



ESG, Corporate Governance, and Financial Performance: A Bibliometric and Science Mapping Analysis

Monica Chowdary Akkineni

Merryland International School Plot 13, Sector ME-9, Mohamed Bin Zayed City (MBZ City), Musaffah, Abu Dhabi, United Arab Emirates.

Abstract

This study provides a macro-demographic analysis and micro-relational bibliographic mapping of the literature on Environmental, Social, and Governance (ESG) practices, corporate governance, and corporate financial performance (CFP). Evaluating a corpus of 27 documents extracted from Scopus using R's bibliometrix (biblioshiny) package and VOSviewer, this paper tracks publication trajectories, collaborative networks, and conceptual frameworks of the domain. Findings indicate an exponential surge in scientific production after 2017, peaking between 2023 and 2025, alongside a geographical shift in knowledge production from Western centers toward emerging Asian economies, specifically China and India. Author-level and co-authorship analyses, however, reveal structural fragmentation and limited cross-border integration, with over 90% of authors operating as transient or occasional contributors (Lotka's Law). Key co-occurrence and co-citation clustering analyses uncover thematic integration around standard frameworks (stakeholder, legitimacy, and resource-based theories), yet indicate conceptual stagnation driven by dependence on static linear models assuming symmetric, net effects. Emerging clusters on green innovation, risk mitigation, and configurational board dynamics highlight a shift toward capturing conditional, non-linear corporate realities. Ultimately, this study exposes research gaps regarding measurement inconsistency, rating divergence, and intra-pillar conflict, and outlines a future research agenda prioritizing transformational capacity and structural modeling (fsQCA) to resolve the field's conflicting empirical evidence.

Keywords: Asymmetric configurations, Bibliometric analysis, Corporate financial performance, Corporate governance, ESG disclosure, Science mapping, Thematic clustering, VOSviewer.

1. Introduction

The relationship between corporate sustainability measures and their financial outcomes is a topic that has grown into a core focus in modern finance and corporate governance literature. The increasing integration of Environmental, Social and Governance (ESG) into valuation models and strategic planning over the last twenty years has been driven by evolving regulations, changing stakeholder expectations and shifting investor preferences. While empirical studies investigating the link between ESG and Corporate Financial Performance (CFP) have grown significantly in recent years, early conceptualizations can be traced back to the United Nations 'Who Cares Wins' initiative in the mid-2000s. The rapid increase in academic output in the domain has created a dense, fragmented and methodologically diverse knowledge base that complicates efforts to derive definitive conclusions.

The empirical record of the field remains highly divided despite the extensive volume of published literature. In contrast, most of the literature reports a positive, linear association between ESG performance and various financial metrics, such as Return on Assets (ROA), Return on Equity (ROE), and Tobin's *Q*, but contradictory evidence remains conspicuous; multiple studies have reported non-significant, negative, or structurally complex non-linear relationships (e.g., inverted U-shaped), especially when assessing emerging markets or specific industrial sectors. The observed disparities are largely associated with systemic variations in institutional landscapes, variations across asset- and service-heavy sectors, distinct governance frameworks, and considerable measurement disparity between commercial ESG rating providers. Additionally, the regularized practice of aggregating heterogeneous environmental, social, and governance elements into a single composite score makes adverse mechanisms, at the individual pillar level, ambiguous. While quantitative efforts at synthesizing these findings have been made, existing bibliometric and science mapping attempts exhibit clear limitations. Typically, prior quantitative evaluations have depended on restricted samples, focused exclusively on specific sub-sectors like financial institutions, or isolated distinct elements such as eco-innovation or disclosure policies; therefore, the literature produced lacks a thorough, consolidated macro-demographic and micro-relational mapping capable of comprehensively tracking how the field's conceptual framework, collaborative structures, and intellectual foundations have shifted alongside shifting global regulatory landscapes.

With the intention of addressing these gaps, this study delivers a comprehensive bibliometric and science mapping analysis of the field of ESG, corporate governance, and financial performance using a curated corpus of 274 highly relevant scientific documents extracted from the Scopus database. Employing advanced bibliometric computational tools, specifically the bibliometrix R package via its graphical interface biblioshiny, alongside VOSviewer, this paper systematically evaluates the structural topologies of the field. The study will address four interlinked Research Questions (RQs):

- RQ1: What is the publishing trend in the field of ESG and financial performance and corporate governance?
- RQ2: Which nations, publications, authors, affiliations, collaborations and trends have made significant contributions to the literature in the field of ESG and FP?
- RQ3: Which keywords appear most frequently, and what themes relate to ESG, FP and CG?
- RQ4: What are the most cited articles in the field of SG, FP and CG, and how many of these documents are clustered?

By answering these questions, this paper aims to contribute to the literature in three ways: it establishes an empirical threshold for the field's growth trajectory; it identifies structural fragmentation within global co-authorship networks; and it maps the specific contextual and governance-related frameworks where ESG investment leads to visible corporate value. The remainder of the paper is structured as follows: Section 2 is a review of theoretical and empirical literature; Section 3 outlines the bibliometric methodology and data extraction methods used; Section 4 presents the macro-demographic and micro-relational results; and Section 5 concludes the paper with a discussion of theoretical, methodological, and administrative implications.

2. Literature Review: Environmental, Social and Governance Practices and Corporate Financial Performance

2.1. The Shape of the Field

Research linking environmental, social and governance (ESG) practices to corporate financial performance has grown from a peripheral concern into a busy area of finance and management scholarship. The term entered common usage after the UN Who Cares Wins initiative, with counts in single digits for years afterwards. The first recorded ESG article dates to 2006. Publications approximately doubled every year following 2017 (Ghosh & Singh, 2025). 3177 articles were mapped from Scopus, with a reported annual growth of above 20%, (Lowar et al., 2025). Additionally, a Web of Science census of sustainability reporting and ESG disclosure papers recorded 178 articles in 2022, up from 29 in 2017 (Nyantakyi et al., 2023).

The United States, China, and Western Europe dominate scientific output, followed by India and Australia as secondary contributors to the field. This points to growth patterns that have not been evenly distributed (Ghosh & Singh, 2025; Lowar et al., 2025). Business Strategy and the Environment and Journal of Business Ethics account for a substantial share of highly ranked output. (Au et al., 2023) The former is also the leading outlet for ESG disclosure work. (Ellili, 2022). Analyses of keyword co-occurrence networks reveal a stable foundation: ESG, corporate social responsibility, sustainability, corporate governance, financial performance. This suggests consolidation and stagnation in the themes explored by the literature in the field.

(Au et al., 2023) Identifies four theoretical cornerstones: sustainability of competitive advantage, compliance of social construction, alignment of governance accountability, allocation of sustainable capital, and five thematic clusters, the largest being "ESG activities and economic outcomes." (Ellili, 2022) Reaches a comparable conclusion from a different corpus: clusters around corporate social responsibility, corporate strategy, financial performance, and environmental economics.

2.2. Theoretical foundations

Four perspectives do most of the explanatory work, typically combined rather than competing.

Stakeholder theory remains the modal framework. A TCCM-based review counts 84 studies drawing on it, against 27 for the resource-based view, 16 for institutional theory, 14 for agency theory, 11 for legitimacy theory and 5 for slack resources theory. (Negi & Kumar, 2025). (Bel-Oms & Feder, 2024) reported a similar hierarchy in literature discussing ESG disputes: stakeholder theory in roughly 29% of articles, agency (18%), legitimacy (16%), resource dependence (8%). The core claim is that firms have responsibilities beyond shareholders, in reference to stakeholder theory. Firms' disclosure reduces the information gap between firms and stakeholders, lowers agency costs, and eases access to capital. (Coelho et al., 2023; Metwally et al., 2025).

Legitimacy theory handles firms' ESG practices as a response to an implied social contract between firms and society. (Gholami et al., 2022) reference the managerial branch of stakeholder theory, ranking stakeholder claims by power, authority, and urgency with the interest of protecting reputation and survival. Both theories indicate the driver of ESG engagement as external to the firm.

The resource-based view locates it inside: ESG capabilities, reputation, process knowledge, and organisational routines function as intangible, hard-to-imitate assets generating durable advantage. (Metwally et al., 2025; Tutar et al., 2025). Agency theory concedes that ESG spending may be a reflection of administrative self-interest; this can be traced from a study's objection that insiders over-invest in social responsibility, which is the observation of a prior study. (Au et al., 2023). However, signalling theory views disclosure as a credible tool that committed firms could use to distinguish themselves to socially motivated investors. (Almulhim & Metwally, 2025; Hussain et al., 2024).

It is unanimously agreed that these frameworks are typically applied in isolation, or in superficial pairs, limiting theoretical advancements (Negi & Kumar, 2025). A few recent publications moved beyond static analyses of firms' ESG approaches: (Tutar et al., 2025) researches ESG based on a firm's dynamic capability to continuously sense and adapt to changes in its environment; (Zhu et al., 2025) draws on higher rankings and contingency theory, supported by resource dependence and social identity perspectives. Both studies address the same underlying tension: dominant theories predict a positive association that the empirical evidence does not consistently deliver.

2.3. The Empirical Record: Positive, Negative, and Neither

The weight of published evidence favours a positive association, though rarely a strong one.

(Alareeni & Hamdan, 2020) Report positive associations between ESG and performance among S&P 500 firms. (Hussain et al., 2024) Find ESG disclosure positively related to ROA, ROE and Tobin's Q following the analysis of a 100 Tadawul firms (2017-2022). (Zhang, 2025) Using Shanghai and Shenzhen data (2009-2021), report an ESG coefficient of 0.031 for ROA. (Ismail & Azman, 2024) Find all three pillars positively associated with ROE across 351 Japanese firms. (Tutar et al., 2025) Report a positive ESG-ROA coefficient in a 2015-2025 global panel, with Granger causality indicating ESG activity predicts performance, rather than performance predicting ESG. (Qureshi et al., 2021) Applying panel VAR with GMM to "100 Best Corporate Citizens" data, identify a unidirectional ESG-to-performance relationship.

The dissenting findings are neither rare nor easily dismissed. Nair Biju et al. (2025), examining NIFTY 100 ESG constituents (2014-2023), find no significant direct ESG effect, read through a race-to-the-bottom logic in which sustainability compliance is costly for emerging-market firms; green bond issuance improves aggregate ESG and the S/G pillars but not environmental performance. The study reports an inverse ESG-Tobin's Q relationship in telecommunications. (Tamasiga et al., 2024) Egyptian evidence during COVID-19 frames an expected negative ESG-ROA relationship. (*CAF_Volume 42_Issue 1_Pages 1-19*, n.d.) List several other studies as concluding no relationship exists at all.

Nonlinearity offers one reconciliation. (Au et al., 2023) Note an inverted-U relationship between ESG performance and growth-option value. A study reported an inverted-U shape relationship between sustainability performance and both profitability and valuation across 37 tourism-sector countries. (Tamasiga et al., 2024). The study summarised by (Biju et al., 2025), finds a negative short-run and positive long-run association in the Indian energy sector. Linear specifications may average across regions of opposite slope.

(Gholami et al., 2022), pooling 40 effect sizes from ABDC-indexed financial-institution studies, estimate a positive but weak association (PE = 0.0931, $p < 0.05$); social (PE = 0.0910) and governance (PE = 0.0505) practices are significantly positive, environmental practices are not.

2.4. Disaggregating the Pillars

Treating ESG as a single composite score obscures more than it reveals, and pillar-level evidence is genuinely conflicting.

(Gholami et al., 2022) find each pillar positively related to profitability for large Australian firms, governance carrying the largest coefficient. (Shaikh, 2021), by contrast, report environmental negatively associated with ROA and Tobin's Q, social negatively associated with ROE and Tobin's Q, and only governance positively associated with operating efficiency. (Ghosh & Singh, 2025) Meta-analysis points the same way on environmental, attributed to environmental investment's delayed payoff. (Ismail & Azman, 2024) Find all three pillars positive in Japan but report correlations up to 0.705 between environmental and social scores, questioning separate identification; a Western European sample shows the aggregate ESG score correlating at 0.832 with E and 0.714 with G.

Governance is the most reliably positive pillar across studies; environmental is the least reliable, and the divergence is too large to attribute to sampling noise alone.

2.5. Contingencies: Context Does Most of the Work

If the direct relationship is unstable, the moderators are where the field has found its traction.

Institutional setting. The study institutional differences hypothesis, positive ESG effects in developed markets, negative in emerging ones, is often complicated: Naeem, Cankaya and Bildik find a stronger developed-market association, Kilic et al. find the opposite for stock returns, and **the study** finds a stronger emerging-market ESG-ROA link. (Biju et al., 2025; Tamasiga et al., 2024). (Tutar et al., 2025) Proposes that ESG disclosure only signals value in regions with solid legal infrastructure protecting credibility of reporting; countries with weak policies and little oversight do not offer investors confidence in the information disclosed. (Coelho et al., 2023) Add that the CSR-performance link is mediated differently in market-based (UK, US) and bank-based (France, Germany, Japan) systems.

(Hussain et al., 2024) Finds the positive relationship holds in non-manufacturing but not manufacturing Saudi firms. (Tutar et al., 2025) Finds stronger effects in carbon-intensive sectors, where impacts are directly observable and priced more quickly. Banking is a partial exception: a study reports a stronger correlation in banking than in industrial firms, while other studies find sector-contingent, sometimes negative effects. (Ellili, 2022)

Firm size. (Gholami et al., 2022) provide the cleanest evidence: ESG is positively associated with profitability for large Australian firms and insignificant for SMEs, since SMEs lack the capacity to produce and communicate ESG data at a level stakeholders reward. Firm size is itself a determinant of ESG scores, introducing a mechanical component into size-stratified comparisons. (Gholami et al., 2022).

Competition and market conditions. (Jung & Yoo, 2023) argue competition is an under-examined moderator: the study finds CSR raises Tobin's Q only under high competition, while another study finds it raises returns only under low competition. (Biju et al., 2025) show market volatility (VIX) is positively associated with ESG performance while the World Uncertainty Index is negatively associated, suggesting firms treat ESG as a long-horizon hedge but retrench under genuine uncertainty.

2.6. Governance Mechanisms as Moderators

A rapidly growing stream asks not whether ESG pays but under what governance conditions it pays.

(Metwally et al., 2025) Using 800 firm-year observations from Saudi listed firms and GMM estimation, find that audit committee characteristics, size, independence, meeting frequency, financial expertise, and a sustainability committee each positively moderate the ESG-firm value relationship. (Almulhim & Metwally, 2025) report that board gender diversity and a sustainability committee both strengthen the ESG-performance association. The evidence is fragmented; a study finds no significant sustainability committee effect, as a previous study acknowledges.

(Biju et al., 2025) found in their study that the direct effect of ESG on financial performance is null, but board independence significantly moderates the relationship, suggesting governance quality, not ESG effort, is the factor limiting the outcome.

(Zhu et al., 2025) apply fsQCA, a method that does not assume there is a single formula for success, to 554 firms across 21 EU countries. They found that no single factor, not any single ESG pillar, or diversity measure, was required for high performance; rather, they found different combinations of factors lead to success of different firms. They recovered six sufficient configurations, three each for one-tier and two-tier boards, combining diversity and pillar strength through different routes. This equifinality is difficult to reconcile with the regression-based consensus and helps explain why ESG coefficients vary so widely across governance compositions.

2.7. Measurement and Method

Much of the inconsistency in this literature traces to how ESG is measured and how endogeneity is handled. Rating divergence is the first problem: providers differ in methodology and coverage, producing materially different assessments of the same firm; the composite score’s correlation with the environmental pillar can approach 0.83. (Coelho et al., 2023) Identify the absence of an objective, convergent CSR measure as the review literature’s most significant limitation. Recent mapping work names measurement inconsistency, rating divergence, and greenwashing as key challenges (Lowar et al., 2025). (Tutar et al., 2025) adds that studies often treat symbolic and substantive ESG adoption as if they were the same.

Endogeneity is the second issue: reverse causality is plausible in both directions, and omitted variables, particularly the legal regime governing disclosure, compound the problem. The methodological response has escalated: system GMM. (Hussain et al., 2024; Metwally et al., 2025) instrumental variables and fixed effects (Gholami et al., 2022), panel VAR (Qureshi et al., 2021), Granger causality (Tutar et al., 2025), and fsQCA (Zhu et al., 2025). Whether this has resolved or relocated the identification problem is open; the most careful identification (Biju et al., 2025) does not obviously find larger effects than pooled OLS.

Publication bias is the third and rarely addressed. (Ghosh & Singh, 2025) are among the few to test for it, reporting a Rosenthal fail-safe N of 104.

2.8. Gaps and Positioning

Several gaps follow directly from the above and motivate the present study.

Geographic concentration. Empirical work remains concentrated in China, the US and Western Europe, with South Asia, Africa and least-developed economies under-represented (Lowar et al., 2025) , not a cosmetic omission, since institutional context conditions the ESG effect’s sign as well as magnitude.

Theoretical isolation. Stakeholder, RBV, institutional, agency and legitimacy theories are applied singly rather than integrated. (Negi & Kumar, 2025)Frameworks bridging external legitimacy pressure and internal capability development, as (Tutar et al., 2025) attempts remain rare.

The use of the composite ESG score continues to dominate ESG practices despite notable evidence that the pillars behave differently, sometimes oppositely. (Ghosh & Singh, 2025; Shaikh, 2021). (Au et al., 2023) List differential pillar-level impact among their leading recommendations for future studies.

Across studies investigating the relationship between ESG and financial performance functional form and causal complexity, a linear, symmetric net-effects model remains the norm despite dissenting evidence in the form of inverted-U relationships, time-varying effects, and multiple distinct combinations leading to the same outcome. (Zhu et al., 2025)Longitudinal fsQCA and panel designs capable of detecting configurational change have been called for but not delivered.

Bibliometric coverage. Existing reviews cover restricted samples: 111 articles. (Au et al., 2023), 161 (Ellili, 2022), 81 for eco-innovation (López Pérez et al., 2024), 53 for CSR (Coelho et al., 2023), 533 for financial institutions (Ghosh & Singh, 2025). None combines comprehensive performance analysis and science mapping with a systematic assessment of the theoretical, contextual, and methodological choices generating the field’s inconsistent findings, the gap this study addresses.

3. Methodology

The SCOPUS database was used to extract metadata representative of the topic of study, ESG and Corporate Governance of firms and their Financial Performance. The search was performed on February 9th, 2026, using the keywords "ESG" AND "Corporate Governance" AND "Financial Performance". It retrieved 274 scientific documents.

The raw metadata corpus was analysed in the RGui (version 4.5.2) environment using the web-based graphical interface biblioshiny, which is powered by R’s open-source bibliometrix package. The software was used for a macro-demographic and trend analysis, which was partitioned into three independent sub-menus under the primary “Analysis” operational engine.

Table 1. Structure of the biblioshiny analysis framework (Overview.

Analysis		
Overview	Sources	Authors
- Annual Scientific Production - Citations per Year	- Most relevant sources - Sources’ Production Over Time	- Most Relevant Authors - Lotka’s Law - Authors’ Local Impact - Most Relevant Affiliations

3.1. Overview Metrics

The Overview functions in biblioshiny were used to generate the descriptive profile of the final corpus ($N = 274$). Annual scientific production was analysed to track the growth trajectory of the literature and to identify periods during which research productivity increased or slowed. Simultaneously, citations per year were also extracted to track the average citation frequency of documents published in each year, providing a foundation that can be used to distinguish genuine shifts in academic attention from the citation lag effect that affects more recently published work.

3.2. Source and Journal Metrics

The Sources functions were used to assess the concentration of output across journals and publishing platforms. The Most Relevant Sources data was used to rank journals by the absolute number of articles published within the dataset, identifying the outlets most closely associated with the field. Sources Production Over Time was used to track changes in the productivity of these journals on a year-by-year basis, allowing the analysis to distinguish between journals with a long-standing presence in the field and those whose contributions are more recent.

3.3. Author and Institutional Metrics

The Authors function, which encompassed four sets of indicators, was used to assess the distribution of research output and academic influence of individual scholars and institutions. Researchers were ranked relative to their publication counts within the corpus using the Most Relevant Authors indicator. Lotka's Law was applied to test whether the observed distribution of author productivity corresponded to the inverse-square relationship the law predicts, in which a small number of authors account for a disproportionate share of output while most contribute a single publication. Authors' Local Impact was calculated using local h-index and citation counts; this distinguishes authors whose influence is concentrated within the literature in this dataset from those who may be more prominent in adjacent fields. Most Relevant Affiliations used the institutional metadata attached to each document to identify the universities and research centres most represented in the corpus.

VOSviewer (version 1.6.20) was used to map micro-relational frameworks by generating structural topologies.

A co-authorship analysis was conducted to map the global collaboration structure, using authors as the unit of analysis. A full-counting method was implemented to ensure that all contributing authors received equal weight during the generation of the network. Additionally, documents with more than 25 co-authors were excluded to prevent any hyper-authorship irregularities from distorting the network structure. A threshold filter was applied, requiring authors to have a minimum of 2 documents, but with no citation threshold (0 citations). This resulted in 40 authors who met the criteria, out of the 756 total authors in the dataset; all 40 were included in the final co-authorship network visualisation, preserving both the core research networks and isolated collaborative pairs. Additionally, another network visualisation was generated to represent only the largest connected component of the co-authorship structure. This network followed the same method as the co-authorship structure, but a filter was applied at the end, restricting the visualisation to only the largest connected component of the co-authorship structure. Thereby excluding isolated author clusters, leaving a final analytical network of 4 author pairs (items).

Similarly, a keyword co-occurrence network was generated to understand the conceptual architecture and track shifting research fronts within the field of study. The unit of analysis used was Author Keywords, and a full-counting method was once again implemented, now to ensure all unique author keywords were of equal weight during network generation. Database-generated "Keyword Plus" and generic index terms were excluded from the analysis to ensure the focus of the network remained on themes defined by the researchers. To increase the comprehensibility of the network, a threshold filter was employed, requiring keywords to have a minimum of 3 occurrences. Out of 769 total author keywords in the dataset, 72 keywords met the criteria, and all the qualifying author keywords were included in the final network map. The final visualisation organised these keywords into 9 distinct clusters, with each cluster representing a primary thematic sub-field within the dataset.

A citation network was constructed to identify the most influential contemporary articles within the dataset; it used individual documents as the unit of analysis under a full-counting ruleset, ensuring all document citation links received equal weight during network generation. For better comprehensibility and to isolate the more influential papers in the dataset, a threshold filter was applied, requiring documents to have a minimum of 15 citations. 83 documents, out of the 274 total documents in the dataset, met the criteria, and all 83 were included to form the final citation network map. Furthermore, the node data from this network was exported to isolate and rank the dataset's Most Cited Documents by absolute citation count.

Lastly, a co-citation network was constructed to identify the core foundations of the field using cited references as the unit of analysis and employing a full-counting method to ensure all shared reference links are of equal weight when generating the network. A threshold filter was enforced, requiring a cited reference to have a minimum of 3 citations to filter out peripheral references and map the foundational backbone of the field. 103 references out of 1966 total unique references met the criteria described, all of which were included in the final co-citation map. The final network organises the shared references into distinct, colour-coded co-citation clusters, representing the core foundational literature of the domain.

4. Results

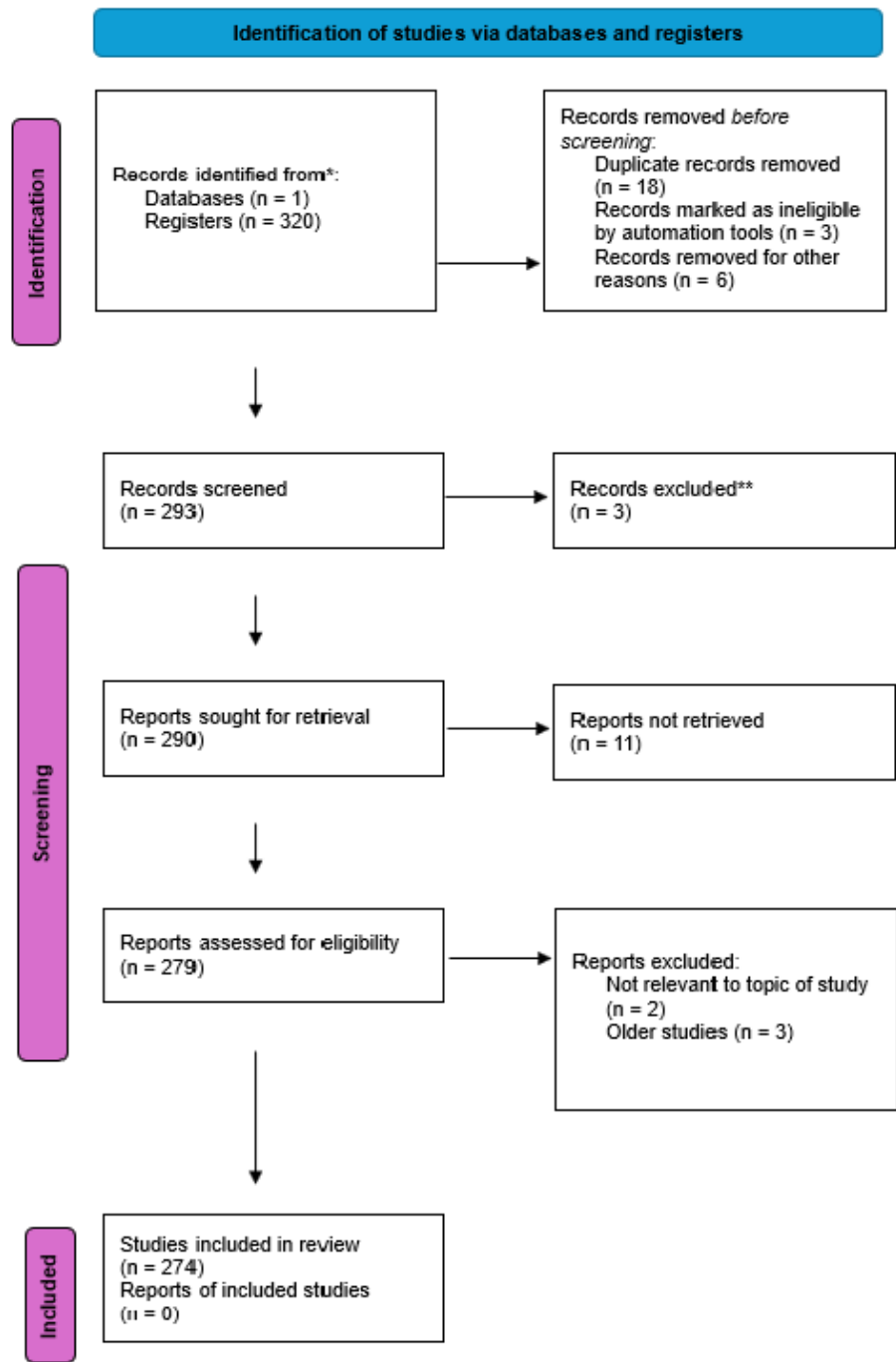


Figure 1. PRISMA diagram.

RQ1 – Annual Scientific Production and Citation Trends

Table 2. Number of records identified per year through the Scopus search.

Year	Articles
2013	1
2014	0
2015	1
2016	6
2017	2
2018	6
2019	9
2020	13
2021	15
2022	30
2023	21
2024	57
2025	100
2026	13

Publication trends in ESG, financial performance, and corporate governance literature have shifted from a relatively niche area of research into a rapidly expanding field. Between 2013 and 2017, the annual scientific production of literature in the field was limited, with only a few publications each year. This leads us to consider this as a formative period of the field, during which ESG consideration was largely peripheral to mainstream

finance and governance research. The primary focus of studies during this period was on the establishment of conceptual links between sustainability initiatives, governance quality and firm performance outcomes.

Post 2017, publications in the field began to increase steadily, indicating a growing academic interest in the topic. This growth became apparent after 2021 when annual publications accelerated significantly. Subsequently, a notable increase occurred in 2022, followed by another substantial increase between 2023 and 2025. It was around this period that publication output reached its highest level.

The overall pattern indicates that the significance of ESG-related issues has grown among both researchers and practitioners. The surges in the production of literature could be related to growing compliance reviews, societal expectations regarding corporate accountability, and increased demand from investors for a firm's sustainability information.

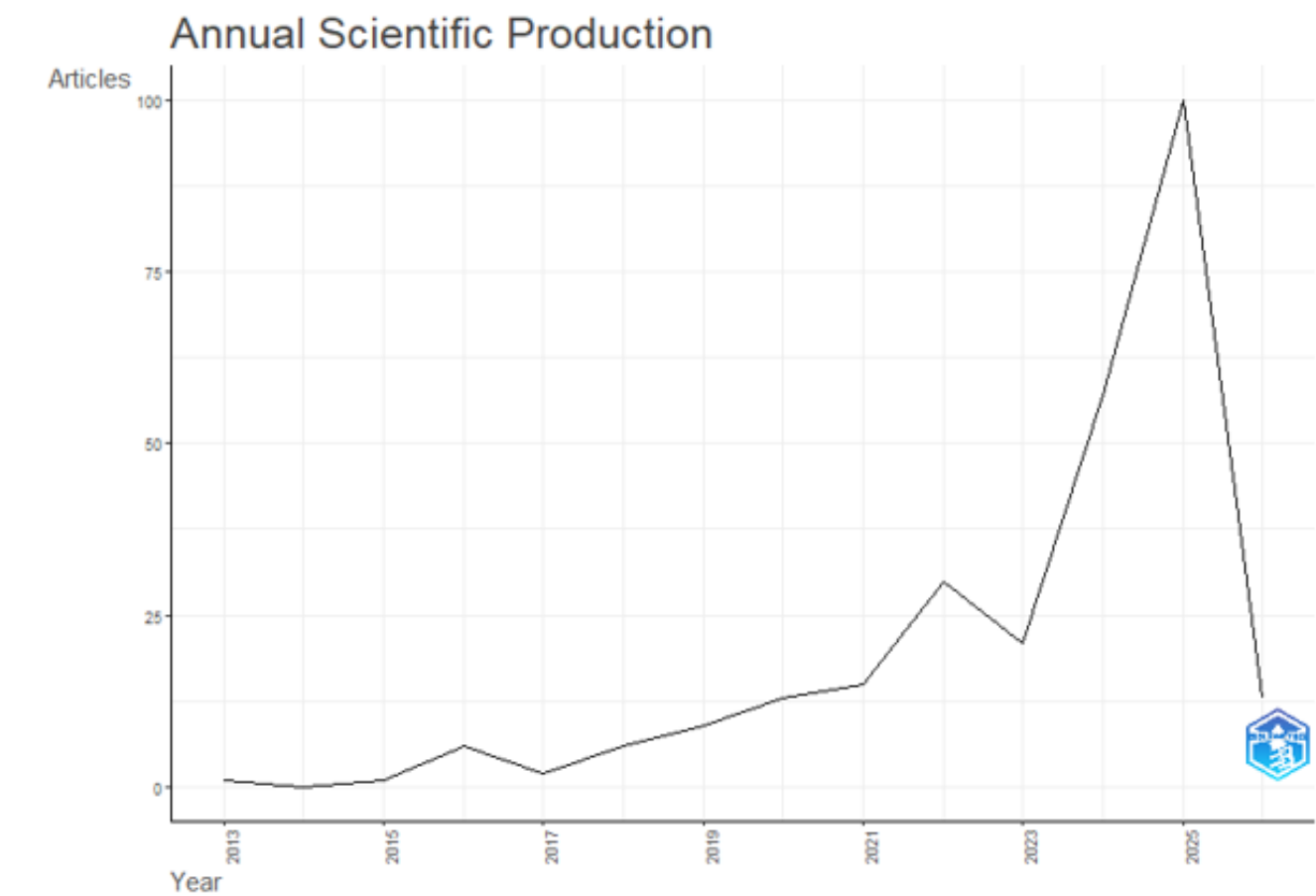


Figure 2. Annual scientific production, 2013-2026.

Table 3. Annual scientific production data, 2013-2026.

Year	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Articles	1	0	1	6	2	6	9	13	15	30	21	57	100	13

Analysis of citation trends reveals a complementary pattern that is, however, different from the pattern indicated by trends in annual scientific production. Average citations per year peaked in 2015 and then again in 2017; this indicates that several highly influential studies were published during the formative stages of the field. These studies appeared to have been prominent in the establishment of many of the theoretical foundations and empirical approaches adopted by researchers in the field later on. The saturation of citations among a relatively small number of early studies is indicative of their importance in shaping the direction of ESG and financial performance literature.

Following 2017, there was a decline in average citations observed, despite growing publication numbers. This downward trend should not be misinterpreted as evidence of decline in research quality; rather it reflects the citation lag effect commonly observed in bibliometric studies. More recent publications require time to accumulate citations and develop influence within the academic community. Accordingly, the spike in publications after 2022 has not yet been matched by an equivalent accumulation in citations. Overall, the findings from the analysis suggest that the phase of accelerated growth the field has entered is likely driven by changes in regulation, stakeholder pressure, and increasing recognition of ESG as a strategic corporate issue.

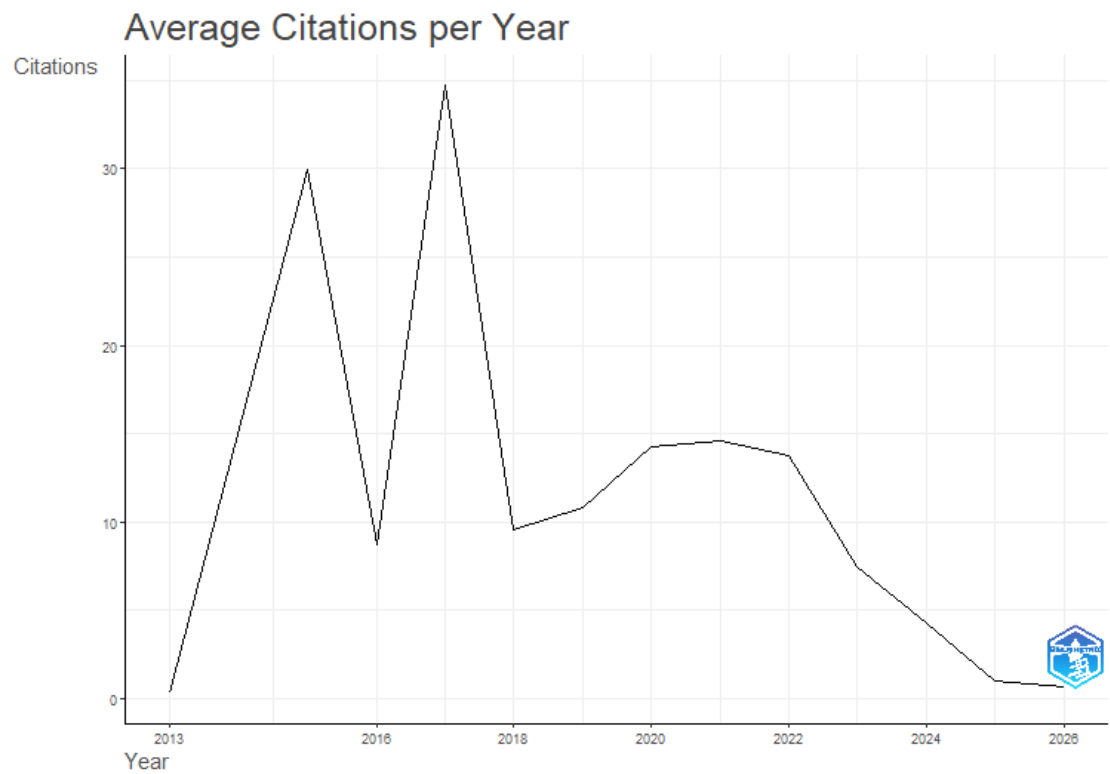


Figure 3. Average citations per year, 2013–2026.

Table 4. Average citations per year data, 2013–2026.

Year	MeanTCperArt	N	MeanTCperYear	CitableYears
2013	4	1	0.29	14
2015	359	1	29.92	12
2016	95.5	6	8.68	11
2017	347	2	34.7	10
2018	86.33	6	9.59	9
2019	86.78	9	10.85	8
2020	99.85	13	14.26	7
2021	87.33	15	14.55	6
2022	68.83	30	13.77	5
2023	29.86	21	7.46	4
2024	12.79	57	4.26	3
2025	2.04	100	1.02	2
2026	0.69	13	0.69	1

RQ2 – Countries, Journals, Authors, Affiliations and Collaboration Networks

Analysis of country-level contribution revealed a notable variation in research output geographically. Among the countries in the dataset, China emerged as the country with the highest productivity, closely followed by India. A substantial number of publications were also contributed to by the United Kingdom, Malaysia, Indonesia, and the United States. Even though China had experienced the most rapidly increasing growth trajectory, it was India and the United States who were among the earliest contributors to literature in the field. The pattern may reflect increasing governmental emphasis on sustainable development, greater regulatory focus on ESG disclosure, and an increasing academic interest in sustainability-related research.

During later years of the study period, we observe a strong growth in productivity from India; the increasing significance of both India and China suggests ESG research is no longer saturated only within traditional Western academic institutions. Consequently, emerging economies have become increasingly more important in shaping discussions surrounding sustainability, governance and corporate performance. Likewise, Malaysia and Indonesia have demonstrated notable growth, thereby indicating a broader level of engagement in ESG-related issues across Asia.

Table 5. Most relevant countries by number of articles.

Region	Freq.
CHINA	74
INDIA	63
UK	29
MALAYSIA	25
INDONESIA	24
USA	24
ITALY	23
SOUTH KOREA	22
SAUDI ARABIA	21
SPAIN	19
TUNISIA	19
POLAND	15
FRANCE	13
ROMANIA	13
GREECE	12
TURKEY	11

Country Scientific Production

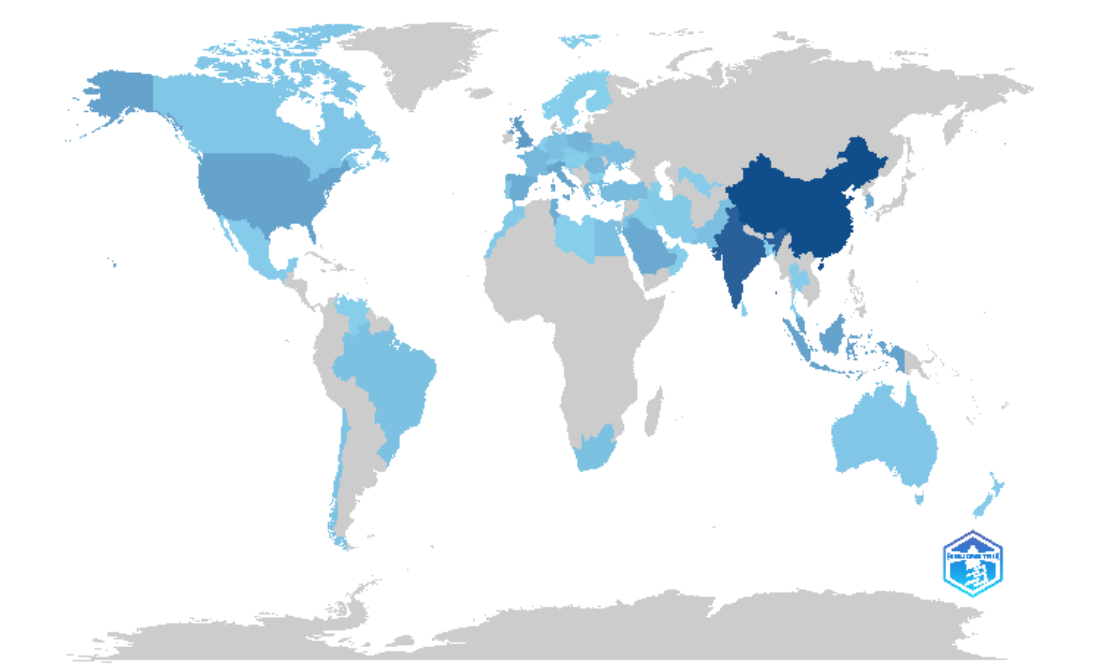


Figure 4. Country scientific production (world distribution map).

Table 6. Country production over time, by year.

Country	Year	Articles
India	2015	0
India	2016	2
India	2017	2
India	2018	2
India	2019	2
India	2020	4
India	2021	6
India	2022	6
India	2023	10
India	2024	29
India	2025	62
India	2026	63
USA	2015	0
USA	2016	2
USA	2017	2
USA	2018	2
USA	2019	3
USA	2020	4
USA	2021	4
USA	2022	7
USA	2023	7
USA	2024	15
USA	2025	23

USA	2026	24
United Kingdom	2015	0
United Kingdom	2016	0
United Kingdom	2017	1
United Kingdom	2018	3
United Kingdom	2019	3
United Kingdom	2020	9
United Kingdom	2021	12
United Kingdom	2022	13
United Kingdom	2023	17
United Kingdom	2024	21
United Kingdom	2025	28
United Kingdom	2026	29
Malaysia	2015	0
Malaysia	2016	0
Malaysia	2017	0
Malaysia	2018	0
Malaysia	2019	5
Malaysia	2020	7
Malaysia	2021	7
Malaysia	2022	7
Malaysia	2023	12
Malaysia	2024	19
Malaysia	2025	25
Malaysia	2026	25
China	2015	0
China	2016	0
China	2017	0
China	2018	0
China	2019	0
China	2020	1
China	2021	1
China	2022	16
China	2023	20
China	2024	45
China	2025	73
China	2026	74
Indonesia	2015	0
Indonesia	2016	0
Indonesia	2017	0
Indonesia	2018	0
Indonesia	2019	0
Indonesia	2020	0
Indonesia	2021	0
Indonesia	2022	3
Indonesia	2023	3
Indonesia	2024	6
Indonesia	2025	21
Indonesia	2026	24

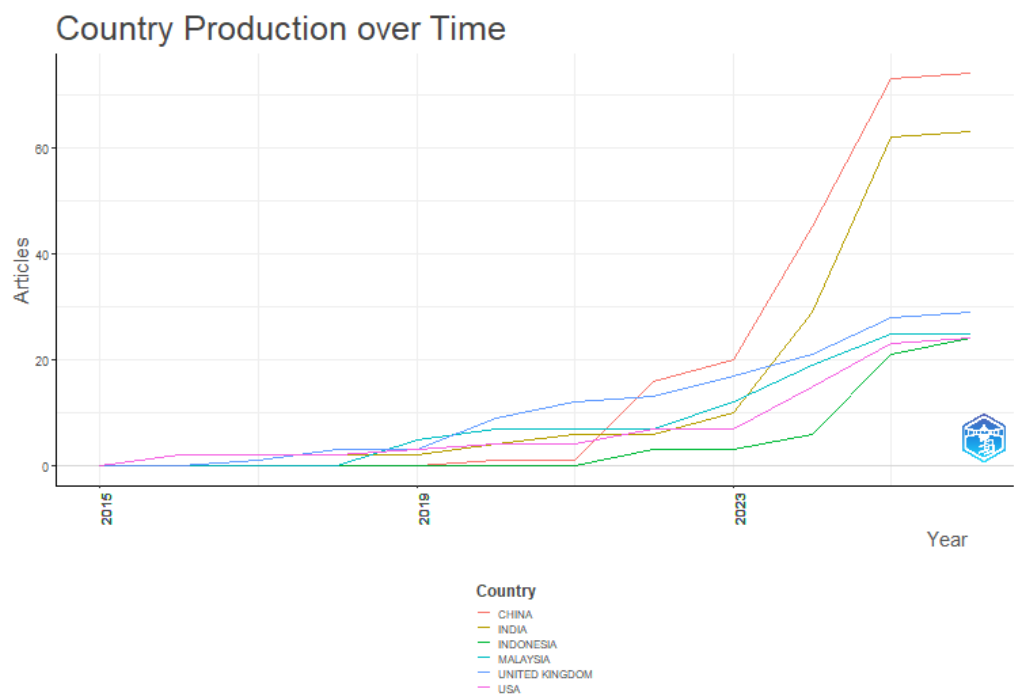


Figure 5. Country production over time, leading contributing countries.

Analysis of the journals revealed a highly concentrated landscape, with Sustainability (Switzerland) emerging as the most dominant publication outlet, accounting for a significantly larger number of articles than any other journal in the dataset. Business Strategy and the Environment ranked second, followed by the Journal of Corporate Finance Research in third. The dominance of sustainability journals over finance journals may indicate that ESG research has primarily developed within sustainability-focused academic communities before becoming more widely integrated into mainstream academic literature in finance. As a result, although finance journals contribute, their representation remains comparatively limited.

Table 7. Most relevant sources by number of articles.

Sources	Articles
Sustainability (Switzerland)	37
Business Strategy And The Environment	7
Journal Of Corporate Finance Research	5
Cogent Business And Management	4
Journal Of Risk And Financial Management	4
Business Strategy And Development	3
Corporate Governance And Sustainability Review	3
Corporate Social Responsibility And Environmental Management	3
Csr, Sustainability, Ethics And Governance	3
E3s Web Of Conferences	3
International Journal Of Disclosure And Governance	3
Springer Proceedings In Business And Economics	3



Figure 6. Most relevant sources by number of articles.

Table 8. Sources’ production over time, by year.

Year	Sustainability (Switzerland)	Business strategy and the environment	Journal of corporate finance research	Cogent business and management	Journal of risk and financial management
2013	0	0	0	0	0
2014	0	0	0	0	0
2015	0	0	0	0	0
2016	0	0	0	0	0
2017	0	0	0	0	0
2018	0	1	0	0	0
2019	3	1	0	0	0
2020	6	1	0	0	0
2021	8	1	0	1	1
2022	15	1	2	1	1
2023	17	2	2	2	2
2024	25	2	2	4	4
2025	35	6	5	4	4
2026	37	7	5	4	4

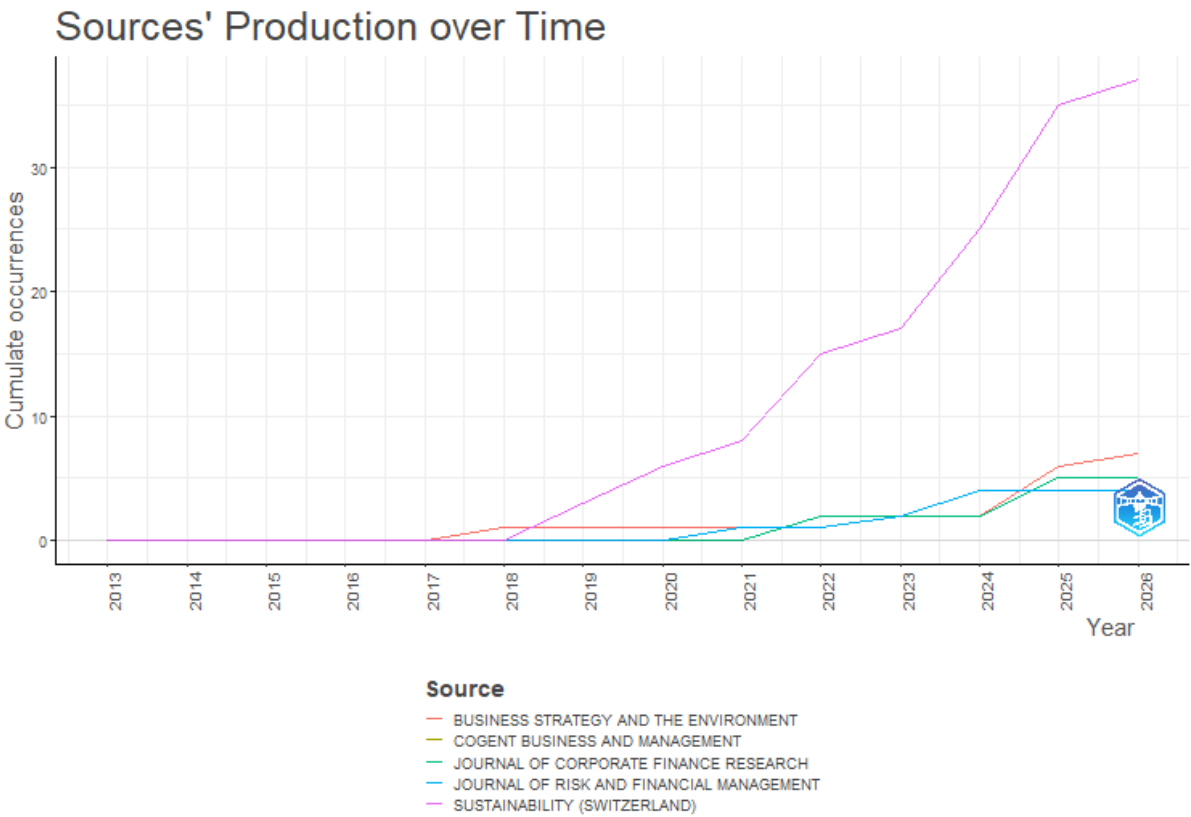


Figure 7. Sources’ production over time, leading journals.

An author-level analysis highlighted the distinction between research productivity and scholarly influence. Patrick Velte emerged as the most productive author based on publication output and citation-based parameters. Lifeng Chen and Voicu Dragomir also ranked among the most significant authors in the dataset. Authors such as Hussainey, Albitar, and Gerged were among the most cited local authors despite having published fewer articles, indicating that the most productive researchers were not always the most cited. This finding demonstrates that influence within a research field depends not only on publication quantity but also on the significance and impact of individual contributions.

Table 9. Most relevant authors by number of articles.

Authors	Articles	Articles Fractionalized
VELTE P	4	4
CHEN L	3	1
DRAGOMIR VD	3	0.91666667
MANS-KEMP N	3	1.33333333
AHMAD N	2	0.66666667
ALKARAAN F	2	0.58333333
ALMA'AMUN S	2	0.53333333
BASALI M	2	1.5
BISWAS PK	2	1
BĀTAE OM	2	0.58333333

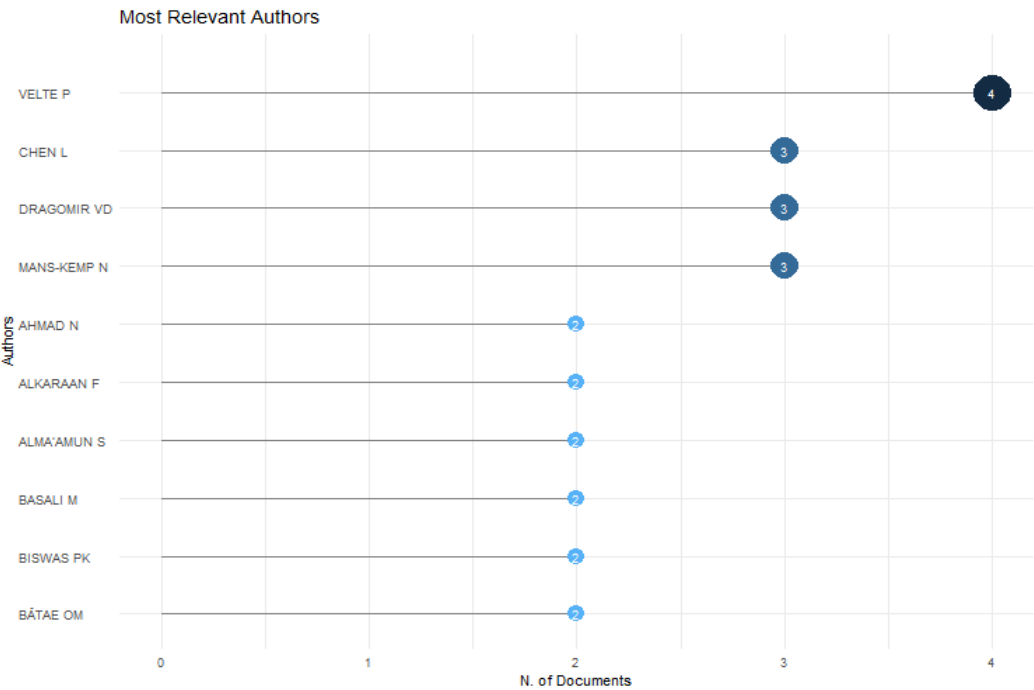


Figure 8. Most relevant authors by number of documents.

Table 10. Most local cited authors.

Author	Local Citations
HUSSAINEY K	17
ALBITAR K	16
GERGED AM	16
KOLADE N	16
AHMAD N	14
MOBAREK A	14
RONI NN	11
VELTE P	6
BĂTAE OM	5
DRAGOMIR VD	5

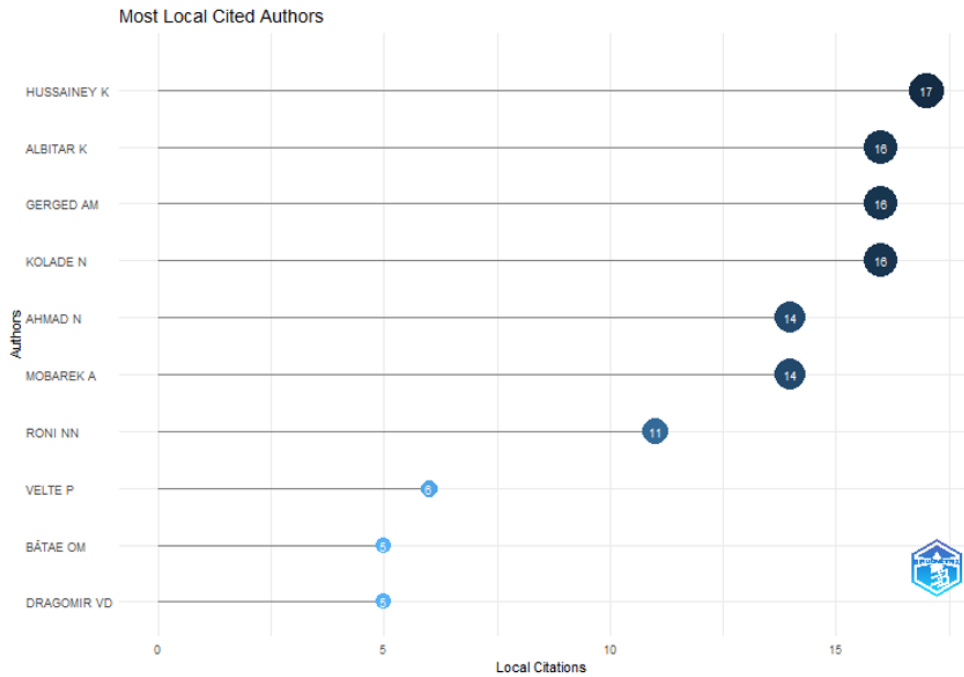


Figure 9. Most local cited authors.

An analysis of author impact further supports this conclusion, as Velte achieved the strongest overall performance across multiple indicators, including publication output, h-index, and g-index. These metrics suggest that his work consistently attracted citations across multiple publications. Conversely, several other authors had relatively high m-index scores due to recent entry to the field. Although they demonstrated strong early impact, longer periods of observation would be required to be definitive of the conclusions regarding their long-term influence.

Table 11. Authors' local impact (h-index, g-index, m-index, total citations).

Author	h_index	g_index	m_index	TC	NP	PY_start
VELTE P	4	4	0.36363636	966	4	2016
DRAGOMIR VD	3	3	0.5	339	3	2021
AHMAD N	2	2	0.33333333	250	2	2021
ALMA'AMUN S	2	2	0.66666667	14	2	2024
BĂTAE OM	2	2	0.33333333	326	2	2021
CAMILLERI MA	2	2	0.18181818	26	2	2016
CHEN L	2	3	0.4	150	3	2022
CLARK C	2	2	0.25	13	2	2019
DANGWAL RC	2	2	0.28571429	196	2	2020
DING H	2	2	0.66666667	22	2	2024

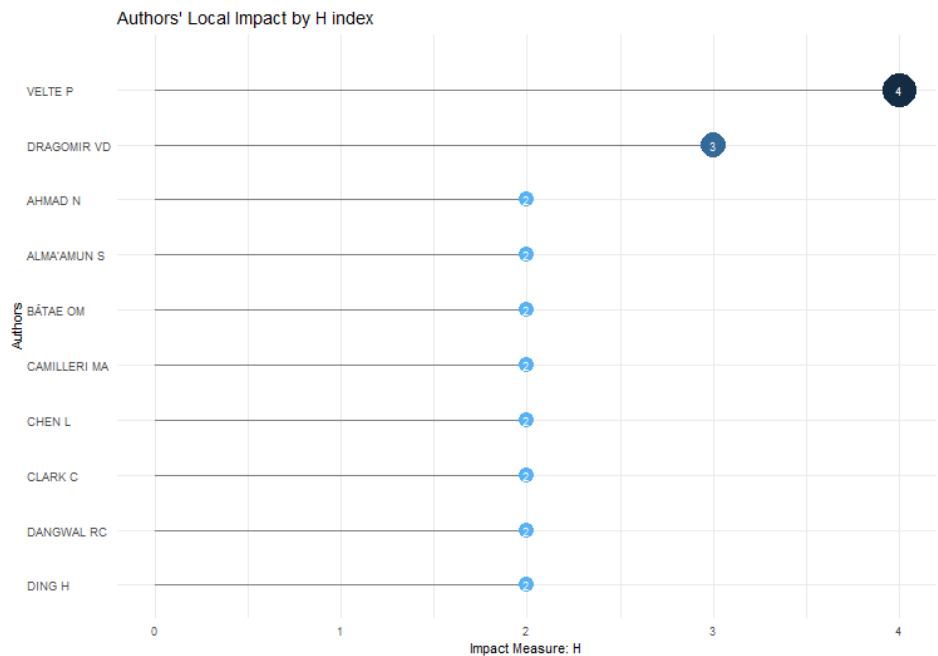


Figure 10. Authors’ local impact by h-index.

Additional insight into the structure of this research community can be found from an analysis of Lotka’s Law. More than 90% of the authors in the dataset contributed only a single publication; this highly skewed distribution indicates that a majority of the scholars in the field are occasional contributors rather than a stable group of specialists. This pattern is characteristic of rapidly developing interdisciplinary fields that attract researchers from multiple academic backgrounds.

Table 12. Author productivity distribution under Lotka’s Law.

Documents written	N. of Authors	Proportion of Authors	Theoretical
1	697	0.9330656	0.70243902
2	46	0.06157965	0.17560976
3	3	0.00401606	0.07804878
4	1	0.00133869	0.04390244

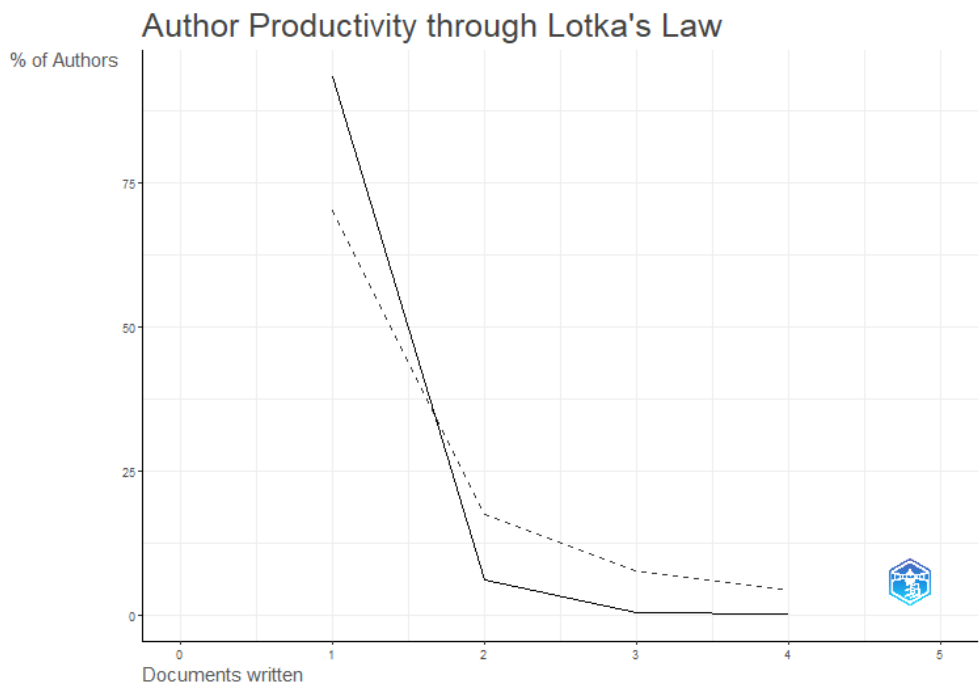


Figure 11. Author productivity distribution through Lotka's Law.

Institutional contributions were similarly distributed, with Bucharest University of Economic Studies and the Faculty of Commerce emerging as the leading affiliations in terms of publication output. Several other universities in the dataset contributed notably to the number of publications, though no single institution dominated the field. This indicates a relatively decentralised research landscape where knowledge production is distributed across numerous institutions rather than concentrated within a small number of elite universities.

Table 13. Most relevant affiliations by number of articles.

Affiliation	Articles
Bucharest University of Economic Studies	7
Faculty Of Commerce	7
Hoseo University	4
Leuphana Universität Lüneburg	4
Universidad De Salamanca	4
Fseg Sfax - Faculté Des Sciences Économiques Et De Gestion De Sfax	3
Gachon University	3
Imam Mohammad Ibn Saud Islamic University	3
L-Università Ta' Malta	3
Lingnan University	3

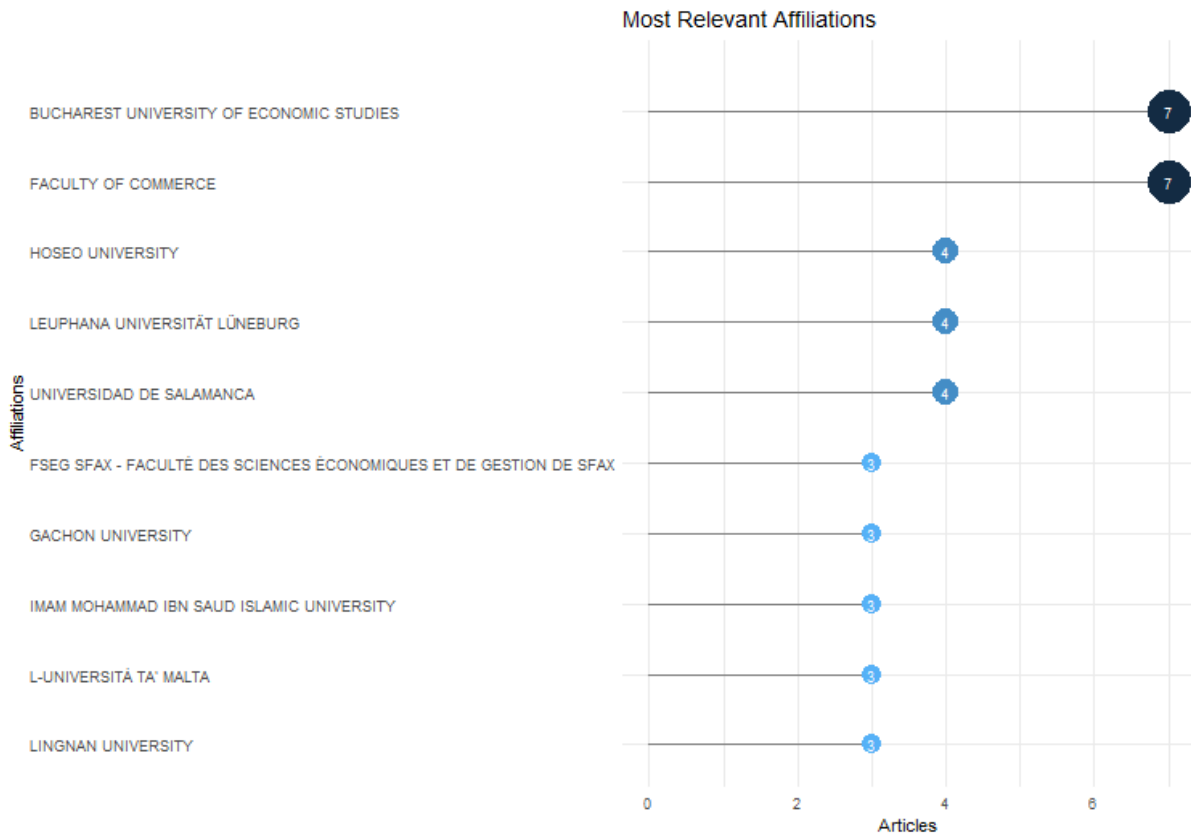


Figure 12. Most relevant affiliations by number of articles.

Analysis of the co-authorship network reveals further evidence of dispersion. Collaboration tends to occur within small, relatively isolated groups. The largest connected component comprised only a small number of scholars, indicating limited international collaboration. This absence of saturated collaborative structures suggests that ESG and financial performance research remains fragmented across institutions and regions. Increased collaboration could signal a pivotal growth opportunity for future development in the field.

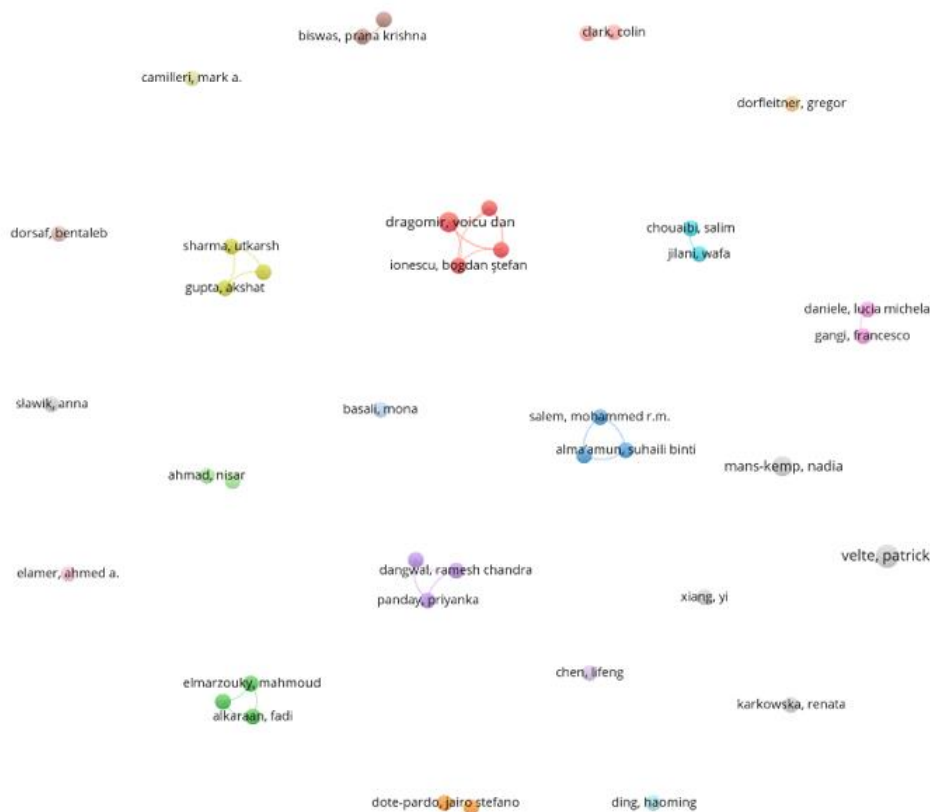


Figure 13. Co-authorship network (VOSviewer).

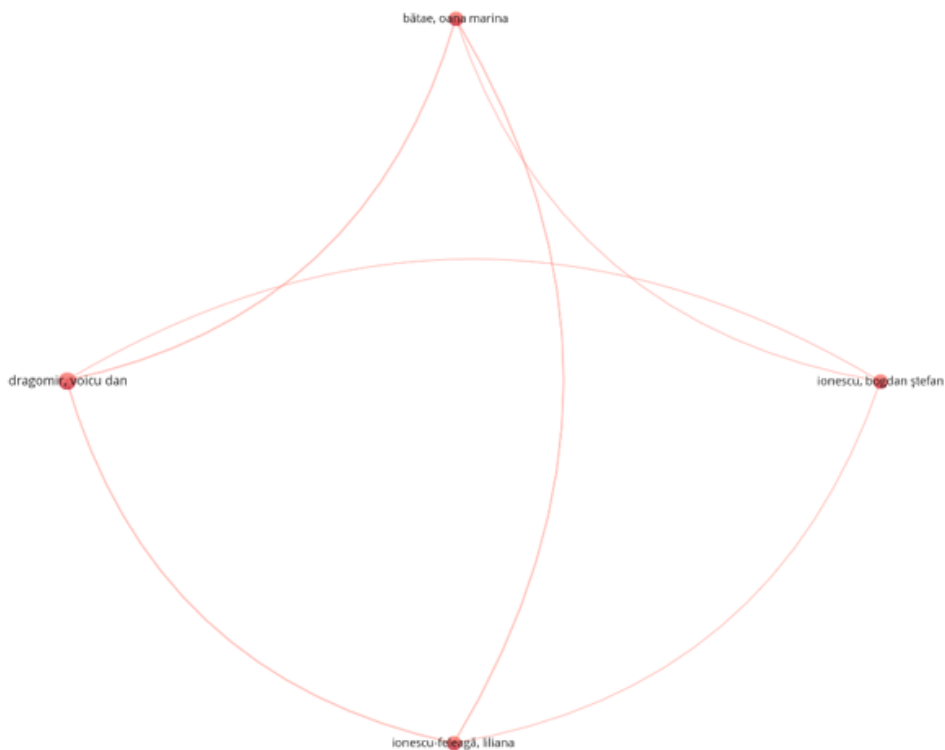


Figure 14. Co-authorship network — largest connected component (detail).

RQ3 – Keyword Analysis and Thematic Clustering

An analysis of keyword co-occurrence was conducted to identify the dominant themes and conceptual relationships within the literature. The resulting network indicated a diverse research landscape visualised as multiple thematic clusters. Together, these clusters illustrate the evolution of ESG research from a narrow focus on sustainability reporting to a broader scope that includes governance, performance, risk management and investment outcomes.

The first major cluster is centred around environmental issues, corporate social responsibility, ESG scores, disclosure practices, and sustainability reporting. This cluster symbolises the fundamental importance of transparency and accountability within ESG research. Literature in this area commonly investigates how firms communicate non-financial information and how stakeholders evaluate corporate sustainability performance.

A second cluster focuses on corporate governance mechanisms and firm performance outcomes. Core concepts included agency theory, board independence, return on assets, Tobin’s Q, and firm value. The significance of these terms emphasises the continued importance of traditional corporate governance theories in explaining ESG-related outcomes. A frequently researched topic is whether governance structures enhance the effectiveness of sustainability initiatives and contribute to improved financial performance.

The third cluster emphasised environmental performance, green innovation, risk management, and advanced econometric analysis. This reflects an increasing interest in understanding how sustainability initiatives influence

the adaptive capacity of an organisation and its long-term competitiveness. The inclusion of green innovation suggests increasing attention to strategic responses to environmental challenges.

Another cluster focused solely on governance quality and ESG disclosure in emerging markets; the most significant themes were transparency, sustainable development goals, and regulatory reform. The presence of this cluster signifies the importance of contextual factors in forming ESG outcomes and emphasises the growing contribution of developing economies to the literature.

Other additional clusters addressed executive compensation, CEO power, stakeholder theory, profitability, gender diversity, responsible investment, machine learning, and corporate sustainability. These topics represent emerging areas of study that expand the scope of ESG research beyond traditional governance and reporting paradigms.

Overall, the keyword network illustrates notable conceptual integration across the field. Strong connections between governance, sustainability reporting, and financial performance suggest that researchers increasingly view ESG considerations as central components of corporate strategy rather than separate ethical concerns. Concurrently, the appearance of themes such as machine learning and green innovation indicates continuing methodological and conceptual development.

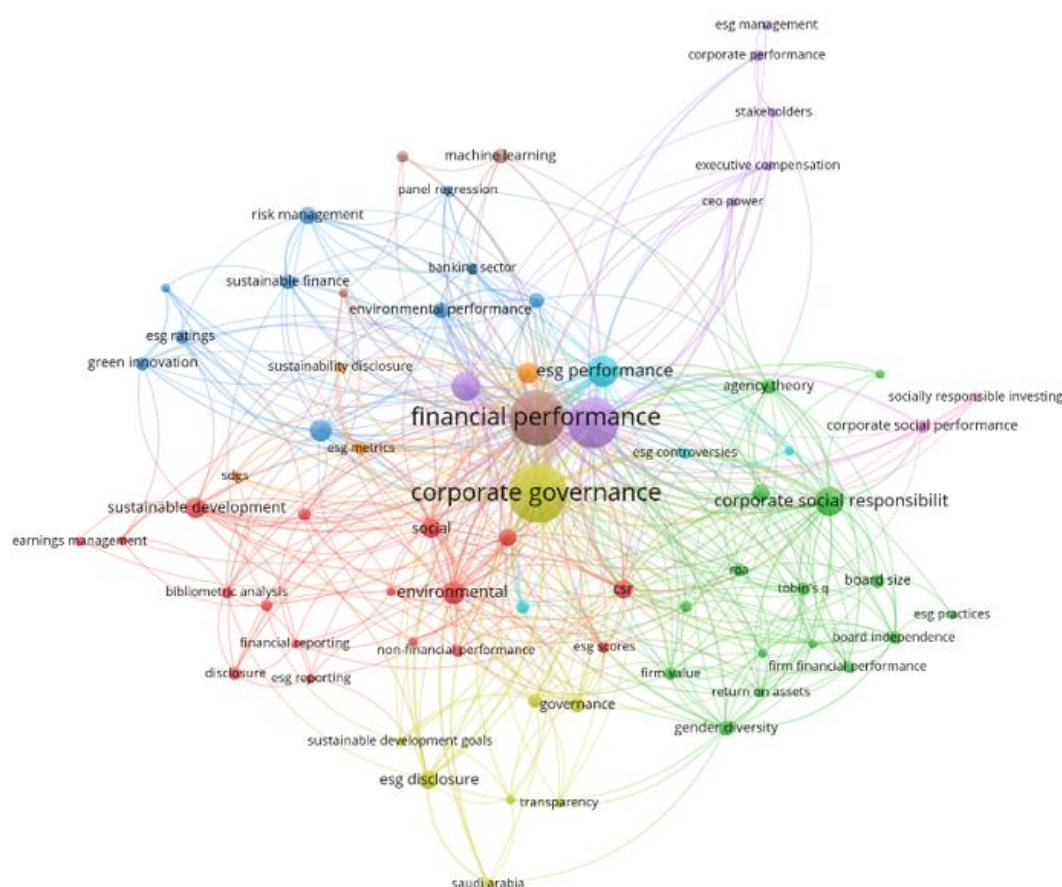


Figure 15. Keyword co-occurrence network (VOSviewer).

Table 14. Keyword clusters and constituent terms.

Cluster	Keywords
1	environmental; sustainable development; social; csr; sustainability reporting; corporate social responsibility (csr); disclosure; bibliometric analysis; esg rating; esg scores; non-financial performance; business ethics; earnings management; esg reporting; esg score; financial reporting; non-financial reporting
2	corporate social responsibility; firm performance; agency theory; gender diversity; board size; board independence; firm value; roa; tobin's q; firm financial performance; integrated reporting; board composition; esg practices; institutional investors; return on assets; sustainability performance
3	corporate financial performance; risk management; environmental performance; social responsibility; sustainable finance; esg ratings; green innovation; banking sector; digital transformation; panel regression
4	corporate governance; esg disclosure; governance; performance; saudi arabia; emerging markets; sustainable development goals; transparency
5	esg; sustainability; corporate performance; ceo power; esg management; executive compensation; stakeholders
6	esg performance; profitability; esg controversies; board gender diversity
7	stakeholder theory; esg metrics; sdgs; sustainability disclosure
8	financial performance; machine learning; corporate sustainability; responsible investment
9	corporate social performance; socially responsible investing

RQ4 – Citation Analysis

Citation analysis revealed a relatively small group of highly influential publications that form the foundational knowledge of the field. Among the studies in the dataset, Velte (2017) was the most highly cited document, indicating its pivotal role in shaping subsequent research on ESG performance and financial outcomes. Other highly cited studies included work by Tan, Yu, Khan, Sassen, and Halbritter. Collectively, these publications established many of the concepts, theoretical frameworks, and empirical methodologies used throughout the literature.

The concentration of citations among a small group of studies indicates the heavy reliance of the field on a core body of scholarship. These foundational documents provide common reference points for researchers examining

ESG disclosure, governance quality, sustainability performance, and financial outcomes. Their continued influence signals their importance in guiding contemporary research programs.

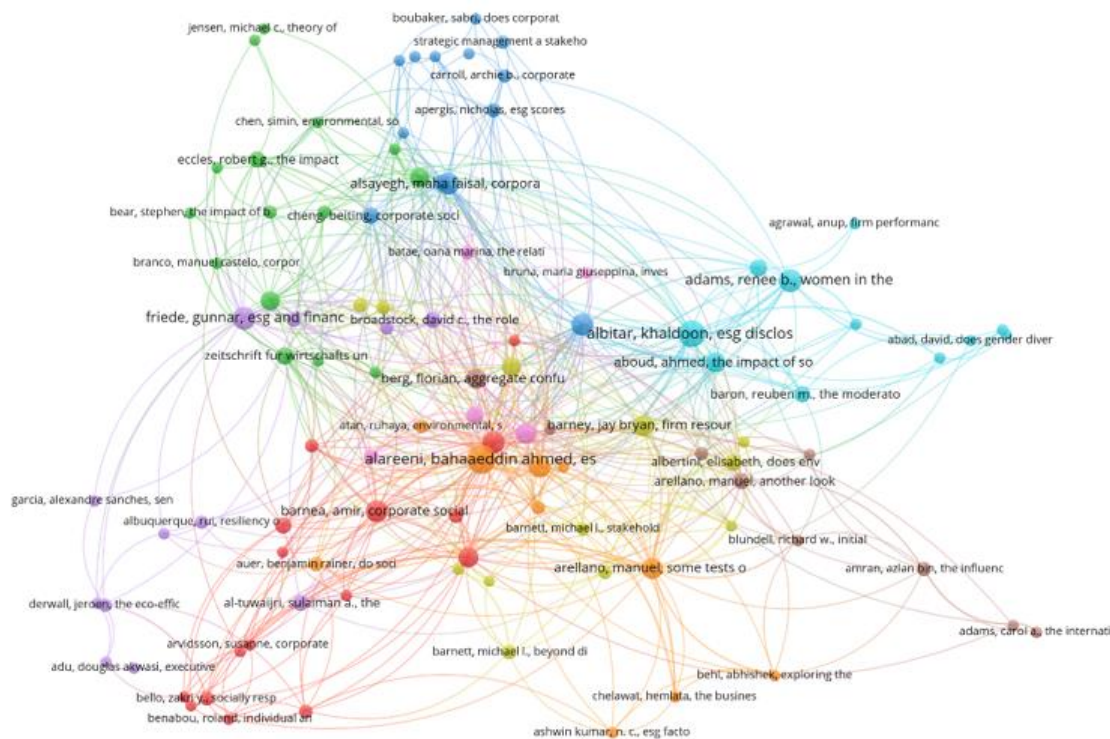


Figure 16. Co-citation network of cited references (VOSviewer).

Despite the presence of highly cited landmark publications, the citation network displayed a fragmented structure. Co-citation analysis revealed relatively weak integration between different areas of research. Studies most often drew upon influential papers and pursued their own specialised investigations within particular sectors, countries or methodologies rather than forming a single cohesive network of literature.

Results of document clustering analysis provide further evidence of fragmentation. Many foundational papers appear as isolated nodes rather than components of large, interconnected clusters. This suggests that even though researchers share common landmark references, they regularly apply these concepts in diverse contexts without creating closely integrated schools of thought. As a result, the field showcases notable thematic diversity and methodological variety.

Overall, citation analysis indicates that ESG and financial performance research possesses solid intellectual foundations but remains highly fragmented. Future research may benefit from greater theoretical integration and forming stronger connections between research streams to create a much more cohesive body of knowledge and literature.

growth was observed in annual output, going from producing literature in single digits before 2018 to 100 articles in 2025 alone. This trajectory reflects a likelihood of tightening disclosure regulation, shifting investor expectations, and a broader acceptance of sustainability as a governance concern rather than a peripheral compliance matter. However, citation patterns tell a slightly different story: average citations per year peaked in 2015 and 2017, at 29.92 and 34.7, respectively, before falling to 1.02 by 2025. This could be explained by citation lag rather than a decline in the relevance of recent work. Together, the four research questions describe a rapidly growing domain in volume of publishing that is concentrated in a small number of countries, institutions and journals, thematically diverse at the keyword level, and still dependent on a small set of early publications for its citation structure.

The keyword co-occurrence network organised the field into nine clusters, including disclosure and reporting practices, governance mechanisms, environmental performance and innovation, executive incentives, and emerging methodological practices such as machine learning. The spread observed is consistent with the pattern acknowledged in the literature review, where stakeholder, legitimacy, resource-based, and agency perspectives are generally applied on their own rather than integrated. It makes an appearance here as well, as each keyword cluster tends to correspond to a separate theoretical vocabulary than the others rather than conform to a shared one. Cluster 9, built around corporate social performance and socially responsible investing, has the earliest average publication years in the network (2019.5 and 2018.3), and “corporate social performance” has the highest average citation count of any keyword in the dataset (160). Even though current publications’ keyword activity has moved toward newer clusters, its earliest terminology can be placed towards the centre of its citation structure. The co-citation network also points in a similar direction, with a small number of early documents including Velte (2017), Sassen and colleagues (2016) and Halbritter and Dorfleitner (2015), recurring across studies, yet the network as a whole remains fragmented. These documents are cited alongside each other in isolated groups rather than forming an integrated core. This suggests the field would benefit more from studies that combine external, legitimacy-based explanations of why firms disclose ESG information with internal, resource-based explanations of how that disclosure translates into performance, than from further single-theory tests of either in isolation.

For field experts, investors and regulators, the saturation of the keywords around independence, board gender diversity, audit committee characteristics and CEO power suggests that rather than ESG disclosure by itself, governance quality is where the relationship with financial performance is most recurrently reported in underlying studies. Operating boards under weak disclosure oversight could lead them to gain less from ESG reporting than if it were to be paired with the governance mechanisms shown throughout this literature. For regulators in emerging markets, which now account for a notable share of the dataset, China and India specifically, this could indicate a need for the development of institutional infrastructure, including audit committee standards and sustainability committee requirements. This gives ESG disclosure the integrity it needs to be considered by investors and reflected in the performance outcomes this literature examines.

The scope of the underlying search and analysis binds the conclusions drawn here. The corpus was drawn from a single database, Scopus, using one Boolean search string on one search date; this now excludes work indexed only in other databases and may underrepresent non-English-language publications. Journal concentration is another related concern. Sustainability (Switzerland) accounts for 37 of 274 documents (13.5%), so the thematic composition of the literature in the dataset may be influenced by the outlet’s specific editorial scope in ways that are not fully captured by keyword or citation analysis. The citation, co-citation, co-authorship, and keyword networks were each constructed by applying threshold filters, only including documents with at least 15 citations, authors with at least two publications, and keywords occurring at least three times. Hence, themes and contributors below these thresholds are underrepresented in the network visualisations produced; this includes much of the 2024 to 2026 output. Citation-based indicators are characteristically biased towards older publications, a problem the results section addresses directly, and one any later replications of this analysis would need to revisit.

Three of the four research questions indicate the same underlying problem: research activity in this field is expanding faster than its collaborative and theoretical frameworks. The largest connected component of the co-authorship network includes only four author pairs, and Lotka’s Law analysis found that 697 of the 747 authors analysed (93.3%) produced only one publication, a pattern consistent with the law itself. These results are indicative of a research community largely built around short-lived projects rather than long-term collaborative programs. Future work would benefit from intentional cross-country and cross-institutional collaboration, specifically between countries that currently dominate the dataset. China, India, and the United Kingdom, and the African and Latin American economies are largely absent from it despite operating under governance and disclosure systems that differ from those already studied.

Both the keyword structure of the corpus as well as the broader literature it summarises is continually dominated by the composite ESG score, despite recurring evidence that the environmental, social and governance pillars relate to financial performance in different directions and at different strengths. Separate pillar-level analysis paired with techniques able to detect nonlinear or structural ties such as threshold regression or fsQCA tests would help resolve the mixed findings the literature has produced so far better than linear and symmetric specifications that remain standard.

Because each keyword cluster identified maps closely onto a distinct theoretical tradition, studies that combine stakeholder or legitimacy accounts of why disclose with resource-based or dynamic-capability explanations of how ESG engagement translates into financial performance could help bridge the theoretical gaps across the keyword and co-citation networks. Measurement persists as a constraint on studies’ comparability due to score divergence between providers, paired with the high correlation between composite ESG scores and the environmental pillar; specifically, knowing whether a given finding indicates an underlying ESG effect or if it was caused by how ESG was scored becomes difficult. Wider use of the identification strategies already appearing in recent studies, including system GMM, instrumental variables and panel vector autoregression, together with clearer reporting of which rating provider and methodology is used for a given ESG score, would improve the comparability of future estimates.

Green innovation and machine learning are two themes that should receive closer attention as the field develops. Green innovation keywords carry an average citation count of 118.8 against an average publication year of 2023.7; this indicates the topic is attracting attention disproportionately to its relatively short history in the field. Additionally, machine learning, as a distinct cluster, has an average publication year of 2023.9; this points to a shift toward predictive and text-based approaches to ESG measurement that were seldom present in the field before 2022. Because citation counts of more recent publications, 2023 to 2026, remain low due to citation lag rather than lack of relevance, a replication study of the dataset in three to five years would give better insight into how these recent thematic developments are eventually accepted by the field.

Put together, the analysis signals a field with a solid and frequently cited intellectual core, but a research community that remains fragmented across keyword clusters, concentrated in a small number of countries only loosely connected by its citation and co-authorship networks. Addressing these patterns through broader collaboration, pillar-level and nonlinear analysis, closer theoretical integration and more transparent measurement would not change the basic finding that governance quality and ESG performance relate to firm outcomes, but it would help clarify the conditions under which that relationship holds and the mechanisms through which it operates.

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