation. Meanwhile, keywords including “audit committee” and “sustainability committee” highlight the growing importance of specialized board committees in enhancing ESG oversight and accountability.

Overall, this cluster demonstrates that contemporary ESG research increasingly recognizes effective corporate governance as a fundamental prerequisite for improving ESG disclosure quality, strengthening sustainability performance, and creating long-term firm value. The dense interconnections among governance-related variables also indicate that board-level characteristics remain one of the core intellectual foundations underpinning the development of ESG and Corporate Governance research.

Cluster 3 (Blue): ESG Performance, Digital Transformation, and Corporate Competitiveness

The blue cluster is centered on the keyword “esg performance”, which also represents one of the largest and most interconnected nodes in the overall network. Surrounding this central concept are several closely related keywords, including “corporate ESG performance,” “green innovation,” “digital technology,” “digital transformation,” “digital finance,” “corporate innovation,” “corporate performance,” “corporate reputation,” “competitive advantage,” “corporate value,” “mechanism,” "efficiency," and "sustainable development." The strong interconnections among these terms indicate that recent ESG research increasingly focuses on evaluating the strategic outcomes of ESG implementation rather than merely examining disclosure practices.

The prominence of green innovation, digital technology, and digital transformation suggests that technological capabilities have become important drivers of ESG performance. Rather than treating ESG as a standalone sustainability initiative, many contemporary studies investigate how digitalization and innovation can improve operational efficiency, strengthen environmental performance, and support long-term organizational competitiveness. The inclusion of digital finance further reflects the expanding role of financial technology in facilitating sustainable investment and ESG-related decision-making.

Another notable characteristic of this cluster is the close relationship between ESG performance and business outcomes, represented by keywords such as corporate performance, corporate reputation, competitive advantage, and corporate value. This pattern indicates that ESG is increasingly viewed as a strategic resource capable of enhancing organizational competitiveness and value creation. At the same time, concepts such as agency cost, mechanism, and executive suggest that governance and managerial decisions remain important factors influencing the effectiveness of ESG implementation. The presence of sustainable development, environmental protection, and financing constraint further demonstrates that this research stream integrates sustainability objectives with corporate financial and strategic considerations. Overall, the blue cluster reflects a shift in the ESG literature from a compliance-oriented perspective toward a performance-oriented paradigm, where digital transformation, innovation, and governance mechanisms jointly contribute to improving corporate sustainability and long-term business success.

Cluster 4 (Yellow): ESG Disclosure Quality, Greenwashing, and Market Consequences

The yellow cluster primarily focuses on issues related to ESG disclosure quality, corporate transparency, and the consequences of sustainability reporting for financial markets. The cluster consists of keywords such as "csr disclosure," "csr performance," "esg information," "esg information disclosure," "integrated reporting," "greenwashing," "social responsibility," "earnings management," "tax avoidance," "stock return," "stock price crash risk," and "retail investor."

The coexistence of ESG information disclosure, CSR disclosure, and integrated reporting indicates that this research stream is largely concerned with how organizations communicate sustainability-related information to external stakeholders. Rather than focusing solely on the implementation of ESG practices, studies within this cluster emphasize the quality, transparency, and credibility of sustainability reporting as important determinants of stakeholder trust and corporate accountability. An important characteristic of this cluster is the inclusion of greenwashing, which appears alongside earnings management and tax avoidance. This relationship suggests that researchers increasingly investigate whether ESG disclosures genuinely reflect corporate sustainability performance or merely serve as symbolic communication strategies aimed at enhancing organizational legitimacy. Consequently, issues related to disclosure reliability and information asymmetry have become major concerns within the contemporary ESG literature.

The presence of stock return, stock price crash risk, and retail investor further demonstrates that ESG reporting is frequently examined from a capital market perspective. Existing studies increasingly explore how sustainability information influences investor decision-making, market reactions, and corporate valuation, while also assessing whether high-quality ESG disclosures can mitigate investment risk and improve market confidence. Overall, this cluster highlights the growing importance of transparent and credible sustainability reporting in strengthening corporate accountability and supporting efficient financial markets.

Cluster 5 (Purple): Corporate Attributes and Sustainability Disclosure

The purple cluster consists of seven keywords, namely “auditor,” “cost,” “debt,” “firm size,” “institutional ownership,” “SMEs,” and “sustainability disclosure.” Although relatively smaller than the other clusters, this group highlights the importance of organizational characteristics and monitoring mechanisms in shaping sustainability reporting practices and ESG implementation.The presence of firm size, debt, and institutional ownership suggests that firm-specific attributes are frequently examined as determinants of sustainability disclosure. Existing studies commonly investigate whether larger firms, highly leveraged companies, or organizations with substantial institutional ownership exhibit stronger commitments to ESG reporting due to greater stakeholder pressure, regulatory scrutiny, or governance expectations. Similarly, the inclusion of SMEs indicates that ESG research is increasingly extending beyond large listed corporations to explore sustainability challenges faced by small and medium-sized enterprises.

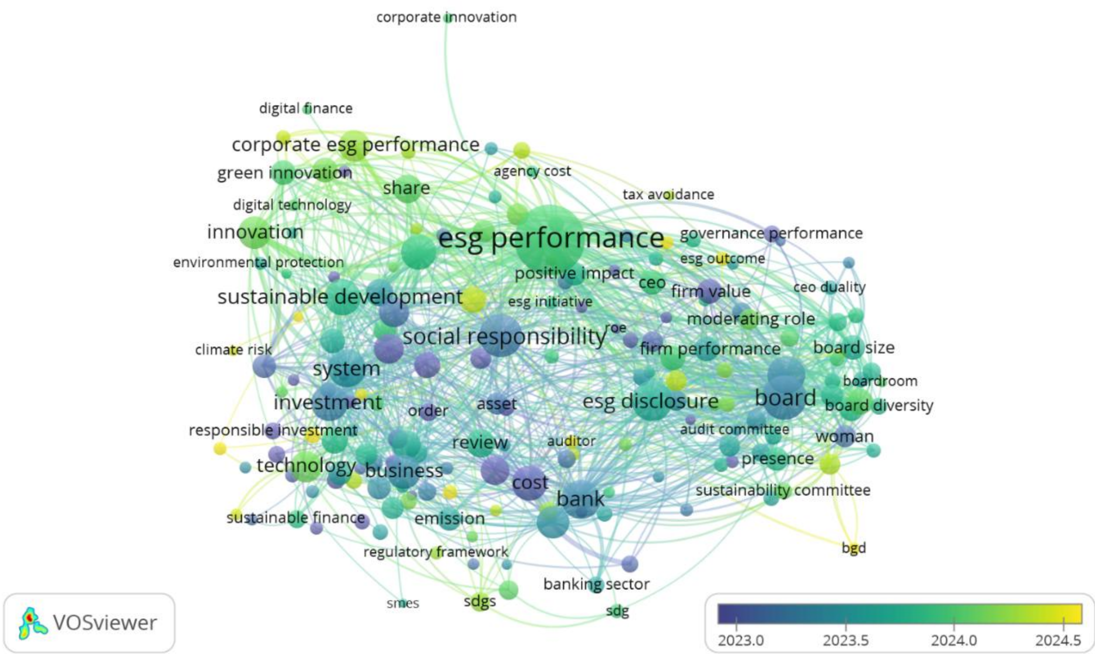
Another notable feature of this cluster is the appearance of auditor and sustainability disclosure, reflecting growing scholarly attention to the role of external assurance and monitoring in enhancing the credibility and reliability of ESG-related information. Auditing practices are increasingly recognized as important mechanisms for reducing information asymmetry and strengthening stakeholder confidence in sustainability reporting. The inclusion of cost further suggests that researchers are also concerned with the economic implications of ESG implementation and disclosure. Studies within this stream frequently evaluate the trade-offs between the resources required to adopt sustainability practices and the potential long-term benefits associated with improved transparency, investor confidence, and organizational legitimacy. Overall, this cluster demonstrates that firm characteristics and governance-related monitoring mechanisms remain important contextual factors influencing sustainability disclosure and ESG practices. Rather than treating ESG implementation as a uniform process, the literature increasingly recognizes that organizational size, ownership structure, financial conditions, and assurance mechanisms shape the extent and quality of sustainability reporting across different types of firms.

Cluster 6 (Cyan): ESG, Financial Stability, and the Banking Sector

The cyan cluster consists of five keywords: “bank,” “banking sector,” “commercial bank,” “financial stability,” and “social dimension.” Although it represents the smallest cluster in the network, its composition highlights a specialized research stream focusing on the application of ESG principles and corporate governance practices within financial institutions, particularly the banking industry. The dominance of the keywords bank, banking sector, and commercial bank indicates that banks constitute one of the primary institutional contexts in which ESG implementation has been extensively examined. This emphasis reflects the strategic role of financial institutions in allocating capital, managing environmental and social risks, and supporting sustainable economic development through responsible financing practices.

The inclusion of financial stability suggests that recent studies increasingly investigate ESG from a risk management perspective, exploring whether stronger sustainability practices contribute to enhancing the resilience and long-term stability of banking institutions. In parallel, the appearance of the keyword social dimension demonstrates that ESG research in the banking sector extends beyond environmental and governance issues to include broader social responsibilities, such as stakeholder welfare, financial inclusion, and sustainable community development. Overall, this cluster illustrates that the banking industry has emerged as an important setting for examining the interaction between ESG implementation, corporate governance, and financial resilience. Although relatively small compared with the other clusters, its distinct thematic focus indicates growing scholarly interest in understanding how sustainability principles can strengthen governance quality and long-term stability within financial institutions.

Figure 6. Overlay Visualization of Keyword Co-occurrence in ESG and Corporate Governance Research (2016–2025)



Source: Processed Data, 2026

Figure 6 presents the overlay visualization of keyword co-occurrence generated using VOSviewer, illustrating the temporal evolution of research themes in Environmental, Social, and Governance (ESG) and Corporate Governance studies during the 2016–2025 period. The color gradient represents the average publication year of each keyword, where darker blue tones indicate topics that were more prominent in earlier studies, green denotes topics that gained attention during the intermediate period, and yellow represents the most recent research directions. This visualization provides valuable insights into how scholarly attention has shifted over time and reveals the dynamic development of the ESG and Corporate Governance literature.

In the earlier phase of the observation period, research was primarily concentrated on topics associated with bank, cost, system, technology, review, and social responsibility, which are represented by darker blue shades. The prominence of these keywords suggests that initial studies largely focused on the implementation of sustainability principles within corporate systems, technological development, and the role of social responsibility in organizational management. In addition, the appearance of bank and banking sector indicates that financial institutions constituted one of the earliest contexts for examining ESG-related practices and governance mechanisms.

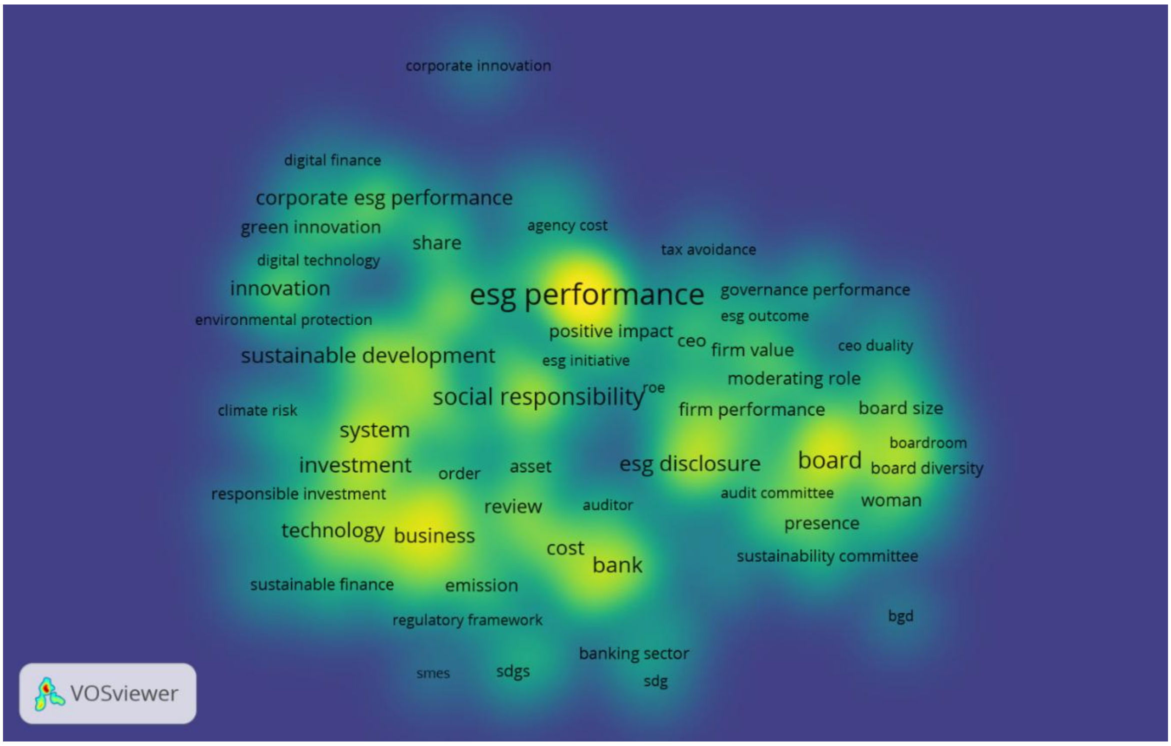
As the field evolved, the research focus gradually shifted toward themes represented by green-colored nodes, including ESG performance, ESG disclosure, firm performance, board, innovation, green innovation, sustainable development, and board diversity. The emergence of these topics reflects an increasing emphasis on evaluating the effectiveness of ESG implementation rather than merely discussing sustainability concepts or disclosure practices. During this stage, researchers also paid greater attention to the influence of governance mechanisms and innovation capabilities in improving ESG outcomes and organizational performance.

The most recent developments are represented by yellow-colored keywords, including tax avoidance, greenwashing, responsible investment, digital finance, corporate ESG performance, ESG outcome, ESG initiative, positive impact, presence, and BGD (board gender diversity). The appearance of these topics suggests that contemporary research has become increasingly sophisticated by addressing ethical concerns, information credibility, and the strategic implications of ESG implementation. In particular, the growing attention to greenwashing and tax avoidance indicates a shift toward critically evaluating whether sustainability initiatives genuinely reflect corporate practices or merely function as symbolic communication strategies. Likewise, the prominence of digital finance demonstrates the increasing integration of technological innovation into ESG-related decision-making and sustainable investment.

Another notable finding is the continued dominance of ESG performance, which occupies a central position while simultaneously appearing in relatively recent color gradients. This pattern indicates that ESG performance remains a core research theme and continues to evolve through integration with emerging topics such as digital transformation, innovation, governance quality, and responsible investment. Rather than replacing earlier themes, recent studies appear to build upon existing knowledge by expanding ESG research into more interdisciplinary and strategic domains.

Overall, the overlay visualization demonstrates a clear thematic evolution in ESG and Corporate Governance research. The literature has progressed from discussions centered on social responsibility, banking, and organizational systems toward broader investigations of ESG performance, governance effectiveness, digital innovation, and ethical challenges such as greenwashing and tax avoidance. This transition reflects the increasing maturity of the field and highlights a growing research orientation toward measuring the quality, impact, and long-term strategic value of ESG implementation in contemporary organizations.

Figure 7. Density Map of Keyword Co-occurrence in ESG and Corporate Governance Research (2016–2025)



Source: Processed Data, 2026

Figure 7 presents the density visualization of keyword co-occurrence generated using VOSviewer, providing an overview of the concentration and frequency of research themes within the ESG and Corporate Governance literature from 2016 to 2025. In this visualization, areas displayed in bright yellow represent keywords with the highest occurrence frequencies and the strongest concentration within the scientific landscape, whereas green and blue shades indicate topics with comparatively lower research intensity. Consequently, the density map offers a comprehensive representation of the dominant themes that have shaped the development of ESG and Corporate Governance research over the past decade.

The most prominent hotspot in the visualization is “esg performance,” which appears at the center of the map with the highest density level. Its central position and bright yellow coloration indicate that ESG performance has become the principal research focus and serves as the main conceptual hub connecting multiple streams of inquiry. The extensive connections surrounding this keyword demonstrate that contemporary studies increasingly evaluate the effectiveness and outcomes of ESG implementation rather than limiting their attention to sustainability disclosure or governance structures alone.

Several other keywords also appear in high-density areas, including “board,” “esg disclosure,” “business,” “technology,” “investment,” “social responsibility,” and “bank.” The concentration of these terms suggests that governance mechanisms, sustainability reporting, technological development, and investment-related issues constitute the core pillars of the current ESG and Corporate Governance literature. In particular, the close proximity between “board” and “esg disclosure” highlights the growing emphasis on board characteristics and governance structures as key determinants of ESG transparency and sustainability performance.

The visualization further demonstrates that topics related to innovation and sustainable development, including "green innovation," "corporate ESG performance," "digital technology," and "sustainable development," occupy relatively dense areas surrounding the central node. This pattern indicates that technological advancement and innovation have become increasingly integrated into ESG research and are now frequently examined as strategic mechanisms for enhancing corporate sustainability and long-term value creation.

In contrast, several keywords remain located in lower-density regions of the map, such as "tax avoidance," "digital finance," "corporate innovation," "climate risk," "SMEs," "banking sector," "BGD," and "responsible investment." Although these topics are conceptually connected to the broader ESG framework, their comparatively lower density suggests that they have not yet received the same level of scholarly attention as mainstream themes such as ESG performance or board governance. The limited concentration of these keywords indicates potential opportunities for future research, particularly in exploring the interaction between ESG implementation and emerging issues related to financial technology, ethical governance, sector-specific applications, and organizational diversity.

An equally noteworthy observation is the position of "greenwashing," which appears outside the primary density hotspot but remains connected to major research themes. This suggests that concerns regarding the credibility of ESG reporting and the authenticity of sustainability practices have begun to attract increasing academic attention, although they have not yet become dominant topics within the literature. Given the growing emphasis on corporate transparency and stakeholder accountability, greenwashing is likely to represent an important direction for future ESG research. Overall, the density visualization confirms that ESG performance constitutes the intellectual core of the ESG and Corporate Governance research landscape. At the same time, the map illustrates a gradual expansion toward adjacent topics involving governance quality, technological innovation, sustainable finance, and ethical corporate behavior. The coexistence of highly concentrated themes and relatively underexplored areas reflects the continuing evolution of the field and provides valuable guidance for identifying promising avenues for future scholarly investigation.

CONCLUSION AND SUGGESTIONS

This bibliometric study provides a comprehensive overview of the intellectual landscape of Environmental, Social, and Governance (ESG) and Corporate Governance research based on publications indexed in the Scopus database from 2016 to 2025. The findings reveal a substantial increase in scholarly output over the last decade, with publication growth accelerating significantly after 2022 and reaching its highest level in 2025. This trend reflects the growing recognition of ESG and corporate governance as strategic components of sustainable business practices and long-term value creation. The bibliometric mapping demonstrates that ESG performance has emerged as the dominant research theme within the field, functioning as the principal conceptual hub that connects governance mechanisms, sustainability initiatives, technological innovation, and organizational outcomes. Network visualization identified six major thematic clusters encompassing sustainable business transformation and investment, corporate governance mechanisms and board attributes, ESG performance and digital transformation, ESG disclosure and market consequences, firm characteristics and sustainability disclosure, and ESG practices within the banking sector. Together, these clusters illustrate the increasingly multidisciplinary nature of ESG and Corporate Governance research.

The overlay visualization further reveals a clear thematic evolution in the literature. Earlier studies primarily emphasized social responsibility, banking-related issues, organizational systems, and technology adoption, whereas more recent research has shifted toward ESG performance, governance quality, board diversity, innovation, and sustainability-oriented strategies. The emergence of topics such as greenwashing, tax avoidance, digital finance, responsible investment, and corporate ESG performance indicates that current scholarly attention is increasingly directed toward evaluating the credibility, effectiveness, and strategic implications of ESG implementation rather than merely examining disclosure practices.The density visualization reinforces these findings by identifying ESG performance, board, and ESG disclosure as the most intensively studied themes in the literature. At the same time, several topics including digital finance, corporate innovation, SMEs, banking sector, tax avoidance, and responsible investment, remain relatively underexplored, suggesting substantial opportunities for future investigation. The coexistence of highly concentrated research themes and emerging topics reflects the continuing expansion and maturation of ESG and Corporate Governance scholarship.

This study contributes theoretically by providing a comprehensive bibliometric mapping of the intellectual structure, publication trends, influential authors, conceptual themes, and thematic evolution of ESG and Corporate Governance research, thereby consolidating fragmented knowledge and identifying future research directions. Practically, the findings offer valuable insights for researchers, practitioners, regulators, and policymakers in understanding emerging ESG issues and supporting evidence-based governance and sustainability strategies. Despite these contributions, the study is limited to English-language journal articles indexed in Scopus and focuses primarily on keyword co-occurrence analysis without assessing the methodological quality of individual studies. Future research is therefore encouraged to incorporate multiple databases, combine bibliometric analysis with systematic literature reviews or meta-analyses, and extend the analysis through co-authorship, country collaboration, co-citation, or bibliographic coupling techniques to provide a more comprehensive understanding of the ESG and Corporate Governance research landscape, while further exploring emerging topics such as digital finance, greenwashing, tax avoidance, SMEs, sector-specific ESG implementation, and artificial intelligence in corporate governance and sustainability.

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