

Mapping the evolution of ESG research in the retail sector: A bibliometric and conceptual analysis

Irina Puiu¹, Daniel Șoldan² Cornelius Seciu³ and Liviu Purcărea⁴

¹ Faculty of Agrifood and Environmental Economics, Bucharest University of Economic Studies, Bucharest, Romania, ORCID: 0009-0002-9667-7085

² Faculty of Agrifood and Environmental Economics, Bucharest University of Economic Studies, Bucharest, Romania, ORCID: 0009-0008-7000-7730

³ Faculty of Agrifood and Environmental Economics, Bucharest University of Economic Studies, Bucharest, Romania, ORCID: 0009-0007-9302-9687

⁴ Faculty of Agrifood and Environmental Economics, Bucharest University of Economic Studies, Bucharest, Romania, ORCID: 0009-0002-4569-7916

E-mail: puiuirina19@stud.ase.ro

Abstract. This study provides a comprehensive bibliometric assessment of the scientific literature on “ESG retail” published between 2011 and 2024, mapping the field’s conceptual evolution, thematic consolidation, and emerging research directions. Using the Web of Science Core Collection and VOSviewer for keyword co-occurrence analysis, the investigation reveals that ESG retail has transitioned from an underdeveloped topic into a mature interdisciplinary domain shaped fundamentally by the European sustainable-finance regulatory framework. The analysis identifies a coherent tripartite structure centred on: corporate performance and sustainability evaluation; investor behaviour and ethical investment motivations; and informational integrity, disclosure quality, and greenwashing risk. The chronological progression of concepts demonstrates a clear shift from early ethical considerations to methodological standardisation, disclosure consolidation and governance-oriented perspectives following the adoption of SFDR, EU Taxonomy, MiFID II, CSRD and ESRS. The findings confirm that ESG retail constitutes a stable and integrated analytical ecosystem aligned with SDG 8, SDG 12 and SDG 16, with research increasingly oriented toward materiality assessment, data comparability and sustainability-reporting governance. The study also highlights the replicability of the bibliometric model and acknowledges methodological limitations arising from database selection and keyword constraints.

Keywords: *ESG retail, bibliometric analysis, VOSviewer, corporate performance, sustainability, governance, investment behavior, SDG.*

Introduction

The evolution of sustainability principles in the economic and financial sphere has developed along a historical trajectory that begins with the consolidation of the European single market and culminates in the contemporary architecture of ESG regulation. At the same time, the gradual diffusion of sustainability principles also began to shape ESG practices within the retail sector, where transparency, consumer trust, and responsible market conduct became increasingly relevant. The foundational moment is represented by the Treaty of Rome of 1957, which established the European Economic Community and laid the institutional bases for the free movement of goods, services, capital, and people, principles that would later support the emergence of unified consumer and investor markets across the Union [1][2][3]. Subsequent milestones, such as the Single European Act of 1986, further advanced market integration and strengthened the regulatory and political dimension of European cooperation [4][5][6].

The Maastricht Treaty of 1992 institutionalized economic convergence and deepened the Union's governance architecture [7][8], while the Treaty of Lisbon of 2007 introduced a modernized legal and policy framework designed to enhance transparency, democratic accountability, and consumer protection within the internal market [9][10]. These successive treaties created the structural conditions through which sustainability, financial ethics, and retail investor protection would eventually be integrated into European law.

Building on these foundations, the EU introduced an extensive regulatory framework that redefined transparency, reporting, and investor protection. The adoption of the Sustainable Finance Disclosure Regulation (SFDR) in 2019 brought mandatory sustainability-related disclosure rules for financial intermediaries, creating unprecedented transparency in ESG communication [11]. The 2020 EU Taxonomy Regulation established a unified classification system for environmentally sustainable economic activities, providing a technical basis for evaluating financial products marketed to retail clients [12]. In parallel, MiFID II was amended in 2021 to incorporate sustainability preferences into suitability assessments, thereby integrating ESG considerations directly into investment advice and portfolio construction processes [13][14]. Corporate sustainability reporting reached a new level of standardization with the Corporate Sustainability Reporting Directive (CSRD) in 2022, followed by the introduction of the European Sustainability Reporting Standards (ESRS) in 2023, which impose granular disclosure obligations relevant for both retail and institutional stakeholders [15][16]. Moreover, retail investors were further protected by the PRIIPs framework (Regulation 1286/2014 and its 2021 amendments), designed to ensure clear, comparable, and non-misleading information regarding packaged retail and insurance-based investment products [20][21][22][23]. The most recent development, the 2023 Retail Investment Strategy, explicitly centers retail investors within EU capital markets, aiming to enhance trust, transparency, and fair treatment in the distribution of sustainable financial products [17][18][19].

The contemporary consolidation of ESG principles in the retail investment ecosystem emerged in response to growing global awareness regarding environmental and social risks, influenced strongly by the 1987 Brundtland Report on sustainable development [24] and the adoption of the 2030 Agenda for Sustainable Development [25]. At the international level, the Sustainable Development Goals established in 2015 provide a normative framework that is closely aligned with the objectives of ESG-related regulation [26]. Within this context, SDG 8 (Decent Work and Economic Growth), SDG 12 (Responsible Consumption and Production), and SDG 16 (Peace, Justice and Strong Institutions) are directly relevant for the retail investment domain [27][28][29]. Together, they emphasize financial literacy, responsible market conduct, transparency, and institutional integrity, dimensions that underpin the emerging field of "ESG retail". Thus, the global normative context has reinforced the EU's orientation toward sustainable finance and the need to restructure economic practices around environmental responsibility, social fairness, and governance quality.

Within this evolving regulatory landscape, academic literature has increasingly recognized "ESG retail" as a distinct interdisciplinary field positioned at the intersection of sustainability, investment behavior, ethical communication, and market regulation. While early studies primarily examined environmental and operational aspects of retail activity, contemporary research explores deeper structural questions regarding investor motivations, information asymmetries, greenwashing risks, and the governance mechanisms underlying sustainable investment practices. This transformation has elevated ESG from a voluntary reporting framework to a strategic orientation embedded in consumer protection, disclosure obligations, and financial decision-making processes.

Accordingly, the present study seeks to provide a comprehensive bibliometric mapping of the "ESG retail" domain, assessing its conceptual evolution, thematic structure, and research trajectories. To achieve this, the analysis is guided by three core research questions: *RQ1: How has the scientific literature on ESG retail evolved conceptually and temporally between 2011 and 2024?*; *RQ2: What thematic clusters define the intellectual structure of the field, and how are sustainability, governance, and investor behavior interconnected?*; *RQ3: To what extent do the emerging themes reflect the dynamics of the European regulatory framework and the global sustainability agenda?*

Through these questions, the study positions ESG retail as a mature and expanding research field shaped simultaneously by historical institutional development, contemporary regulatory consolidation, and the global transition toward responsible and transparent financial markets.

Literature review

The literature on ESG in the retail sector has experienced accelerated development over the past decade, consolidating three major directions of evolution: operational transformation and strategic orientation through sustainability, the strengthening of transparency and corporate governance, and the behavioral dynamics of retail investors in relation to ESG information. These directions reflect both the conceptual maturation of the field and the intensification of normative, technological, and investment pressures that are redefining the structure and functioning of the contemporary retail sector.

The first direction highlights the way sustainability has become a central element of retail transformation. The foundations were established through analyses of environmental strategies and measurement instruments used by companies (Naidoo & Gasparatos, 2018) [30], later expanded through operational approaches regarding supply chain optimization and the integration of sustainable criteria into logistics flows (Sobie & Roberson, 2020) [31]. In parallel, the literature has shown that retail uses ESG not only as an efficiency tool but also as a mechanism for shaping consumer perception through coordinated corporate, product, and store-level strategies (Elg & Welinder, 2022) [32]. Consumer behavior studies demonstrate that eco-friendly initiatives influence perceived credibility, loyalty, and purchase intention (Vaitinadin, 2019 [33]; Song et al., 2024 [34]). Houston, Lin, Shan, and Shen (2023) [35] showed that ESG factors directly influence consumer preferences and behavior. Moreover, private labels play a central role in implementing ESG objectives, offering control over traceability and environmental performance (Ghiselli, 2022) [36]. Kaur and Siddhey (2025) [37] developed a concise framework for analyzing how retail companies integrate sustainability into their practices. Applied studies confirm that ESG can generate competitive advantage, both in case analyses (Mi, 2024) [38] and in global performance evaluations (Buallay, 2022) [39], while international documents provide additional clarification on the taxonomies and standards used in defining financial sustainability (OECD, 2020) [40][41].

The second major direction concerns transparency, governance, and the credibility of ESG information, a domain marked by structural challenges. Research shows considerable variation in CSR reporting quality in retail (Mayorova, 2019) [42], as well as significant discrepancies between ESG scores provided by different rating agencies, with direct implications for greenwashing risk (Kathan et al., 2025) [43]. The ESG transformation process requires phased transparency to ensure the credibility of internal changes (Bataeva, 2024) [44], yet independent reports indicate high levels of non-compliance in the claims of European retail funds (Sustainable Finance Observatory, 2020) [45]. Alamillos and de Mariz (2022) [46] highlighted that EU ESG regulations produce extraterritorial effects and influence global firms through value-chain pressures. Baicu et al. (2022) [47] showed that retail managers perceive the Green Deal both as an opportunity and as a financial and operational pressure. Against this background, legal assessments underscore increasing litigation risks, increasingly strict requirements for ESG statement accuracy, and pressures on supply chains (Hoffmann & Fraser, 2023) [48]. Convergently, technical and consulting sources show that most companies are unprepared for the wave of new reporting obligations due to gaps in data infrastructure, internal controls, and operational capacity (PwC, 2023 [49]; KPMG, 2023 [50]; Columbus Global, 2024 [51]). Sectoral assessments confirm these deficiencies, outlining the material risks specific to the retail industry (S&P Global Ratings, 2020) [52] and emphasizing the urgent need for digitalization and automation of ESG processes (Morrison & Sehgal, 2024) [53].

The third direction focuses on the behavior of retail investors, an area of research that has grown substantially in recent years. International data show that interest in ESG varies across countries, and many investors still lack sufficient information (GlobeScan, 2021) [54]. Retail investors in Central and Eastern Europe, as shown by the Polish case, express interest in ESG but few are willing to apply it when it implies reduced profits (Petelczyc, 2022) [55], whereas in Germany preferences are segmented based on ethical motivations, risk perception, and financial expectations (Heidorn et al., 2023) [56].

Retail investors consider ESG increasingly relevant, their values being correlated but difficult to satisfy through uniform measures, and some of them accept return trade-offs to support their principles. Recent literature shows that ESG disclosures do not generate detectable reactions from retail investors (Moss et al., 2023) [57]. However, other studies suggest that retail investors react to ESG information only when they perceive it as relevant for corporate financial performance (Li et al., 2024) [58]. Individual investors respond to ESG only when the information is presented in a simplified format, such as ESG rankings, which stimulate their attention and trading volume (Bazrafshan, 2023) [59], and Deka et al. (2023) [60] show that behavioral biases and risk perception significantly influence ESG decisions. Recent behavioral experiments show that nudges can increase investment engagement (Hutchings, 2025) [61], and the introduction of the “Future Generations” pillar shows that retail investors perceive intergenerational concerns as already embedded in the existing ESG structure (Benuzzi et al., 2024) [62].

Overall, these three directions illustrate the convergence between operational sustainability, corporate transparency, and investor behavior, confirming that the retail sector is profoundly shaped both by the conceptual evolution of the ESG literature in retail and by normative pressures and the global dynamics of sustainability.

Materials and Methods

The database was searched in the Web of Science Core Collection, which was selected due to its rigorous indexing standards and comprehensive coverage of high-impact scholarly publications, ensuring that the resulting dataset provides a reliable, consistent, and methodologically robust foundation for bibliometric analysis. The search used the phrase “ESG retail” in the “Topic” field to identify publications that examine the relationship between sustainability principles and the retail sector. The acronym ESG, referring to the environmental, social and governance dimensions of sustainability, is widely employed in academic and policy discourse to describe the overarching framework through which organisational responsibility is conceptualised. Applied to the retail sector, this framework delineates an expanding area of research concerned with how sustainability initiatives, investor preferences and transparency requirements interact within retail-oriented activities.

The initial search yielded 102 records. A systematic series of filters was then applied to ensure analytical consistency. Using the “Final Publication Year” indicator, records from 2025 were excluded due to ongoing indexing processes. Within the “Document Types” filter, only *Articles*, *Review Articles* and *Proceedings Papers* were retained to avoid heterogeneity generated by alternative formats. To maintain terminological consistency and facilitate comparability, only English-language publications were included. Applying these criteria resulted in a final chronological interval of 2011–2024, corresponding to the earliest relevant entries and the most recent year fully indexed in the database.

The refined dataset consisted of 62 publications, which were exported in plain-text format (Full Record and Cited References) and subsequently processed using VOSviewer (version 1.6.20), a dedicated bibliometric mapping software used to visualise thematic linkages and structural patterns within the field. The analysis employed a keyword co-occurrence method, with “All Keywords” selected as the analytical unit and the “Full Counting” method used to assign equal weight to each occurrence of a term. This methodological configuration was chosen because co-occurrence mapping enables the identification of thematic structures across the field, revealing conceptual linkages and highlighting the evolution of research trajectories related to ESG considerations in the retail sector.

Of the 358 keywords initially extracted, terms with fewer than five occurrences were excluded to minimise analytical distortion and enhance the interpretability of the resulting clusters. The threshold was established following preliminary assessments indicating that this cut-off produced the most stable and analytically coherent network configuration. The final set of 11 recurrent keywords formed the conceptual core of the field, enabling the delineation of its principal thematic areas. The bibliometric visualisations generated through VOSviewer illustrated the internal structure of the ESG retail research domain, reflecting its ongoing consolidation, diversification and maturation.

Limitations of the study

This analysis is shaped by several methodological limitations that result from the choices made in the stage of constructing the dataset and in the bibliometric processing. The exclusive reliance on the Web of Science Core Collection, selected for its rigorous indexing standards, directly limits the volume and variety of literature available for analysis. Studies indexed on other platforms such as Scopus or Google Scholar are not included in the dataset, which means that the scientific landscape regarding ESG practices in the retail sector is reflected exclusively through the perspective offered by this database. In addition, the use of the expression “ESG retail” in the “Topic” field anchors the search in a specific conceptual formulation. Works that use alternative terms or related concepts may not have been identified, influencing the way in which the thematic profile of the set is shaped.

The filtering procedures applied contribute, in turn, to the limitations of the study. The use of the “Final Publication Year” field ensured temporal coherence but led to the exclusion of 2025 publications still in the indexing process. The exclusive selection of articles, review articles, and conference proceedings provided methodological homogeneity, but eliminated types of publications that could bring complementary perspectives. The strict focus on English-language literature, necessary for maintaining terminological consistency, introduces a linguistic limitation that may exclude contributions that analyse ESG dynamics in retail markets where English is not the predominant publishing language.

The bibliometric analysis presents certain limitations as well, since the use of VOSviewer as mapping software, although it offers a solid framework for the visualization of thematic relationships, tends, through its mode of operation, to give greater visibility to terms that appear frequently. The approach based on the co-occurrence of keywords, using “All Keywords” and the “Full Counting” method, assigns the same weight to each occurrence, but ends up highlighting dominant concepts and diminishing the visibility of emerging themes. The minimum threshold of five occurrences, established following preliminary evaluations, increases the stability of the resulting network but leads to the exclusion of low-frequency terms that could signal emerging research directions in the ESG retail field. Thus, the 11 keywords describe only the dominant themes in the selected literature, without covering the entire diversity of studies that analyse ESG in the retail sector.

Results and discussion

The integrated analysis of the literature confirms that “ESG retail” has emerged as a distinct and mature field, shaped by the accelerated transformations of the European sustainable-finance framework and by the visible increase in academic interest after 2020. From a temporal perspective, the field has evolved from a marginal area into a stable research domain, consolidated as reporting obligations and transparency requirements intensified (1). The most highly cited contributions show that ESG has become the central instrument through which corporate performance, investor behaviour, and the credibility of sustainability information are analysed, confirming the theoretical maturation of the field (2). The thematic structure highlights a coherent architecture composed of three pillars: corporate performance and sustainability, behavioural dynamics of investors, and communication integrity, which reflects the convergence between academic research, European regulations, and the objectives of SDG 8, SDG 12, and SDG 16 (3).

The evolutionary analysis shows a clear transition from isolated ethical concerns to the systematic integration of ESG in investment decisions and governance mechanisms, culminating in the standardisation of reporting and the consolidation of institutional responsibility (4). The density structure confirms the centrality of ESG within the conceptual field and indicates emerging directions linked to materiality, comparability, and the governance of sustainability data, elements essential for the functioning of retail-oriented financial markets (5).

Overall, the field is configured as a stable interdisciplinary ecosystem situated at the intersection of corporate performance, investor behaviour, and informational transparency, being strengthened simultaneously by normative pressures, global sustainability orientations, and the progressive maturation of the analytical framework in the specialised literature.

1. Temporal evolution and conceptual emergence of ESG retail

The evolution of publications on “ESG retail” between 2011 and 2024, presented in Figure 1, shows a clear upward trend after 2019, when the first effects of the Sustainable Finance Disclosure Regulation (SFDR) (Regulation (EU) 2019/2088) became visible, reflected in 2 publications. The rise observed in 2020, with 4 publications, corresponds to the establishment of the sustainable investment framework under the EU Taxonomy (Regulation (EU) 2020/852), while the dynamic recorded in 2021, with 1 publication, is linked to the integration of ESG criteria through the Markets in Financial Instruments Directive (MiFID II) (Regulation (EU) 2021/1253). The significant growth recorded in 2022 and 2023, with 9 and 14 publications respectively, is associated with the implementation of the Corporate Sustainability Reporting Directive (CSRD) (Directive (EU) 2022/2464) and the adoption of the European Sustainability Reporting Standards (ESRS) (Regulation (EU) 2023/2772). The sharp increase culminating in 2024, with 30 publications signalling the maturation of the field, indicates that EU reporting regulations have significantly stimulated academic interest in ESG retail.

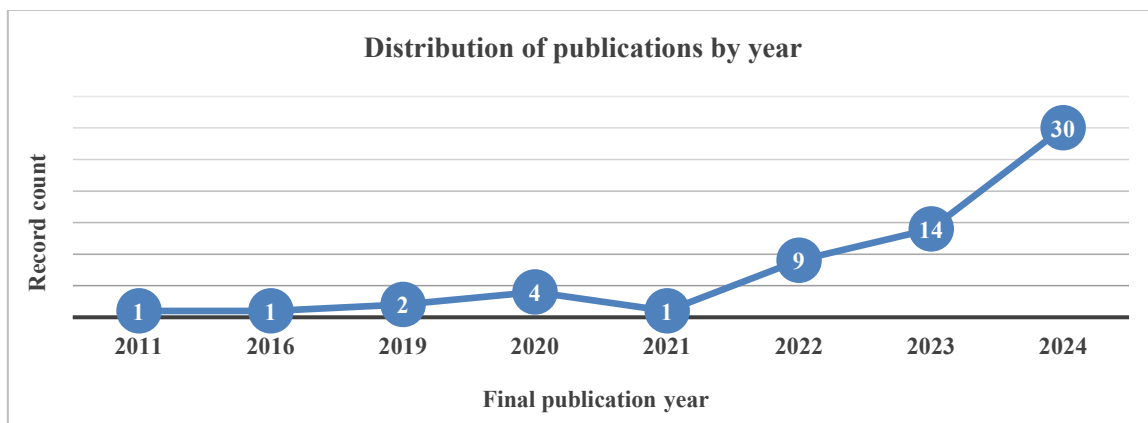


Figure 1. Distribution of publications by year on “ESG retail” (2011-2024)

Source: Authors’ own research results.

2. Citation impact, influential contributions, and the consolidation of the field

Table 1 synthesizes the most influential contributions to the “ESG retail” field during 2011–2024. The first three studies define the dominant conceptual directions: “Do Responsible Investors Invest Responsibly?” (Gibson Brandon et al., 2022; 108 citations) [63] highlights the discrepancies between stated ESG commitments and their actual reflection in portfolio composition; “Sustainable Finance and Fintech: Can Technology Contribute to Achieving Environmental Goals? A Preliminary Assessment of ‘Green Fintech’ and ‘Sustainable Digital Finance’” (Macchiavello & Siri, 2022; 105 citations) [64] shows that emerging tools in sustainable finance can enhance the transparency and reliability of ESG information; and “Corporate ESG rating and stock market liquidity: Evidence from China” (He et al., 2023; 64 citations) [65] demonstrates that firms with stronger ESG performance exhibit superior stock market liquidity.

Complementary studies reinforce the theoretical architecture of the field: Busco et al. (2020) [66] examine the materiality and financial relevance of ESG disclosures; Sood et al. (2023) [67] analyze how investors prioritize sustainability criteria; Lee, Pak, and Roh (2024) [68] investigate how institutional pressures and digitalization capabilities shape ESG strategy and triple bottom line performance; Diouf, Hebb, and Touré (2016) [69] explore the drivers of socially responsible retail investment decisions; Martini (2021) [70] traces the conceptual evolution of responsible investing within the EU sustainability framework; Carlsson Hauff and Nilsson (2022) [71] assess investor perceptions of ESG mutual fund strategies; and Zhang et al. (2024) [72] evaluate the effects of ESG ratings on trading activity.

Taken together, these studies confirm the consolidation of ESG as a mature research domain that is central to understanding investor behavior, market dynamics, and the ongoing transformation of the retail sector.

Table 1. Top 10 most-cited articles in the “ESG retail” dataset (2011–2024)

No.	Title	Authors	Total Citations	Average per Year
1	Do Responsible Investors Invest Responsibly?	Brandon, Rajna Gibson; Glossner, Simon; Krueger, Philipp; Matos, Pedro; Steffen, Tom	108	27
2	Sustainable Finance and Fintech: Can Technology Contribute to Achieving Environmental Goals? A Preliminary Assessment of 'Green Fintech' and 'Sustainable Digital Finance'	Macchiavello, Eugenia; Siri, Michele	105	26,25
3	Corporate ESG rating and stock market liquidity: Evidence from China	He, Feng; Feng, Yaqian; Hao, Jing	64	21,33
4	A Preliminary Analysis of SASB Reporting: Disclosure Topics, Financial Relevance, and the Financial Intensity of ESG Materiality	Busco, Cristiano; Consolandi, Costanza; Eccles, Robert G.; Sofra, Elena	60	10
5	How does an investor prioritize ESG factors in India? An assessment based on fuzzy AHP	Sood, Kirti; Pathak, Prachi; Jain, Jinesh; Gupta, Sanjay	55	13,75
6	The interplay of institutional pressures, digitalization capability, environmental, social, and governance strategy, and triple bottom line performance: A moderated mediation model	Lee, Min-Jae; Pak, Anna; Roh, Taewoo	50	25
7	Exploring Factors that Influence Social Retail Investors' Decisions: Evidence from Desjardins Fund	Diouf, Dominique; Hebb, Tessa; Toure, El Hadji	49	4,9
8	Socially responsible investing: from the ethical origins to the sustainable development framework of the European Union	Martini, Alice	40	8
9	Is ESG mutual fund quality in the eye of the beholder? An experimental study of investor responses to ESG fund strategies	Hauff, Jeanette Carlsson; Nilsson, Jonas	33	8,25
10	Do ESG ratings improve capital market trading activities?	Zhang, Chunqiang; Hao, Dayu; Gao, Lu; Xia, Fan; Zhang, Linlang	31	15,5

Source: Authors' own research results.

3. Thematic clusters and the structural architecture of ESG retail research

The bibliometric analysis of the literature on “ESG retail”, illustrated in **Figure 2**¹, reveals a structured thematic network organized into three major clusters, each representing a distinct analytical dimension of the field. The numbers indicate the frequency of term occurrences. The visualization generated with VOSviewer shows that ESG retail develops along three core directions: corporate performance, investor behavior and ethical orientation, and information transparency, reflecting strong coherence between

¹ The analysis was normalized by “association strength” using standard layout parameters (attraction = 2, repulsion = 0), with a clustering resolution of 1.00 and a minimum cluster size of 1. The “Merge small clusters” option was enabled to prevent network fragmentation. Visualization was weighted by “occurrences” (size = 1.21), with labels displayed as “frames” (font “Open Sans”, size 1.00, maximum 35 characters) to enhance clarity and thematic coherence. Connections between terms were represented by “colored lines”, applying a minimum strength threshold of 0 and a maximum of 1000 connections, while the size variation parameter was set to 1.00.

academic research, the EU’s sustainable finance reforms (SFDR, EU Taxonomy, MiFID II, CSRD, ESRS) and the Sustainable Development Goals, particularly SDG 8, SDG 12 and SDG 16.

Representing the strategic and performance-oriented dimension of ESG retail, *the red cluster* highlights the central role of ESG criteria in evaluating organizational legitimacy and competitive positioning. It is defined by terms such as “ESG” (21), “performance” (21), “impact” (16), “corporate social-responsibility” (10) and “sustainability” (8). These concepts underline the transition toward standardized sustainability assessment, consistent with the EU Taxonomy, ESRS disclosure requirements and SDG 8, which emphasize responsible corporate performance and long-term value creation.

Reflecting the behavioral and ethical dimension of ESG, *the green cluster* focuses on investor motivations and value-based investment preferences. The presence of “socially responsible investment” (7), “individual investors” (5) and “behavior” (5) illustrates growing academic attention to moral reasoning, perceived risk and ethical commitment. This thematic area aligns with the MiFID II sustainability-preferences regime and is consistent with SDG 12, which promotes informed and ethically grounded consumer and investment choices.

Illustrating the informational and reputational dimension, *the blue cluster* emphasizes the importance of transparent communication for the credibility of sustainable financial products. Structured around “retail investors” (13), “disclosure” (5) and “greenwashing” (5), this cluster reflects concerns about reporting integrity and misleading sustainability claims. It resonates with the disclosure obligations under SFDR, the new European anti-greenwashing guidelines and SDG 16, which foreground transparency, accountability and institutional trust.

Overall, these three clusters define a coherent conceptual structure of the ESG retail field, illustrating its evolution from corporate sustainability performance (red), to ethical investment behavior (green), and transparency and reporting integrity (blue). Together, they confirm the integrated, regulation-driven and SDG-aligned nature of ESG dynamics within the contemporary retail investment landscape.

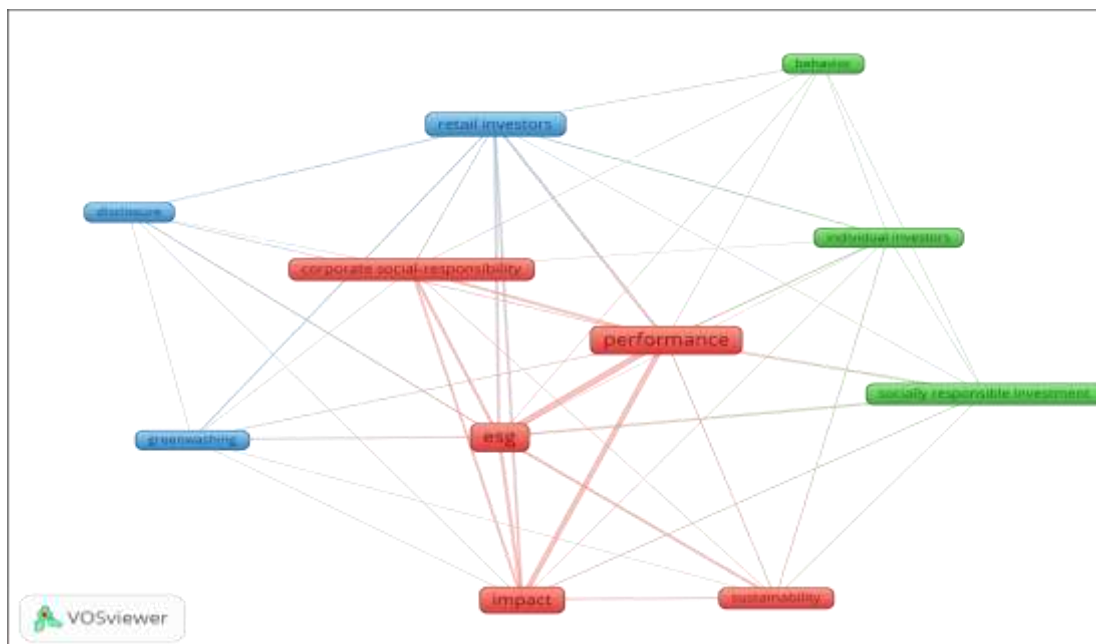


Figure 2. Network visualization of thematic mapping in VOSviewer based on keyword analysis of “ESG retail”

Source: Authors’ own research results.

4. Evolutionary dynamics and the chronological progression of ESG retail concepts

Figure 3² illustrates the evolution of concepts associated with “ESG retail” during the period 2020–2024, through the overlay visualization generated in VOSviewer. The network presents a dense ensemble of keywords whose spatial proximity and chromatic gradation reflect both the conceptual coherence and the chronological progression of the field. The color spectrum, from cool tones (2020–2022) to warm tones (2023–2024), encodes the average publication year and allows for a clear observation of the evolutionary trajectory of research on ESG within the retail investment environment. The central terms: “ESG”, “corporate social-responsibility”, “performance”, “impact”, “retail investors”, form the conceptual core of the field, indicating that ESG has become an integrative framework that unites the ethical, managerial, and communicational dimensions of retail investments, consistent with the sustainability vision advanced through SDG 12 and SDG 8.

The first thematic elements associated with the year 2021, such as “*socially responsible investment*” and “*behavior*”, indicate an incipient phase focused on ethical motivations and the psychological foundations of investment decisions. This early emergence aligns with the growing international emphasis on responsible consumption and ethical decision-making promoted under SDG 12. The transition toward the 2022–2023 interval, highlighted by the appearance of the terms “*ESG*”, “*corporate social-responsibility*” and “*performance*”, marks the transition toward the conceptual consolidation of the field. These years coincide with the intensification of the European regulatory framework (SFDR, EU Taxonomy, MiFID II, CSRD), which facilitated the integration of ESG as an analytical and managerial instrument in the assessment of corporate sustainability and in the structure of financial products targeted at individual investors, reflecting the principles embedded in SDG 8 concerning responsible and sustainable economic performance.

Between 2023 and 2024, high-frequency terms such as “*retail investors*”, “*disclosure*”, “*impact*”, “*sustainability*”, “*greenwashing*” and “*individual investors*” appear, indicating a growing orientation toward communicational responsibility, transparency, and reporting. This stage reflects the maturation of the field, the shift of scientific interest toward the verifiability of ESG information, and the intensification of concerns regarding the accuracy of sustainability claims in the context of retail investments, a process accelerated by the entry into force of the ESRS standards in 2023, which introduced strict requirements for the reporting and comparability of corporate sustainability data. These developments are consistent with the transparency and accountability objectives promoted through SDG 16.

Overall, the visualization confirms a coherent evolution of research, from the absence of academic recognition (2020), to the emergence of ethical dimensions (2021), followed by conceptual formalization (2022), and subsequently thematic diversification and consolidation (2023–2024). ESG retail thus emerges as a mature interdisciplinary field in which corporate sustainability, investment psychology, and communication integrity converge within a solid analytical framework strongly shaped by European regulations, the global sustainability agenda reflected in SDG 8, SDG 12, and SDG 16, and the growing demands for transparency in financial markets.

² The analysis was performed using normalization by “association strength”, with standard layout parameters (attraction = 2, repulsion = 0). Clustering was conducted with a resolution of 1.00 and a minimum cluster size of 1, while the option “Merge small clusters” was enabled to avoid network fragmentation. The visualization was weighted by “occurrences” (size = 1.05), and the score dimension was set to “average publication year”, allowing the temporal distribution of terms to be mapped within the network. Labels were displayed as frames (font “Open Sans”, maximum length 35 characters, size 1.00) to ensure clarity and visual coherence. Lines connecting the terms were drawn as colored lines, with a minimum strength threshold of 0 and a maximum of 1000 connections, while the size variation parameter was fixed at 1.00. Colors were assigned according to the “Coolwarm” overlay scheme, transitioning from blue tones representing earlier publications to red tones indicating more recent ones, thus illustrating the chronological progression of research themes.

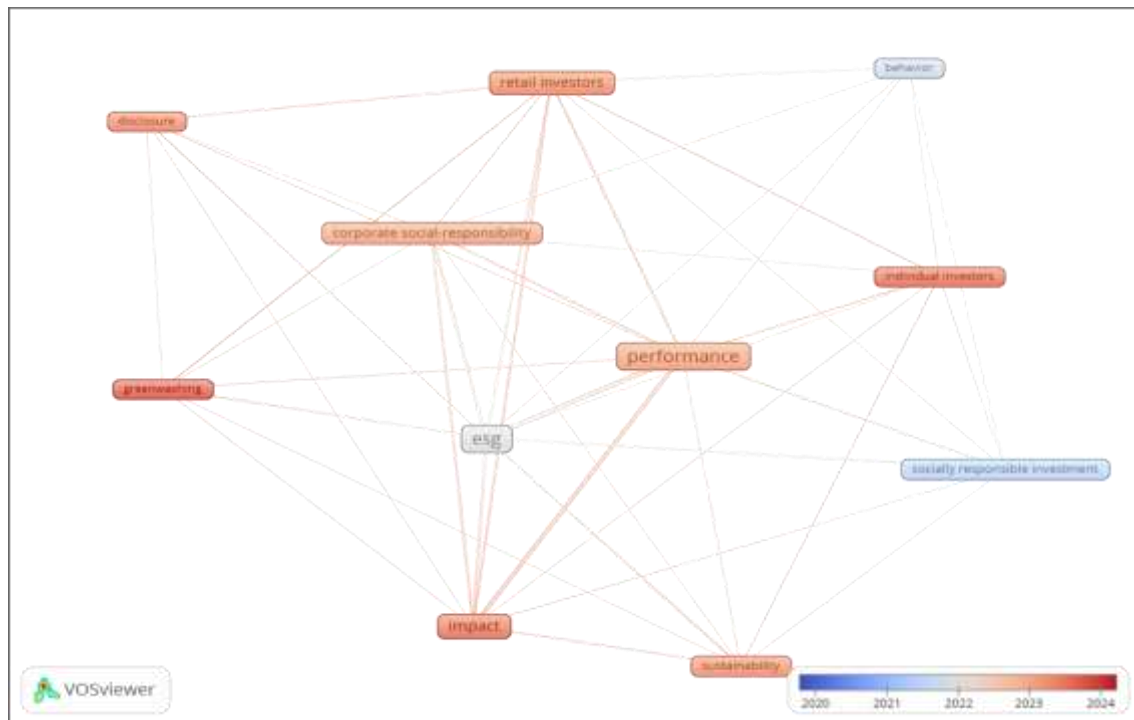


Figure 3. Overlay visualization of thematic mapping in VOSviewer for “ESG retail” (2020–2024).

Source: Authors' own research results.

5. Density structure, conceptual concentrations, and emerging research trajectories

Figure 4³ highlights the semantic concentrations in the literature dedicated to “ESG retail,” outlining a solid conceptual core around the term “ESG,” which attracts the densest thematic connections. The direct association with “*performance*,” “*impact*,” “*corporate social-responsibility*,” and “*sustainability*” shows that the assessment of corporate performance and the integration of sustainability criteria represent the dominant direction of the field, reflecting the orientation of the European regulatory framework from the EU Taxonomy and SFDR to the CSRD and ESRS standards and maintaining a clear link with the objectives through SDG 8.

In the proximity of this core, the terms “*retail investors*,” “*individual investors*,” “*socially responsible investment*,” and “*behavior*” form an area of intermediate density that captures the increasingly strong interest in the behavioral dimension of investments. The literature highlights the ways in which values, individual perceptions, and sustainability preferences influence investors’ choices, a process also correlated with the principles of SDG 12, normatively strengthened through the integration of ESG preferences.

At the periphery of the network, the terms “*disclosure*” and “*greenwashing*” indicate intensified concerns regarding the truthfulness of information and the quality of sustainability communication. This density area signals the persistent tension between the need for transparency and the risk of strategic use of ESG terminology in the absence of real substantiation, a theme associated with SDG 16 and

³ The analysis was conducted using normalization by “association strength,” a method selected to calibrate the relationships between terms based on the intensity of their co-occurrences. The layout parameters were set to standard values, with attraction = 2 and repulsion = 0, ensuring a balanced spatial distribution of items within the network. Clustering was performed with a resolution of 1.00 and a minimum cluster size of 1, while the “Merge small clusters” option was enabled to prevent network fragmentation and preserve structural coherence. The visualization was weighted by occurrences (scale = 1.40), emphasizing the frequency of term appearance across the analyzed corpus. Labels were displayed using the “Open Sans” font, with a maximum length of 35 characters, to optimize legibility and visual consistency. The smoothing parameter was defined by a density kernel width of 2.50, allowing for a uniform distribution of semantic intensity around the most significant terms. The visualization mode was set to “item density,” enabling the identification of conceptual concentrations according to research intensity. Colors were assigned according to the “Viridis” density color scheme, where low-density areas are represented in shades of blue and high-density areas in bright yellow, highlighting the points of maximum conceptual convergence.

reinforced by the strict reporting and oversight requirements introduced at the European level to combat greenwashing.

Overall, the density visualization outlines a layered thematic structure: a core oriented toward sustainability and performance, an intermediate layer centered on the behavioral dynamics of investors, and a peripheral area dedicated to the integrity of communication and informational governance. This distribution confirms the consolidation of a mature interdisciplinary field, decisively influenced by European regulations and the growing pressure for transparency and responsibility in retail financial markets.

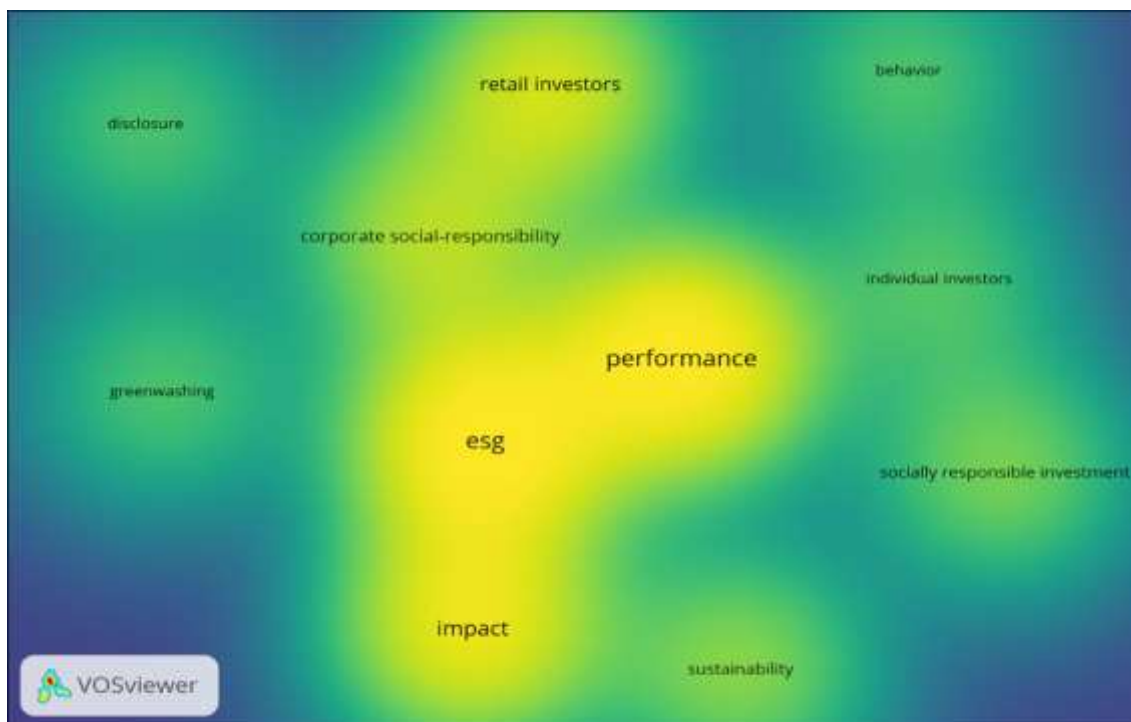


Figure 4. Density visualization of thematic mapping in VOSviewer for “ESG retail”.

Source: Authors’ own research results.

Conclusion

The bibliometric investigation shows that ESG retail has evolved from a marginal and poorly defined topic into a consolidated interdisciplinary field, shaped by the rapid expansion of the European sustainable finance framework and the structural transformation of investment practices in the retail sector. Regarding RQ1, the temporal and conceptual evolution of the field highlights a clear transition from an emerging phase (2011–2019), characterized by isolated theoretical contributions, to a period of accelerated growth and standardization after 2020, directly stimulated by major EU regulations such as SFDR, EU Taxonomy, MiFID II, CSRD, and ESRS. These instruments have transformed ESG from a descriptive label into a formal framework for analysis and reporting, institutionalizing its use both in academic research and in financial markets targeting retail investors.

Answering RQ2, the thematic structure identified through cluster, overlay, and density visualizations highlights a coherent tripartite architecture composed of: the integration of ESG criteria in evaluating corporate performance and sustainability; the behavioral and ethical dynamics shaping the decisions of individual and retail investors; and the informational and governance dimension centered on transparency, reporting quality, and greenwashing risk. These clusters form an interconnected system in which organizational performance, ethical investment behavior, and the integrity of communication reinforce each other, defining the intellectual core of the field. The density analysis further confirms the centrality of the term ESG, surrounded by “performance,” “impact,” “corporate social-responsibility,” and “sustainability,” while intermediate and peripheral layers reflect behavioral responses and concerns related to informational credibility.

Regarding RQ3, the results clearly show that emerging research directions are strongly shaped by the evolution of the European legislative framework and closely aligned with the global sustainability agenda, particularly SDG 8, SDG 12, and SDG 16. These goals, focused on sustainable economic performance, responsible consumption and production, and institutional transparency, are directly reflected in the dominant themes in the literature, from performance evaluation and investment ethics to sustainability information governance and anti-greenwashing mechanisms. The adoption of ESRS in 2023 has further accelerated scientific attention on data comparability, materiality assessment, and accountability in financial markets aimed at retail investors.

Overall, the findings show that retail ESG has formed as a mature analytical ecosystem in which corporate sustainability, investor behavior, and transparency obligations are deeply interdependent. Its continued development is driven simultaneously by regulatory pressure, global sustainability imperatives, and the growing demand for reliable, comparable, and verifiable ESG information in retail-oriented financial environments. As the field advances, future research will likely deepen methodological standardization, data governance, behavioral responses to sustainability information, and the evolving relationship between regulation and market practices, thus contributing to a more transparent, responsible, and resilient financial system.

The bibliometric model used demonstrates strong methodological value and can be replicated in other areas of sustainable finance and corporate governance. However, reliance on the Web of Science database, the strict use of the expression “ESG retail,” and the minimum term frequency threshold partially limit the representativeness of the analyzed dataset. These limitations do not affect the robustness of the conclusions but indicate the need for future research to expand through additional bibliographic sources and comparative analyses for a broader and more accurate understanding of ESG dynamics in the retail sector.

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