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Review

The Diversity of Environmental, Social, and Governance Aspects in Sustainability: A Systematic Literature Review

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Abstract: Significant emphasis has recently been placed on measuring companies from a sustainability perspective by environmental, social, and governance (ESG) scores, resulting in a considerable amount of financial, accounting, business, and management research on the subject. We provide a concise and harmonized systematic literature review of the current trends within this area for a broader range of academic researchers and practitioners. This work comprehensively explains ESG ratings, scores, and reports and aims to summarize how CSR activities are accounted for as non-financial information. The review aims to provide information and a better understanding of the complexity of corporate ESG aspects for those interested in this area. The results suggest that diverse methodologies, subjective elements, and some complexity of ESG measurement exist, leading to companies unconsciously using ESG ratings based on incorrect measures. Scoring methodologies are controversial, highlighting the need for more certainty about the validity of the ratings. ESG ratings need more reliability, and ESG reports do not help increase credibility, transparency, or accountability. Greenwashing emerges from loose regulation, measurement complexity, and the absence of transparency, emphasizing the need for more auditing and regulations in sustainability reporting and rating. Our results also demonstrate that ESG reporting is an ever-growing issue in sustainability and finances, and regulators must focus on it. Inconsistencies and uncertainties exist in ESG ratings and reporting; therefore, education is needed for decision-makers to understand better how this emerging topic works in practice.

Keywords: CSR; ESG rating; ESG reporting; ESG scores; sustainability; transparency; greenwashing; assurance

Citation: Jámbor, A.; Zanócz, A. The Diversity of Environmental, Social, and Governance Aspects in Sustainability: A Systematic Literature Review. *Sustainability* **2023**, *15*, 13958. https://doi.org/10.3390/su151813958

Academic Editor: Wen-Hsien Tsai

Received: 18 July 2023
Revised: 13 September 2023
Accepted: 18 September 2023
Published: 20 September 2023

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1. Introduction

Due to rising pollution and the threat of climate change, the attention paid by corporations to sustainability concerns has extensively risen. With the growth of responsible investing, one question has become relevant: how to measure and disclose a company's environmental, social, and governance (ESG) performance as the three classified categories of sustainable corporate initiatives. ESG performance is not a fundamentally new concept; it has received significant attention in recent decades, driven by the ethical and sustainability-oriented principles of investor decision-making [1]. The literature shows that environmental, social, and governance aspects have become undeniably important and form integral parts of the largest business organizations. ESG scores, ratings, and reports can provide insights into companies' sustainability engagement [2].

Tarquinio and Posadas [3] conducted a bibliometrics analysis to demonstrate that there still needs to be a consensus on the meaning of NFI. A generally accepted or single definition of the term still does not exist. ESG, CSR, and non-financial information (NFI) are usually used as substitutes for each other in the academic literature, and that clearly shows how unconscious the expression is. Academics prefer to define NFI in residual terms after explaining the meaning of the financial information of a company as supplementary financial information [3]. According to Kotsantonis and Serafeim [4], non-financial information

is thought to capture how companies use different forms of capital—natural, social, human, intellectual, and financial—to supply their goods and services. Other academics define and understand NFI in terms of corporate social responsibility (CSR) issues, intellectual capital information, and information external to financial statements [5].

Non-financial reporting is responsible for providing high-quality information that commands public confidence. In some industries, companies can effectively manage their reputation and promote responsible practices through transparent and comprehensive ESG reporting [6]. Companies provide a higher level of ESG reporting to legitimize and justify the continued existence of the firms, in line with the legitimacy theory [7]. Generally, ESG reports provide extensive information on sustainability issues. Still, they may undermine public confidence in the accuracy of these reports and devalue one of the most important public communication tools for companies [6].

ESG scoring and ratings also significantly affect economic decisions, although diversity exists in this area. Rating agencies use different scales to determine companies' ESG scores, and there is also uncertainty about the conversion of companies' scores according to their scoring systems, which can lead to significant differences in measurement scales. In addition, how the individual indicators are combined and, hence, how the final scores per pillar and the aggregated scores are calculated is often surrounded by uncertainty [8]. Transparency in ESG assessment methodologies and investor education must be improved for investors to understand the underlying assumptions better and make better investment decisions [9].

The number of publications on NFI started peaking in 2015 and still has yet to end since a new regulatory regime, the Corporate Sustainability Reporting Directive, appeared in 2021 [10]. Given the increased trend in the number of publications, the findings reveal that ESG reporting is a developing area in the study of sustainable finance. In addition, most of the articles highlighted that companies, investors, and consumers have evidently shifted their attention to corporate sustainability issues [1].

The aim of this paper is to give a systematic review of the academic literature on ESG reporting, given the growing importance of the topic. ESG reporting has become widespread in almost all areas of economic policy and decision-making, but no coherent summary structuring the ideas behind ESG reporting has been available [6]. However, further studies on embedding ESG scores in corporate life are needed [9]. Therefore, we established our main research question: What ESG concepts and trends have emerged in the corporate world over the past few decades? The paper is structured as follows. Section 2 explains how our sample selection was made, supported by basic descriptive statistics. Section 3, which is divided into four subsections, presents the results of our literature review, followed by our main conclusions.

2. Materials and Methods

To obtain a comprehensive overview of the environmental, social, and governance rating systems, we conducted an online search using two main electronic databases: the Web of Science and Scopus. Only the ESG keyword was used in the search, and the keyword had to be included either in the title, abstract, or keywords. We only selected materials written in English and focused only on academic journal articles or review articles—book chapters, books, or conference papers were omitted from the dataset. Our analysis did not restrict the publication year for finding empirical articles. However, the relevance and novelty of the topic can be proven by the fact that the total number of articles was published between 2013 and 2023, meaning that the research results are selected from the last decade.

Table 1 shows the top 10 high-quality published article sources, shown according to the journal names we analyzed. Since the research subject is very popular, we selected our main research areas, which were business, management and accounting, economics, and finance. After the initial research, we obtained 1944 entries, out of which 561 were duplicates, and we concluded that an especially high number of articles were written on the selected topic. To ensure that only relevant articles were included in the final analysis, the authors met

twice to discuss the "conflicting" articles. Firstly, to ensure that only relevant articles were included in the final analysis, we undertook a higher level of screening process. Secondly, we looked deeply into the articles to select those that could meet our research objective.

Table 1. Most productive journals, according to the Web of Science and Scopus.

Rank	Journal Name	No. of Articles and Percentage (N = 909)	Journal Name	No. of Articles and Percentage (N = 1035)
	Web of Science		Scopus	
1	*Financial Research Letters*	56 (6.16)	*Journal of Sustainable Finance and Investment*	82 (7.92)
2	*Journal of Portfolio Management*	39 (4.29)	*Finance Research Letters*	64 (6.18)
3	*Journal of Applied Corporate Finance*	33 (3.63)	*Journal of Portfolio Management*	41 (3.96)
4	*International Review of Financial Analysis*	25 (2.75)	*International Review of Financial Analysis*	26 (2.51)
5	*Journal of Asset Management*	22 (2.42)	*Borsa Istanbul Review*	19 (1.84)
6	*Journal of Risk and Financial Management*	21 (2.31)	*Global Finance Journal*	17 (1.64)
7	*Journal of Investing*	18 (1.98)	*Journal of Business Research*	17 (1.64)
8	*Journal of Investment Management*	18 (1.98)	*Research in International Business and Finance*	17 (1.64)
9	*Research in International Business and Finance*	16 (1.76)	*Corporate Governance*	15 (1.45)
10	*Journal of Business Research*	14 (1.54)	*Journal of Investing*	15 (1.45)

Source: own composition.

The initial screening led to 76 articles, as we excluded a further 1307 non-relevant articles. After a comprehensive screening process, we concluded that 4 articles were unavailable, and another 32 articles did not address our research objectives. Both authors also screened the remaining articles, resulting in 40 publications that were relevant to our systematic literature review. Figure 1 provides an overview of the whole selection process.

It seems evident that ESG reporting is an ever-growing research topic, and since 2017, there has been an increasing number of publications on the subject, peaking in 2022 (Figure 2). The results for 2023 are not yet complete, but it is already evident that this year will also be productive in terms of publications.

After reviewing the relevant publications, we identified 4 main ESG-related categories. Most of the research articles focused on ESG reporting (16) and ESG rating (11). In addition, the 2 other categories we created were ESG scores—on which topic we found 7 relevant articles—and CSR, with a further 6 papers. Figure 3 shows the main topics of the articles analyzed.

In the selected empirical literature, we also analyzed geographical diversity. Most studies were written on global issues (34), while only a few of them focused on specific regions, such as Europe (4), Asia (1), and the US (1). Figure 4 shows the main regions studied in the analyzed articles.

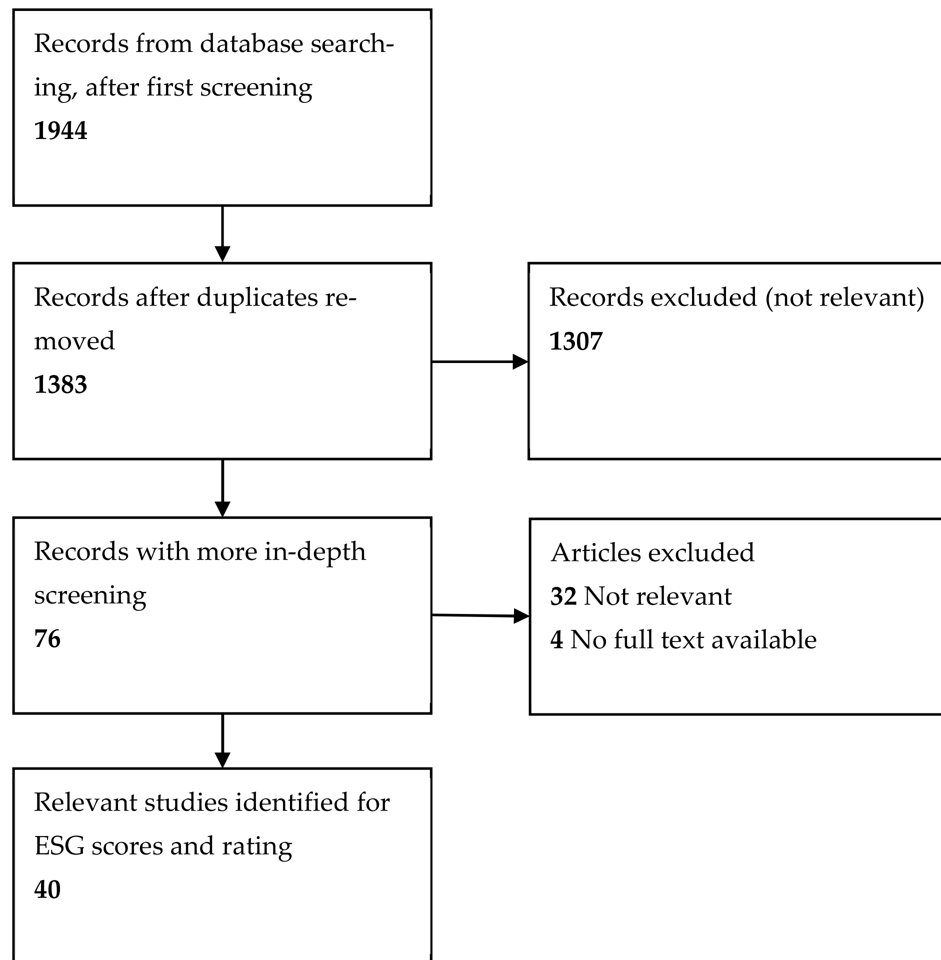

Figure 1. Overview of the literature selection process. Source: Own composition.

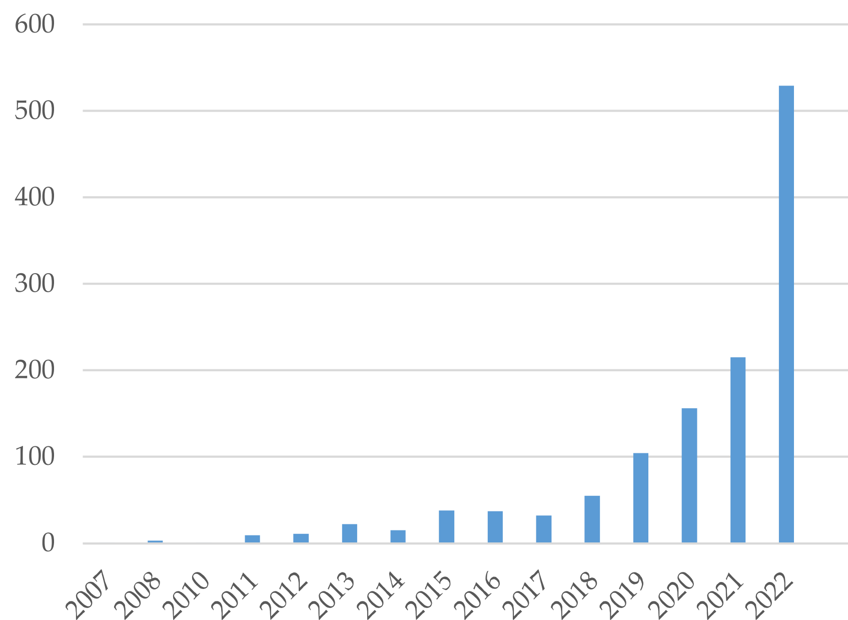

Figure 2. The number of publications on ESG matters. Source: Own composition.

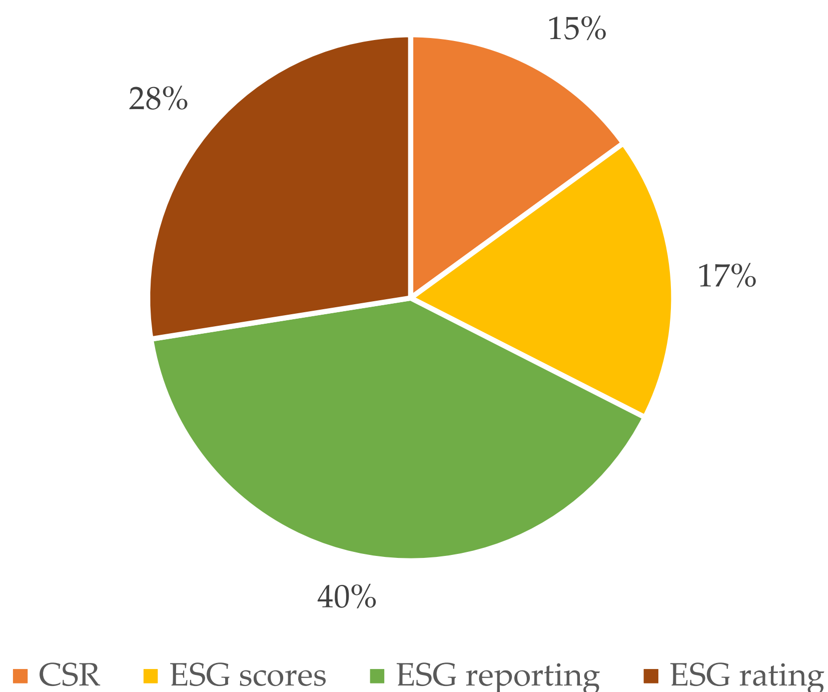

Figure 3. Overview of topics of the analyzed articles. Source: Own composition.

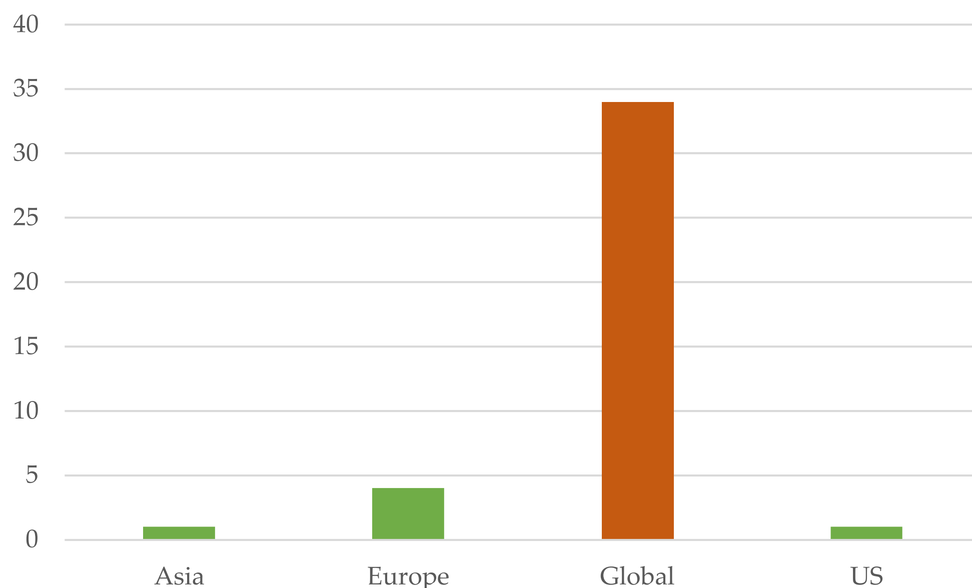

Figure 4. Frequency of regions analyzed in the ESG-related articles. Source: Own composition.

In terms of the methodologies used in the selected articles, quantitative analysis was the most popular (65%), followed by literature reviews (25%)—only 10% of the studies applied qualitative analysis (Figure 5).

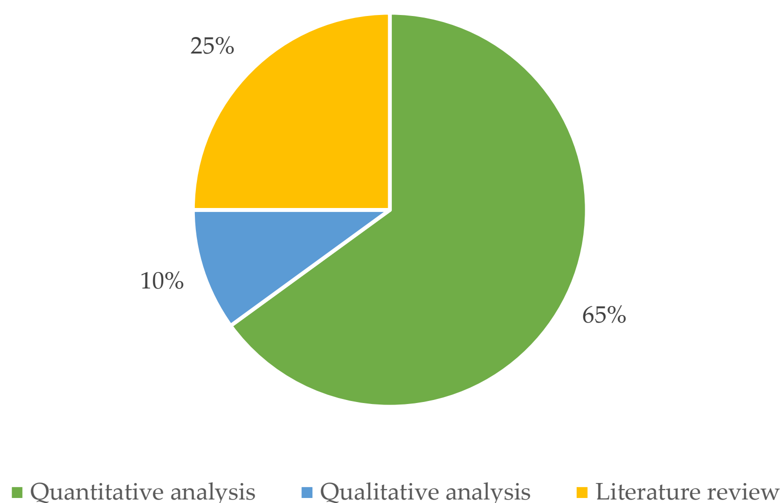

Figure 5. Research methods used in the ESG-related articles. Source: Own composition.

3. Results

Although the notion of environmental, social, and governance (ESG) reporting has been known for many years in the field of sustainability studies, the last twenty years have seen a significant improvement in this concept. While reading the articles, we were able to identify the following four themes, as evident from Table 2.

Table 2. Summary of articles on the various aspects of ESG reporting and its effects on corporations.

ESG Reporting	ESG Rating	ESG Scores	CSR
Jain and Tripathi (2023) [1] Schiemann and Tietmeyer (2022) [2] Tarquinio and Posadas (2020) [3] Kotsantonis and Serafeim (2019) [4] Sethi et al. (2016) [6] Rahman and Alsayegh (2021) [7] Sahin et al. (2022) [9] Alamillos and de Mariz (2022) [10] Rezaee et al. (2023) [11] Singhania and Saini (2023) [12] Yu et al. (2020) [13] Linnenluecke (2022) [14] Christensen et al. (2022) [15] Dinh et al. (2023) [16] Adams and Abhayawansa (2022) [17] Tamimi and Sebastianelli (2017) [18]	Widyawati (2021) [8] Tsang et al. (2023) [19] Gyönyörová et al. (2021) [20] Dorfleitner et al. (2015) [21] Dupuy and Garibal (2022) [22] Dumrose et al. (2022) [23] De la Cuesta and Valor (2013) [24] Capizzi et al. (2021) [25] Louche et al. (2023) [26] Utz (2019) [27] Fiaschi et al. (2020) [28]	Singhania and Saini (2022) [5] Kiriu and Nozaki (2020) [29] Clément et al. (2023) [30] Mercereau et al. (2022) [31] Mikolajek-Gocejna (2018) [32] Lee and Hess (2022) [33] Jain et al. (2019) [34]	Chung and Cho (2018) [35] Bofinger et al. (2022) [36] Dicuonzo et al. (2022) [37] Capelle-Blancard and Petit (2017) [38] Waas (2021) [39] Aksoy et al. (2022) [40]

Source: Own composition.

3.1. ESG Reporting

ESG reporting aimed to meet stakeholders' demand for companies' non-financial information, but recently it became a popular greenwashing tactic without any standardized regulation system. This trend needs to be changed, as ESG reporting is one of the most valuable sources of information for stakeholders' decision-making [6].

There has been growing interest among stakeholders in non-financial information, a demand that the advent of the Non-Financial Reporting Directive (2014/95/EU) sought to address [10]. Non-financial reporting trends gave rise to the need for information about activities that impact more significant public concerns, such as sustainability concepts, supply chains, bribery or product safety issues, and the treatment of employees [6]. Company stakeholders pressure firms to disclose more information on environmental, social, and governance matters and push policymakers to design a legal and measurable ESG framework [7]. Since the EU Directive does not provide consistent reporting guidelines for ESG disclosure, several voluntary reporting frameworks have appeared [10].

In response to the emerging situation, Rezaee et al. [11] found that the adoption of the 2014/95/EU directive in Europe improved companies' disclosure rates for non-financial reporting. Furthermore, they conducted research among US and EU firms and argued that the EU's mandatory regulatory regime is more efficient and, therefore, outperforms US firms with their voluntary disclosure regimes [11]. The academic literature also shows that developed countries generally have a more comprehensive and rigorous regime for ESG disclosures, with well-established reporting frameworks and enforcement mechanisms. By contrast, developing countries face challenges in terms of regulatory deficiencies, weak implementation, and limited resources for ESG compliance [12].

Other European Union regulatory initiatives significantly shape ESG practices worldwide by enhancing transparency and giving clearer guidelines, such as the sustainability finance disclosure regulation (SFRD) and the EU taxonomy regulation guidelines [10]. While the EU has taken the lead in ESG regulations, other countries must adopt these policies into local legislation, which is usually called the "ESG Brussels Effect". Alignment between global and EU ESG regulations is vital to ensure consistency and avoid regulatory fragmentation [10]. Uniformity is also needed in the definitions, and non-financial information paves the way for conceptualizing the expression and its different understandings [3]. Furthermore, uniformity contributes to the development of ESG ratings, metrics, and a comprehensively structured corporate reporting system [4].

Businesses can eliminate information deficiencies through regulated financial reporting and voluntary communication, such as management assumptions, announcements, and analyst presentations [2]. Hence, the main purpose of non-financial information disclosures is to resolve the information asymmetry problem with disclosure policies that are convenient, credible, comparable, and finally flexible enough to encompass black swan events [12].

The existing challenges of ESG reporting are manifold as there is neither a main governance body nor a specific and clear regulatory guideline to ensure the accuracy of ESG reports, and there is no obligatory audit activity to make the information reliable. ESG metrics vary in ESG ratings and scores are in line with the disclosure requirements [13]. Linnenluecke [14] discussed the challenges of analyzing ESG performance at the firm level in developing economies and found several situations when ESG ratings could have been more effective in accurately determining a business's ESG performance.

Due to growing concerns about sustainability and ethical business practices, ESG criteria are now more crucial than ever for managers and investors. However, there is broad disagreement regarding the significance of ESG performance [14]. Investors mainly aim to use ESG information for risk-screening purposes [2]. Therefore, we need to differentiate between ethical and responsible investment approaches. The ethical investors' main characteristic is rejecting companies that do not comply with their sustainability approaches. If responsible investors consider the risk posed by ESG factors, they can still opt for maximization of return [13]. Linnenluecke [14] highlights that there is still a lack of understanding of how ESG reporting affects company performance and long-term economic value generation.

Yu and colleagues' [13] research shows that companies with better ESG performance tend to have higher ESG ratings, indicating that stakeholders perceive ESG efforts as value enhancers. The study also shows that a positive relationship between ESG performance and

firm value is more prominent in sectors that stakeholders, such as the financial and services sectors, more intensively monitor. Moreover, the publication of ESG reports positively affects corporate reputation [6]. Companies with higher ESG disclosure ratings tend to have better financial performance, indicating a positive relationship between transparency and general business success.

Conversely, Christensen et al. [15] found that in the early stages of institutional innovation around ESG disclosures, greater ESG disclosure leads to more significant ESG disagreement among ESG rating agencies and does not seem to help resolve ESG scoring disagreements. Moreover, the method of ESG ratings calculated in a particular industry group might change after the initial disclosure of information. This can significantly impact the results of ESG research. Furthermore, even if nothing has changed in the operations of a business, their first disclosure of ESG data and an update to the release of ESG data may make the company seem more sustainable [9].

When discussing ESG reporting, concerns about greenwashing and misleading disclosures can arise in several aspects. Previous research results show that greenwashing in ESG reports can be prevented by (1) more independent directors, (2) more institutional investors, and (3) more influential public interest through a less flawed national system [13]. On the one hand, investors and regulatory organizations increasingly demand that sustainability information be presented in a standardized way. However, managers have considerable reservations about the framework that is followed, the quality of the information reported, and the assurances that are given [16]. On the other hand, several aspects could be improved, underlying the push for harmonization and the standardization of NFI reports. A respectful engagement between existing framework-setters is important to enhance the quality of the reports. Furthermore, there is a need for critical accounting scholars to contribute to the debate and research corporate accountability for sustainable development [17].

There has been vast progress in ESG reporting among companies, but there is still room for improvement, especially regarding transparency [18]. ESG reports lack standardization and may not fully reflect a company's sustainability performance, may require contextual interpretation, may be subjective, and must be supplemented with additional information to enable informed decision-making [4]. A consistent and standardized non-financial reporting framework is needed to enhance disclosures [18]. The research results of Rezaee et al. [11] encourage regulators to initiate more homogeneous and structured non-financial reporting guidelines. Therefore, policymakers and governments need to take urgent action to ensure sustainable growth and development and raise sustainability awareness among businesses and stakeholders [1].

Table 3 shows the four most common concerns regarding the current ESG reporting system.

Table 3. The most commonly researched topics within ESG reporting.

Considerations in ESG Reporting	Details of the Consideration	Article
Reporting framework	A harmonized reporting framework can describe a set of factors used to measure the non-financial impact of investments and companies.	Tarquinio and Posadas (2020) [3] Alamillos and de Mariz (2022) [10] Singhania and Saini (2023) [12] Adams and Abhayawansa (2021) [17] Tamimi and Sebastianelli (2017) [18]
Reporting assurance	ESG reporting with external assurance or audits can improve the quality of information provided.	Sethi et al. (2016) [6] Rezaee et al. (2023) [11] Yu et al. (2020) [13] Dinh et al. (2023) [16]

Table 3. *Cont.*

Considerations in ESG Reporting	Details of the Consideration	Article
ESG and financial performance (FP)	ESG performance can affect the financial performance of companies in many ways.	Schiemann and Tietmeyer (2022) [2] Sahin et al. (2022) [9] Linnenluecke (2021) [14]
ESG measures	ESG measures are used to benchmark the sustainability performance of companies from environmental, social, and governance aspects, which is influenced by reporting.	Jain and Tripathi (2023) [1] Kotsantonis and Serafeim (2019) [4] Rahman and Alsayegh (2021) [7] Christensen et al. (2022) [15]

Source: Own composition.

3.2. ESG Rating

ESG ratings vary from agency to agency, in terms of their purpose, target, geographic parameters, and many other reasons. Agencies, as non-financial data providers, have recently become central actors in evaluating the sustainability performance of companies [19].

Gyönyörová et al. [20] explored the consistency and convergent validity of the most widely recognized ESG rating providers, and their exploratory factor analysis demonstrates considerable uncertainty across latent factors. The authors also showed that consistency and convergent validity across ESG data significantly depend on the industries and countries under consideration. Therefore, the authors highlight that a naïve use of ESG ratings may provide misleading information. This argument is supported by Dorfleitner et al. [21], empirically comparing the ESG scores of three different data providers, including more than 8500 companies. They found an evident lack in the convergence of ESG measurement concepts in both distribution and risk; therefore, they call for a critical evaluation of the respective results. Similarly, Widyawati [8] was in search of the measurement quality of four ESG ratings and also found significant differences in measurement methods and the whole construct. However, the results also suggest that while the agreement between ESG scores is low, there is evidence of a low to moderate agreement regarding ESG rankings.

Dupuy and Garibal [22] investigated the impact of aggregation rules when combining information on firms across all E, S, and G categories into single ESG ratings. They found that the usual aggregation rules may bias scores toward the most dispersed category; therefore, they suggested a correction for managing this bias. Dumrose et al. [23] also found differences in ESG firm-level ratings and argued that the EU taxonomy could support reducing this divergence. They especially highlighted that environmental ratings are significantly related to the EU taxonomy, although the authors also showed that the issue of measurement divergence cannot be fully resolved.

De la Cuesta and Valor [24] evaluated the quality of ESG reporting by Spanish companies listed in the IBEX-35 stock index and also analyzed the main drivers of differences among the reporters. The authors concluded that despite the standardization advantages of GRI indices, their approach to indicators cannot provide high-quality, comparable, and complete information on a firm's sustainability performance. Regulation and reputation were found to be the main drivers for improving the quality of ESG reporting. Similarly, Capizzi et al. [25] investigated the divergence of ESG ratings in a sample of Italian companies. They found that weight divergence and social and governance indicators are the main drivers of rating divergence. The authors elaborated a new tool for analyzing these divergences and provided a number of recommendations for researchers, practitioners, and policymakers interested in ESG ratings.

Louche et al. [26] assessed companies' decent work practices by comparing six rating agencies' respective rating methodologies and found that the concept of decent work itself remains diffuse and abstract for many ESG professionals. It seems that the more one goes into the details of rating methods, the greater diversity one finds. The results were different because of the scope of assessment, in terms of its breadth and depth, and the differences in methodologies regarding score aggregation, weighting, the activation of indicators, and the assessment of controversies. Moreover, the authors also found that some degree of

subjectivity is unavoidable, despite the desire to be as objective as possible during the rating process [26].

Utz [27] analyzed corporate scandals, proxied by press releases, and the reliability of ESG ratings on an international sample, and also found high diversity among ratings. His results suggest a significant decline in retrospective controversy indicators during the period in which details of the scandals were publicly released, while, following the scandals, he found a rebound of these indicators. His findings also suggest that aggregated ESG ratings are useless when it comes to predicting corporate scandals; therefore, managerial education regarding a comprehensive vision of CSR is greatly needed [27].

Fiaschi et al. [28] sought to measure the corporate "wrongdoing" of companies by elaborating an index that is understood as firms' involvement in controversies over universal human rights. The index identifies those companies that do harm, irrespective of how much good they do through their CSR activities, and aims to shift the CEO's mindset to doing no harm instead of doing many good and bad things in parallel—avoidance and mitigation were found to be key elements in this regard [28]. Table 4 shows four of the main misconceptions about ESG ratings.

Table 4. Four misconceptions about ESG ratings.

Misconception about ESG Rating	Details of the Misconceptions	Article
The ESG ratings authorized by agencies are standardized and consistent.	There is no generally accepted approach, criteria, or methodology for setting up an ESG rating; therefore, comparing companies using ratings can lead to misunderstandings.	Widyawati (2021) [8] Gyönyörová et al. (2021) [20] Louche et al. (2023) [26]
The higher the ESG rating, the better the financial performance.	ESG ratings primarily focus on a company's non-financial performance with several company-, industry-, and country-specific factors. Meanwhile, although evidence suggests correlations between a company's financial and non-financial performance, a high ESG rating does not guarantee better financial performance.	Tsang et al. (2023) [19] Dorfleitner et al. (2015) [21]
ESG rating only focuses on events in the past.	ESG ratings are not only based on a company's past performance. Still, ratings can also change over the years, as agencies constantly update their information on the company in addition to their rating methodology. Therefore, ESG performance can affect the financial performance of companies in many ways.	Utz (2019) [27] Fiaschi et al. (2020) [28]
Comprehensive assessment of ESG performance without subjectivity.	ESG rating can only capture publicly available, intentionally, and voluntarily provided information, as there is no universally accepted method of disclosure and assessment.	Dupuy and Garibal (2022) [22] Dumrose et al. (2022) [23] De la Cuesta and Valor (2013) [24] Capizzi et al. (2021) [25]

Source: Own composition.

3.3. ESG Scores

ESG scores are becoming increasingly relevant in the academic literature, although little consensus is made about the definition of ESG scores and their measurement methods. This is mainly due to the fact that different rating agencies use different variables, databases, weights, and measurement methods to calculate their own indexes [29].

Clément et al. [30] conducted a systematic review of the academic literature on ESG scores and found five thematic definitions emerging in terms of how scholars have used ESG scores in their research: sustainability, corporate social responsibility, disclosure, finance, and the analysis of ESG scores.

In terms of sustainability, most articles aim to capture the sustainability of companies in general, although they face serious problems when trying to compare the different results, as even the definition used to measure sustainability is still difficult to capture [31]. It seems evident from the literature analyzed herein that environmental and governance issues have a greater impact on ESG scores than social issues. However, even environmental issues are biased as a direct measurement of global warming or climate change is not possible at the company level [30].

Several authors suggested new approaches to improve the comparability of ESG scores. Mikolajek-Gocejna [32], for instance, aimed to set an index reflecting the degree to which European companies are represented in major social responsibility indices and proposed introducing the GDP of each country into the calculation formula. Singhania and Saini [5] took another approach and suggested classifying countries into well-developed, rapidly improving, developing, and early-stage ESG frameworks so that their scores can be better compared. Lee and Hess [33] developed a new index based on companies' contributions to SDGs to compare their respective results. Focusing on Fortune 500 companies in 2017, their new index provides methodological clarity and data granularity. Jain et al. [34] compared various Thomson Reuters and MSCI indices to check for potential inter-linkages and comparability and found no significant differences between sustainability-based and conventional indices in terms of measuring a company's overall performance in the eyes of investment managers.

Table 5 summarizes the main deficiencies related to ESG reporting, rating, and scoring mechanisms, as identified from the literature analyzed.

Table 5. The main shortcomings of ESG rating, scores, and reporting.

ESG Reporting	ESG Rating	ESG Scores
▪ Inconsistent legislation ▪ Non-standardised and harmonised framework ▪ Lack of accountability ▪ Lack of assurance ▪ "greenwashing" and "cherry picking" problems	▪ Lack of regulation systems ▪ Different rating agencies with different perspectives ▪ Incomparability ▪ Lack of transparency	▪ Weighting problems ▪ Aggregation issues ▪ Purpose, target, sector, geographic differences ▪ Complexity of measuring ESG impacts

Source: Own composition.

3.4. Corporate Social Responsibility in Investments

Measuring corporate social responsibility is challenging and causes controversy between authorities, companies, and other economic stakeholders. Non-financial information is hard to capture, and determining its impact on a company's performance is even more complex [3].

Chung et al. [35] conducted a literature review within the social and environmental accounting research area. They found controversial arguments about the negative relationship between corporate social performance and financial performance, while environmental investment and return on investments are positively correlated. Bofinger et al. [36] explained the latter concept as the increase in demand for ESG-engaged companies; these investment decisions have become a worldwide trend, leading to improved corporate financial performance, accompanied by enhanced regulatory initiatives. There is also a positive relationship between innovation and sustainability performance. To achieve their sustainability goals, it is clear that companies need to make an effort to improve their operations [37].

ESG performance is a multidimensional factor, one that, since the early 2000s, has increasingly been described by a single aggregate indicator or a generated proxy. Considering that the objectives of ESG metrics are well-defined, it still needs to be assumed that poor performance in one dimension can be mitigated by strong performance in another [38].

The purpose of ESG rating systems is to provide a ranking of companies according to objective performance criteria, which is extremely challenging, especially regarding their social aspects [39]. These factors are undoubtedly relevant for interested parties and can provide a broad picture of how the company approaches sustainability. Currently, neither scoring nor reporting addresses the information asymmetry, and stakeholder theory still needs to be resolved [36]. Regulators and investors are able to monitor and acknowledge corporations for their ESG efforts using ESG metrics and reporting, which provide crucial details about companies [40].

ESG metrics and standards for reporting are more likely to communicate with investors and regulators and less likely to satisfy customers' interest, which fundamentally affects firm sales [40]. A universal framework is hard to create and may need to be revised as the importance of ESG dimensions might vary across countries and industries. A tailored approach to corporate sustainability issue reporting and measuring is required, considering the specific characteristics and priorities [38].

4. Conclusions

This article aimed to systematically analyze the literature regarding high-quality research on ESG rating, scoring, and reporting. The research intention was to draw particular attention to the growing awareness and importance of ESG/CSR activities to corporate sustainability. Each of the four pillars of this article opens up future research directions. We have identified a number of research gaps in these areas, such as the analysis of assurance and framework practices in ESG reporting, green financing, stock market regulatory considerations, banking perspectives and motivations, and internal corporate decisions and commitment issues. After reading this article, interested colleagues working in the areas of ESG reporting can identify the most appropriate topic for future research.

Based on the literature review results, most studies indicate that unconsciously used ESG ratings can lead to decisions based on incorrect considerations. ESG scores and ratings vary across agencies due to different goals, objectives, and geographies, and do not use the same databases, variables, weights, and measurement methods, which influences the inconsistencies, uncertainties, and misleading consequences when using them. Capturing sustainability, in general, is difficult, and aggregated ESG scores proved ineffective in anticipating corporate scandals, underscoring the crucial need for comprehensive CSR-focused managerial education.

By looking deeper into the details of the rating methods, high levels of variation can be found, suggesting a substantial uncertainty about the validity of the rating companies. Some studies found positive financial gains associated with ESG metrics and reporting, while others discovered negative or neutral impacts in response to sustainability initiatives. It can be concluded that the positive association between ESG performance and corporate performance is more heavily emphasized in industries that are more closely scrutinized by stakeholders, such as finance and services. Increasing demand for ESG-oriented businesses can be expected to lead to better financial performance and better regulatory initiatives.

ESG ratings need more reliability, and ESG reports do not help increase credibility, transparency, and accountability. One of the primary purposes of ESG disclosure is to address information asymmetries while meeting the need for information from stakeholders. Various reporting frameworks are available, and the quality of disclosure still has its limitations. ESG reports are not standardized, do not perfectly represent a company's sustainability performance, require interpretations in context, and can be subjective. The greater the ESG disclosure, the broader the disagreement among ESG ratings, which indicates that ESG reports currently do not provide complete and comparable information on companies' sustainability. Consolidated and harmonized ESG ratings, with their objective approach, can settle the controversy, but a certain degree of subjectivity cannot be avoided.

Last but not least, with the spread of ESG approaches, the "greenwashing" mechanism appeared among companies to better portray their sustainability perspectives. Many factors led to the evaluation of this movement, such as consumer demand for eco-friendly and

conscious products and services and the need for more non-financial information, the complexity of measuring and the accountability of ESG scores, the lack of transparency, and weak regulations. Several potential solutions were proposed by the literature to standardize and uniformize the ESG rating, scoring, and reporting, and increased scrutiny is needed, which can be assured by independent auditing processes.

There has been considerable development in ESG reporting among companies and when creating rating systems, but there is still room for improvement, especially in terms of transparency. A consistent, tailored, and standardized non-financial reporting framework is needed to enhance disclosure and rating tendencies. ESG practices are significantly shaped by European Union regulatory regimes, which trend needs to become a global movement to support consistent, transparent, and accountable sustainability-based decision-making. This cannot be achieved without improving the ESG-conscious education system and helping stakeholders to better understand the underlying assumptions.

In conclusion, our article not only provides researchers with a basis for further research by clustering the different aspects of environmental, social, and governance considerations but also highlights the long-term negative impact that a lack of regulation can have on businesses globally. The article highlights the EU's pioneering role in ESG regulation and draws the attention of other economic actors to the crucial importance of this area. It also provides insights to stakeholders, especially investors, on the gaps in ESG ratings, scoring, and reporting, which can help to inform and improve investment decisions.

As with every academic study, our analysis also has limitations in the case of ESG-influenced firm value and ESG-related investing. These topics were outside the scope of our research, as green finance is another excellent area of academic literature and has also been highly emphasized and connected to ESG performance due to its rating and reporting systems. However, future research can be carried out including these topics. Additionally, as the definition of ESG reporting is diverse, CSR literature could be considered at the same time. Furthermore, the selection of keywords is focused exclusively on the topic of this study.

Author Contributions: Conceptualization, A.J. and A.Z.; methodology, A.J. and A.Z.; validation, A.J. and A.Z.; formal analysis, A.J. and A.Z.; resources, A.J. and A.Z.; data curation, A.J. and A.Z.; writing—original draft preparation, A.J. and A.Z.; writing—review and editing, A.J. and A.Z.; visualization, A.J. and A.Z.; supervision, A.J. and A.Z.; project administration, A.J. and A.Z.; funding acquisition, A.J. and A.Z. All authors have read and agreed to the published version of the manuscript.

Funding: This research received no external funding.

Institutional Review Board Statement: Not applicable.

Informed Consent Statement: Not applicable.

Data Availability Statement: Not applicable.

Conflicts of Interest: The authors declare no conflict of interest.

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