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Evaluating ESG information disclosure quality and integrated firm value: A bibliometric review

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Abstract: The importance of disclosure related to environmental, social, and governance (ESG) factors is increasingly recognized. The aim of this research is to fill gaps in the literature regarding the quality of ESG disclosures and to advocate for a broader perspective in assessing corporate value. To gain a deeper understanding of developments in ESG aspects and emerging areas for future research, this study conducted a bibliometric analysis of current literature in the Web of Science (WOS) database, utilizing VOSviewer and CiteSpace tools for analysis to identify gaps in the literature and reveal trends. This study identifies a significant gap in the literature concerning the quality of ESG disclosures. Furthermore, most studies have focused on stakeholder theories; it is important for researchers to continually explore different theoretical frameworks to support their findings. Present studies have linked ESG performance with financial performance, but few investigate comprehensive values such as social or environmental value. It is also crucial to consider economic externalities when evaluating the impact of ESG reporting, especially given the potential for ESG washing. As ESG factors become increasingly vital to corporate strategy and stakeholder engagement, it is essential to improve clarity around definitions, measurement, and evaluation metrics related to ESG performance.

Keywords: *Disclosure quality, ESG impact, ESG performance, Firm value.*

1. Introduction

Environmental, Social, and Governance (ESG) undoubtedly attracts extensive attention from stakeholders and becomes the most current and debated topics in the field of investments. Numerous studies have extensively examined how ESG factors influence the financial performance and overall value of companies. According to Wong, et al. [1] a firm's ESG score from Bloomberg effectively conveys signal to potential investors its commitment to environmental, social, and governance principles. The increasing assessment of companies by independent ESG evaluation agencies indicates the growing recognition of the significance of these ratings among investors. When companies can increase financial value by gaining legitimacy from society with ESG scores, the measurement of ESG perdormance and firm value need to be reconsidered.

Historically, traditional approaches to assess corporate value have primarily focused on financial indicators, overlooking essential non-financial elements like ESG (Environmental, Social, and Governance) factors [2, 3]. In its March 2021 report titled ESG and Corporate Valuation, the International Valuation Standards Council (IVSC) highlighted the necessity of incorporating ESG elements into the current frameworks for valuing corporations. The concept of enterprise value has broadened to include not only financial aspects but also social and ecological factors. This transformation is related to the theory of 'Triple Bottom Line' model, a concept introduced by John Elkington, a British scholar focused on sustainability, in 1999, including three aspects of economic, social and environmental bottom line.

Although there have been improvements in ESG practices, conflicts in ESG commitments continue to be a concern. Bromley and Powell [4] defined concept of decoupling as the gap between the stated

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policies and their practical implementation. While organizations may communicate their ESG strategies to project a favorable image and gain legitimacy, these strategies frequently do not lead to substantial actions. The impact of ESG efforts can be diminished if they are not implemented properly through established programs and effective management structures. A commonly acknowledged type of disconnect, greenwashing acts as a cost-effective strategy for establishing legitimacy. In a study conducted by Luan [5] the effects of greenwashing, along with other deceptive practices like social and governance washing, were analyzed, illustrating the diverse advantages that businesses may gain from such strategies. Since green communication conveys information about a company's environmental responsibility which is highly valued by stakeholders, firms that engage in green communication can enhance their legitimacy and reputation, attracting both customers and investors [6, 7] the same to social and governance communication. ESG washing can be defined as the opportunistic behavior of firms to commit to ESG efforts without substantive investments and actions [8-11]. Prior studies have indicated a favorable correlation between environmentally deceptive practices and financial outcomes [12].

Social washing is a broad term encompassing various ethical (or unethical) practices related to the treatment of human capital, including labor standards and human rights [13]. Even with the increased public consciousness, there are still plenty of examples of companies trying to appear more socially responsible than they actually do, thereby misleading consumers regarding various environmental issues, standards related to social and governance (ESG) criteria. According to Aldowaish, et al. [14] a case study focused on a leading organization in the IT sector, the Ricoh Group, was conducted to uncover conflicts for environmental matters, social, and governance aspects, revealing that a comprehensive strategy was employed to address various ESG-related challenges. These conflicts were mitigated by transitioning the focus from cost considerations to enhancing competitive market positioning, which highlighted the challenges associated with ESG conflicts.

A further factor contributing to a more comprehensive understanding of a company's worth is the concept of economic externality. The concept of economic externality suggests that when individuals or entities engage in economic activities, the actions of one party can impact another party without the provision of appropriate compensation or payment. Pang and Xie [15] sheds light on to what extent economic growth target pressure has a negative externality of pollution in China and how this pressure may conflict with sustainability development. This is corresponding to ESG washing. This kind of externality can be either beneficial or detrimental, and to realize the joint sustainable development of economy, society and environment, it is necessary to effectively incentivize enterprises to implement more positive externalities and inhibit negative externalities, so it is necessary to examine the value of enterprises from an integrated perspective.

Another aim of this study is to call for attention to ESG disclosure quality. The previous research titled ESG performance mainly referred to ESG scores, which were also used to stand for transparency [16, 17] and quantity [18]. Some researchers regard ESG scores as ESG quality [19] some researchers used the Bloomberg ESG disclosure score as the measure of disclosure quantity [20]. The existing literature indicates that current scholars predominantly rely on ESG scores as a representation of ESG measurement.

However, concerns have emerged regarding the trustworthiness of ESG ranking. Clément, et al. [21] highlighted that existing scores often measure aspects that are not easily quantifiable, and the methodologies used by most agencies producing these scores lack transparency, and the lack of clarity in the methods employed by several organizations that generate these scores raises further questions. The author pointed out that ESG ratings often fail to truly represent sustainability within the framework of sustainable growth. Dimson, et al. [22] examined the reasons for the variation between prominent providers of ESG ratings, suggesting that these evaluations may not provide a reliable sustainability principles. When used in isolation, these ratings are unlikely to significantly enhance portfolio returns. In 2022, Alexandre Clément also advised caution regarding the exclusive use of ESG scores as a measure, highlighting the difficulties associated with varying methodologies and assessment

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frameworks implemented by different rating agencies. Such discrepancies are concerning, as they lead to a disconnect between the information requirements of stakeholders and the non-financial disclosures provided [23]. Also the regional variations among the assessed firms and the different weights allocated to factors collectively lead to notable disparities in ESG ratings [24, 25].

Nowadays, stakeholders require high quality information to make strategic decisions [26]. As mentioned earlier, most previous studies have focused on the ESG scores, and regard it as a metric for performance, transparency, quantity and quality. Given the critics to ESG scores, this study believe more attention should be paid to the quality of disclosure.

This research investigates existing studies regarding the quality of ESG disclosures, the effectiveness of ESG initiatives, and their impact on corporate valuation, utilizing both bibliometric analysis and systematic review techniques. The study also seeks to explore the foundational theories relevant to this field, summarize key findings from prior studies, and propose directions for future research.

Based on the research aim, this study systematically analyzes the topics, which offers a structured and comprehensive roadmap for future research. In particular, this study aims to explore the following questions:

RQ1: What is the chronological development of publications in ESG aspects?
RQ2: Which countries and authors have had the most influence in this field?
RQ3: What are the recent literature?
RQ4: What are the most keywords used in this field?
RQ5: What are the key research topic in this field?
RQ6: What are the emerging aspects for future research?

This study makes significant contributions to the literature on ESG disclosure and firm value. It assesses the essential problems highlighted by scholars. To begin with, it adds depth to the current understanding of the quality of ESG disclosures, highlighting its essential importance. Moreover, it yields significant understanding by examining the keywords used by authors, which serves as a brief introduction of the current research trend. Consequently, this analysis motivates additional exploration of ESG effects on non-financial value.

2. Literature Review

The discussion in the initial section highlighted ongoing criticisms regarding ESG ratings, Hooks and van Staden [27] noted that at the very least, the assessment of disclosure quality demonstrates a level of transparency. The concept of disclosure quality is often seen as intricate and unclear, necessitating a more precise explanation [28]. Certain scholars have defined the quality of disclosure, García-Meca and Martínez [29] and Tooley and Guthrie [30] defined disclosure as 'level of specificity', while Hooks and van Staden [27] regarded it as 'level of detail'. According to Hopkins [31] the concept of 'disclosure quality' refers to how easy potential investors are able to comprehend and interpret the information provided.

To evaluate the disclosures of companies, a range of methods have been employed, most of which come from the broad category of content analysis. Assessments based on qualitative criteria attempts to evaluate the quality of the disclosures by applying a quality measurement index. The widespread usage of content analysis has made it a valid empirical research tool in measurement of non-financial information. The assessment involves "*codifying qualitative information into related categories in order to obtain quantitative scales of varying levels of complexity*" [32].

The methodology for calculating the disclosure quality score is developed from prior research. Some previous studies [33, 34] evaluated the volume of disclosure as a substitute indicator for assessing the quality of disclosures. Hooks and van Staden [27] believed that differentiating between poor and excellent disclosure yields a more accurate assessment than merely counting the number of statements. According to Hooks, the quality of disclosure is closely linked to the level of reporting, which led to the introduction of a new metric—the quality score assessed per statement. This assessment utilized a 5-

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point scale (ranging from 0 to 4) to assess the level of detail in the disclosures, distinguishing between minimal and comprehensive information. The scale was implemented as follows: 0 = no disclosure, with no discussion of the issue; 1 = minimal coverage, providing little detail—only briefly mentioned; 2 = descriptive, where the impact of the company or its policies was clearly outlined; 3 = quantitative, with the environmental impact explicitly defined in monetary terms or physical measurements; and 4 = exceptional, involving benchmarking against best practices. While a self-calculated score for quality may not perfectly represent disclosure quality, a transparent and replicable framework is needed.

Establishing a solid framework with significant measures is essential for accurately assessing the quality of ESG performance. Arvidsson and Dumay [35] introduced a framework for assessing ESG disclosures, uniquely integrating factors of time and impact. This model evaluates the importance of information in understanding a company's current position (status), progress (development), and performance (targets).

In contrast to conventional approaches that focus exclusively on economic value, this research highlights the necessity of evaluating corporate value through stakeholder interests and their impact. The concept of stakeholder-orientation, as highlighted by Freeman and Phillips [36] stated that an overemphasis on generating value exclusively for shareholders can unintentionally overlook the interests of other stakeholders. The definition of value creation has expanded to include not just financial gains, but also social and environmental impacts.

There is no single embraced definition for "social value", however, it encompasses a broader range of impacts stemming from various projects, entities and initiatives, which encompass the health and prosperity of individuals, the development of social networks [37]. These are typically described as "soft" outcomes, mainly because they are difficult to quantify Wood [38]. Mulgan, et al. [37] introduced four current approaches for measuring social value, which are cost benefit analysis (CBA), social accounting, social return of investment (SROI) and basic efficiency resource (BER) analysis. Nonetheless, the four methods may require substantial personnel training due to their inherent complexity, especially regarding Social Return on Investment. No single approach has been widely adopted throughout academia as the standard for measuring social value. Given the absence of a universal solution, it is crucial for researchers to select the method that aligns closely with the particular circumstances. Wu, et al. [39] divided firm value into economic value, social value and environmental value referring to the "three bottom line theory" investigate how food safety information disclosure has a positive impact on the economic value, social value and environmental value. The author considered social values as responsibility to the public good, responsibility to employees, responsibility to consumers, and responsibility to suppliers. According to Khan and Mohsin [40] social value can be understood as the perceived benefits of a service or product that correlate with particular social aspects, or cultural demographics. The research conducted by Prados-Peña, et al. [41] utilized a Likert-type scale, which was modified based on the findings of Kim, et al. [42] to assess social value in relation to consumers' social images.

The measurement of environmental value can be based on the theory of "Pigou tax". Under the "Pigou tax" [43] when property rights to resources that contribute to environmental improvements are difficult to define, externalities can be addressed through government intervention. For example, for enterprises that actively innovate and develop green products, improve green production technology, and make outstanding contributions to environmental protection, the government will provide financial subsidies, tax rebates, incentives and other incentives, so as to realize that the positive environmental value created by enterprises can be transformed into the internal value of enterprises. On the contrary, when enterprises pollute the environment and cause environmental losses, the government realizes that the external environmental costs of enterprises are transformed into internal costs of enterprises by requiring sewage enterprises to pay sewage charges and imposing administrative penalties on non-compliant enterprises. Wu, et al. [39] evaluated the environmental value as preventive expenditures for environmental protection, rather than the passive payments after being sanctioned by the law for damaging the environment, and represented the active contribution of the enterprise to environmental

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protection. Khan and Mohsin [40] and Prados-Peña, et al. [41] both assessed environmental value by evaluating consumer perceptions regarding ecological matters, such as the increase in population, pollution, energy saving, waste as well as the effects of harmful chemicals on the environment and ecological systems.

3. Methodology and Data

This study employs bibliometric analysis as its main method of analysis. Bibliometric analysis serves as a valuable approach for assessing the influence of scholarly works, illustrating the conceptual landscape of a research area, pointing out existing and emerging trends, as well as highlighting the most prominent journals, authors, and contributions within a filed [44, 45]. This approach is especially useful for performing science mapping, which serves to llustrate the structure and evolution of an academic domain [46].

The analysis of bibliometric data was performed utilizing the VOSviewer application (version 1.6.20), which was developed by Van Eck and Waltman [47] along with CiteSpace, a tool created by Chen [48]. VOSviewer serves as a fundamental tool for creating bibliographic map, offering the visualization in an organized and systematic way [49]. This tool compiles bibliographic information and generates visual representations by analyzing bibliographic connections, co-authorship patterns, keywords that frequently appear together, and co-citation relationships. Therefore, this study primarily employed VOSviewer to analyze journals and authors in this review. Additionally, it explores the most prominent and emerging themes within the field. Secondly, CiteSpace serves as a tool for conducting cluster analyses to reveal research patterns and uncover areas lacking attention. CiteSpace, developed by Chen [48] is an information visualization and analysis software built on the Java programming language. It is designed to analyze co-citation networks using large volumes of bibliometric data [50]. Many researchers have utilized CiteSpace for conducting literature reviews across various topic [51-53]. For instance, Zhao [52] offered an overview of the status of and emerging trends in environmental, social, and governance (ESG) research through a bibliometric approach using CiteSpace. The previous studies showed that CiteSpace can effectively help scholars discover research trends and visualize them.

Data were gathered through the utilization of the Web of Science (WOS) database, which provides a comprehensive and detailed insight into academic research outputs. Web of Science (WOS) is one of the world's most widely used databases to do bibliographic research, provides a large amount of academic research literature in various fields of study [54]. The jointly usage of WOS and CiteSpace was utilized in lots of influential studies [50]. Relevant literature in this field were collected, using the following keywords: ("ESG performance", "ESG disclosure quality", "Disclosure quality", "ESG and firm value", "Content analysis").

Based on the points mentioned above, research flow chart can be seen in Figure 1.

Figure 1. Analysis framework of the study.

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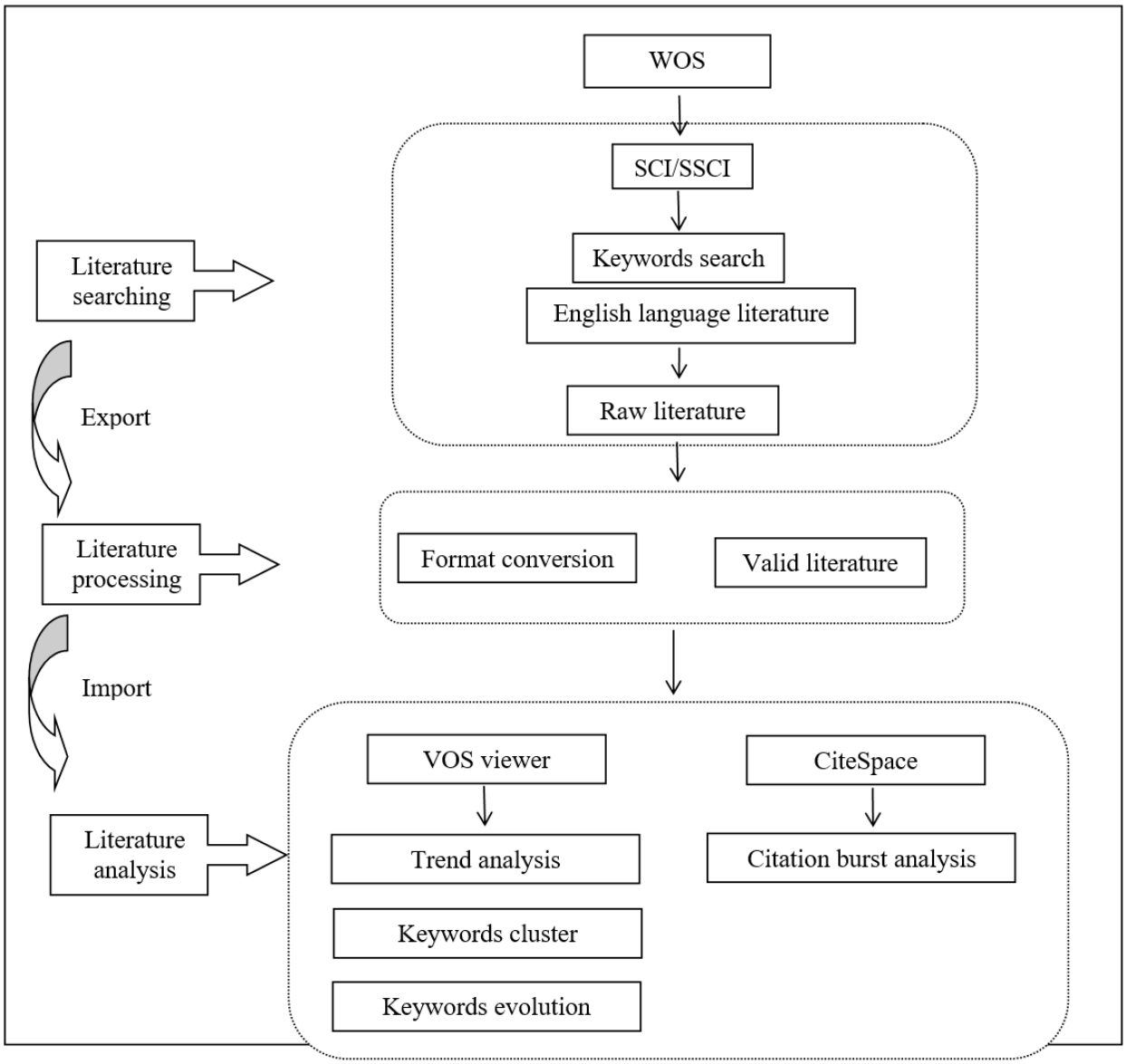

Figure 1.
Research flow chart.

4. Results and Discussion

4.1. The Trend of ESG Performance and ESG Disclosure Quality

As illustrated in Figure 2, the quantity of published articles within the ESG performance research field has been recorded. A total of 890 documents were retrieved from the WOS database after filtering out articles not in English. The increasing interest in this subject can be likely attributed to the emphasis on effective ESG practices and the necessity for stakeholders to prioritize sustainable development alongside financial outcomes [55, 56]. Figure 3 shows the development of research about ESG disclosure quality, using the key words "ESG disclosure quality" and "ESG reporting quality". 11 documents are related to ESG disclosure or reporting quality.

The current observation indicates that there is still a limited amount of research concerning the

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quality of ESG disclosures.

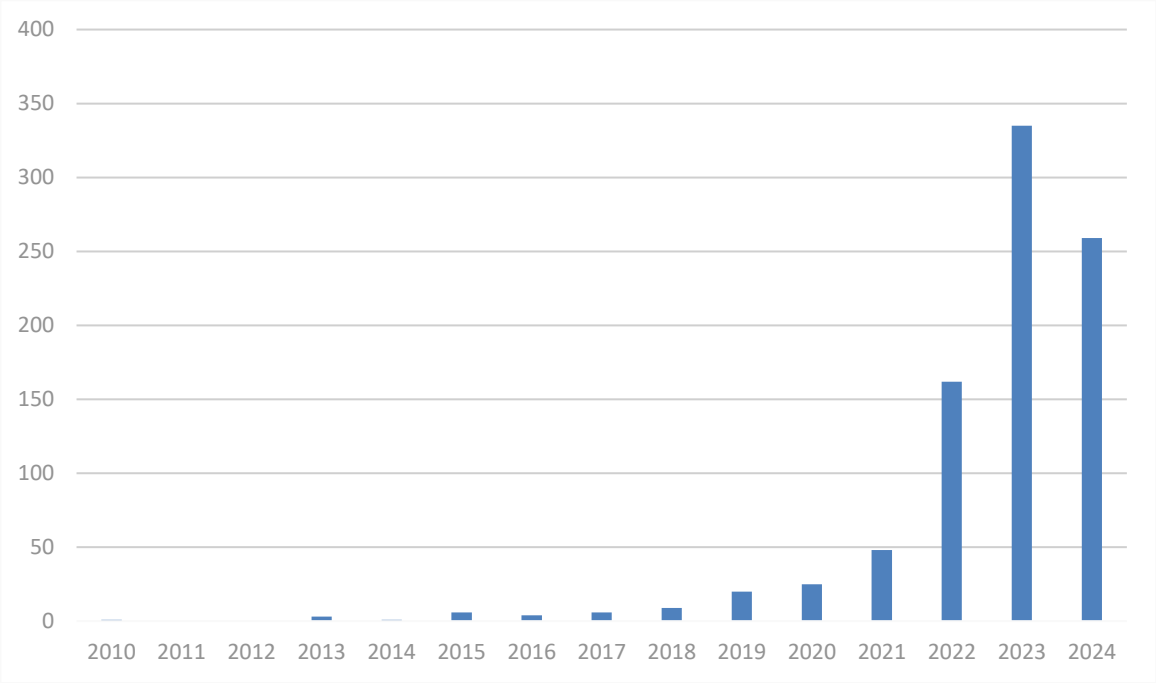

Figure 2.
ESG performance publications trend.

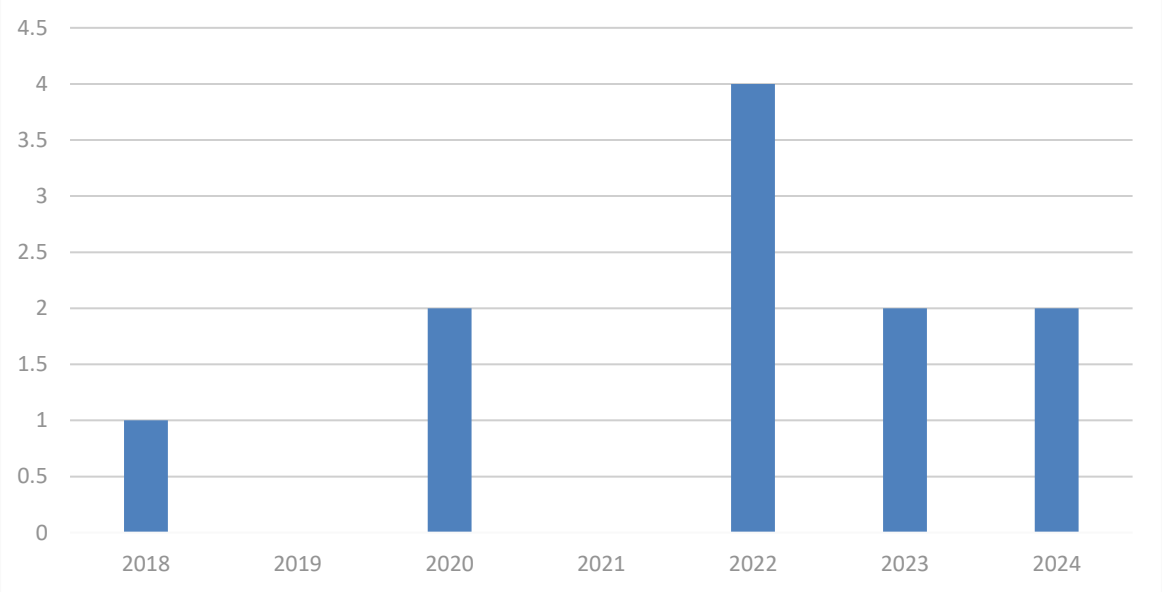

Figure 3.
ESG disclosure or reporting quality publications trend.

Figure 4 indicates that the research frontiers for ESG field is ESG disclosure (sustainability disclosure), the previous research about ESG disclosure mainly applied the ESG score to represent ESG disclosure quality [57-60]. There are three common methods to evaluate disclosure practices. The

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presence or absence method, which concerns whether certain related information is disclosed or not; quantity method, which evaluates how often the information appears; and quality method that focus on the form or type of information disclosed. The method's presence or absence overlooks the quantity and quality of disclosure and the specific types of disclosure significance to users. Hooks and van Staden [27] believed that distinguishing between poor and excellent disclosure provides a better measure of disclosure than a simple measurement of the sentences number, which suggests that greater emphasis should be placed on the quality of ESG information.

Figure 5 shows that the content analysis is highly related to key concepts of disclosure quality, information asymmetry and sustainability, not the rating given by the institutions.

Top 18 Keywords with the Strongest Citation Bursts

Keywords	Year	Strength	Begin	End	2015 - 2024
investors	2015	2.02	**2015**	2018	
cost	2015	1.33	**2015**	2018	
disclosures	2016	1.25	**2016**	2017	
emerging markets	2018	2.89	**2018**	2021	
economic performance	2018	2.4	**2018**	2021	
ownership	2018	2.21	**2018**	2020	
sustainable development	2018	2	**2018**	2019	
corporate social responsibility (csr)	2018	1.98	**2018**	2021	
board	2018	1.61	**2018**	2022	
earnings management	2018	1.39	**2018**	2019	
ceo power	2018	1.21	**2018**	2019	
corporate governance	2018	1.21	**2018**	2019	
stakeholder theory	2019	1.28	**2019**	2021	
corporate sustainability	2017	2.16	**2020**	2021	
stock returns	2021	2.36	**2021**	2022	
social and governance (esg)	2021	1.57	**2021**	2022	
information asymmetry	2022	1.29	**2022**	2024	
responsibility disclosure	2022	1.29	**2022**	2024	

Figure 4.
Citation bursts on the ESG impact.

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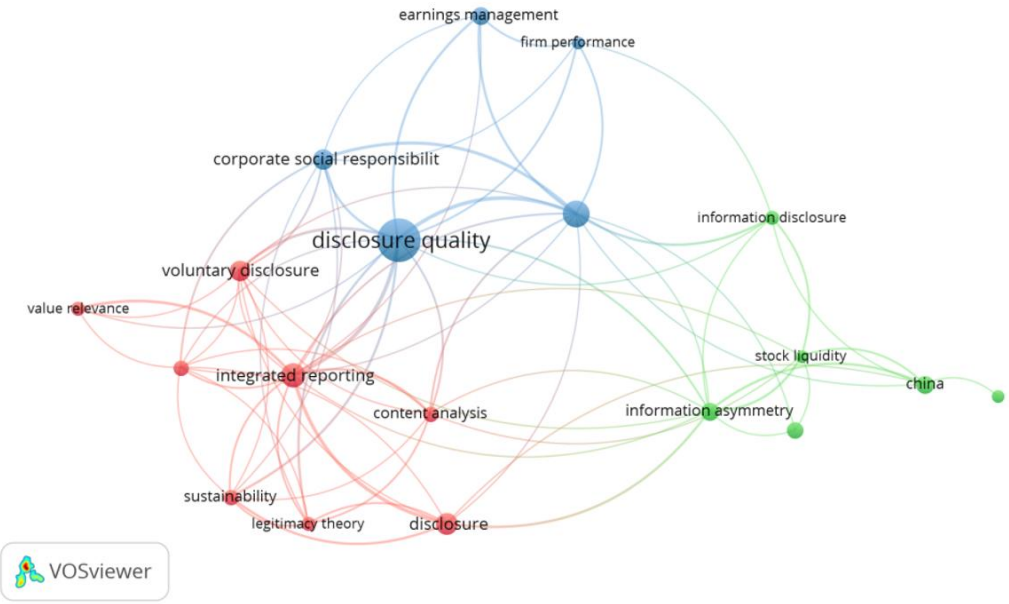

Figure 5.
Keywords visualization on disclosure quality.

However, when it comes to the research about "disclosure quality" and "content analysis", the previous research have largely overlooked the aspect of ESG disclosure quality. Table 1 shows the top 10 paper on disclosure quality and content analysis. The research are mainly about intellectual capital disclosure and general environmental reporting. Figure 6 shows shows the absence of the topic of ESG disclosure quality in present research. The previous research are mainly related to integrated reporting and and the factors that influence them.

Table 1.
Top 10 cited documents on the content analysis and disclosure quality.

No	Author	Country	Year	Citations
1	Pistoni, et al. [61]	Italy	2018	145
2	Melloni [62]	Italy	2015	130
3	Lee [63]	Australia	2017	88
4	Helfaya, et al. [64]	Egypt	2019	63
5	Bini, et al. [65]	Italy	2016	39
6	Subramaniam, et al. [66]	India	2023	38
7	Zharfpeykan [67]	New Zealand	2021	38
8	Bellora and Guenther [68]	Germany	2013	38
9	Dilling and Harris [69]	Canada	2018	35
10	Alkayed and Omar [70]	Jordan	2023	24

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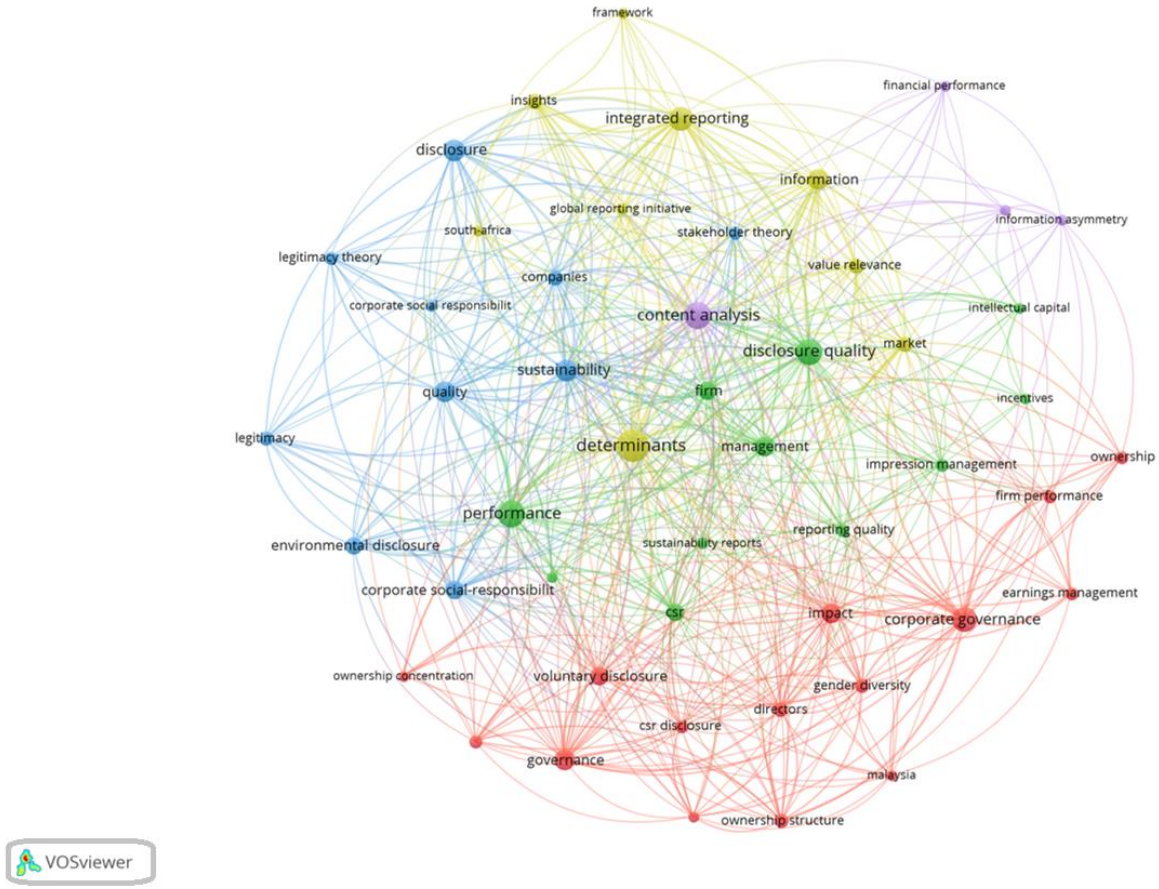

Figure 6.
Keywords visualization on disclosure quality and content analysis.

Figure 7 illustrates the nations that significantly contribute to the studies regarding the quality of disclosures, which include Australia, China, England, Italy, Malaysia, and South Africa.

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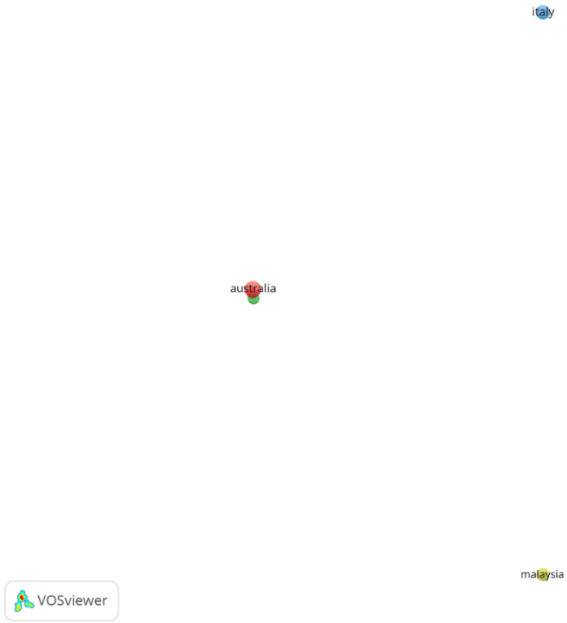

Figure 7.
Country map.

For the research about ESG disclosure quality, this study applied the keywords of "ESG disclosure quality" and "ESG reporting quality". Due to the limited documents on ESG quality, Table 2 only shows the top 5 cited documents from 23 documents, Wasiuzzaman and Wan Mohammad [57], McBrayer [58], Arif, et al. [18] and Wen, et al. [60] all obtained ESG performance scores from independent data providers (Bloomberg, SynTao Green Finance, Sustainalytics database), only Arvidsson and Dumay [35] investigated the quality of ESG disclosure based on how detailed of information disclosed, which is also the most cited reference on ESG disclosure quality. While Arvidsson's study aimed to focus on creating better ESG quality rather than focusing on improving ESG reporting regulations, it did not integrate the method of content analysis, a widely accepted technique for revealing quality.

Table 2.
Top 5 cited documents on ESG disclosure or reporting quality.

No.	Author	Country	Year	Citations
1	Arvidsson and Dumay [35]	Sweden	2022	211
2	Wasiuzzaman and Wan Mohammad [57]	Malaysia	2020	115
3	McBrayer [58]	USA	2018	79
4	Arif, et al. [18]	Pakistan	2021	67
5	Wen, et al. [60]	China	2022	55

4.2. The Trend of the ESG Impact

For the purpose of this study, the document about the relationship of ESG and firm value are screened with two keywords topics "ESG" and "firm value". A total of 300 relevant documents are collected. The top ten documents concerning the effects of ESG were presented in Table 3. Most authors focused on the ESG scores and financial performance [52, 71-74].

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Table 3.
Top 10 cited documents on the ESG impact.

No	Author	Country	Year	Citations
1	Li, et al. [75]	UK	2018	526
2	Xie, et al. [71]	Japan	2019	518
3	Aouadi and Marsat [76]	France	2018	446
4	Brooks and Oikonomou [77]	UK	2018	412
5	Buchanan, et al. [78]	USA	2018	315
6	Yu, et al. [79]	UK	2018	289
7	Wong, et al. [1]	Malaysia	2021	284
8	Capelle-Blancard and Petit [80]	France	2019	247
9	Qureshi, et al. [81]	Norway	2020	235
10	Shakil [82]	Malaysia	2021	226

The previous evaluation has highlighted significant concerns regarding ESG ratings, prompting this study to also examine the evolution of ESG performance and ESG disclosure quality. The following section provides an analysis of the top ten most cited documents on ESG performance and ESG disclosure quality published in the Web of Science (WOS) database between 2010 and 2024. As indicated in Table 4, the theme of the most frequently referenced studies revolves around the influence of ESG factors on financial outcomes. Moreover, some studies have explored ESG performance in integrated reporting practices.

Table 4.
Top 10 cited documents on ESG performance topic.

No	Author	Country	Year	Citations
1	Broadstock, et al. [72]	China	2021	716
2	Xie, et al. [71]	Japan	2019	518
3	Duque-Grisales and Aguilera-Caracuel [83]	Colombia	2021	507
4	Garcia, et al. [73]	Brazil	2017	449
5	Yu, et al. [84]	UK	2020	402
6	Eliwa, et al. [74]	UK	2021	378
7	Lokuwaduge and Heenetigala [85]	Australia	2017	313
8	Zhou, et al. [86]	China	2022	291
9	Huang [87]	Australia	2021	261
10	Galbreath [88]	Australia	2013	244

Co-occurrence analysis was conducted to map the development and evolution of research on ESG and firm value. To ensure a focused and meaningful analysis, this study selected author keywords as the unit of analysis rather than all keywords, thereby improving the accuracy of the findings. A minimum threshold of 7 occurrences was set, resulting in the selection of 24 terms from a total of 798.

The findings are presented in Figure 8. After disregarding the theme words 'ESG' and 'firm value', the keywords that emerge most frequently include social responsibility, governance, financial performance, disclosure, and sustainability. The prominence of these keywords across studies highlights a strong focus on analyzing the ESG impact on financial outcome. The most frequently used theories are the agency theory and stakeholder theory. Carla Malik, et al. [89] also did a systematic review to investigate the theories underlying environmental, social and governance (ESG) disclosure, and found the most applied theories are agency theory, stakeholder theory, legitimacy theory and institutional theory. Stakeholder theory could underpin the transformation of firm value based on shareholder primacy to stakeholder primacy, including the value created for all stakeholders, rather than just shareholders or investors.

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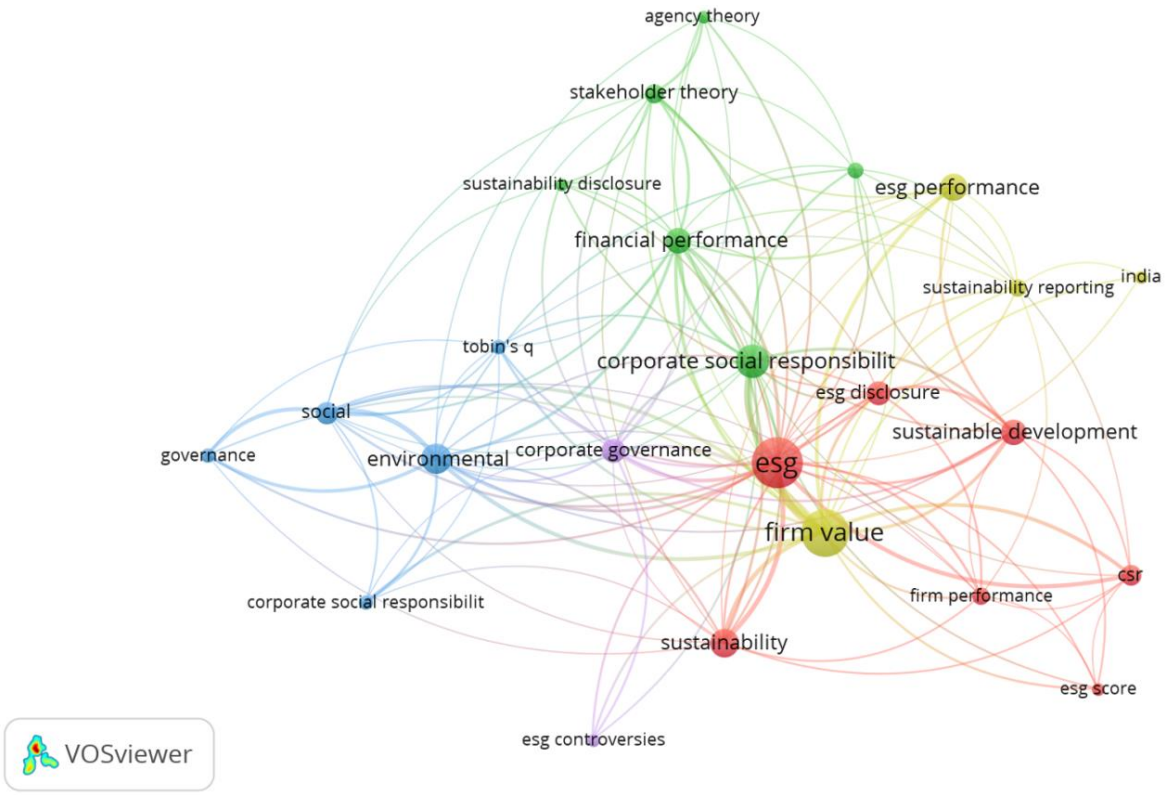

Figure 8.
Keywords visualization on the ESG impact.

The analysis conducted using VOS viewer reveals five primary clusters: ESG disclosure and sustainability and ESG scores (red), corporate social responsibility and financial performance (green), ESG and tobin's q (blue), ESG performance and firm value (yellow) and ESG controversies and corporate governance (purple)

Studies in the purple cluster have considered robust corporate governance as a tool to mitigate adverse impacts and transform disputes into growth opportunities and reputation enhancement [82, 90, 91].

Within the financial performance cluster (red, green, yellow, and blue), research has primarily focused on examining the influence of ESG performance on corporate financial outcomes, using ESG scores as metrics [71, 73, 83]. The clusters have shown a large proportion of research on ESG and financial performance. However, due to the stakeholder orientation and triple bottom line theory, the element of non-financial factors still need attention. Referring to Figure 9, the key word "ESG activities" is related to conflict management. A firm's integration of ESG principles into its operational framework is frequently referred to as promoting sustainable development. Issues related to social and environmental matters frequently arise due to the lack of a robust ESG monitoring system [14].

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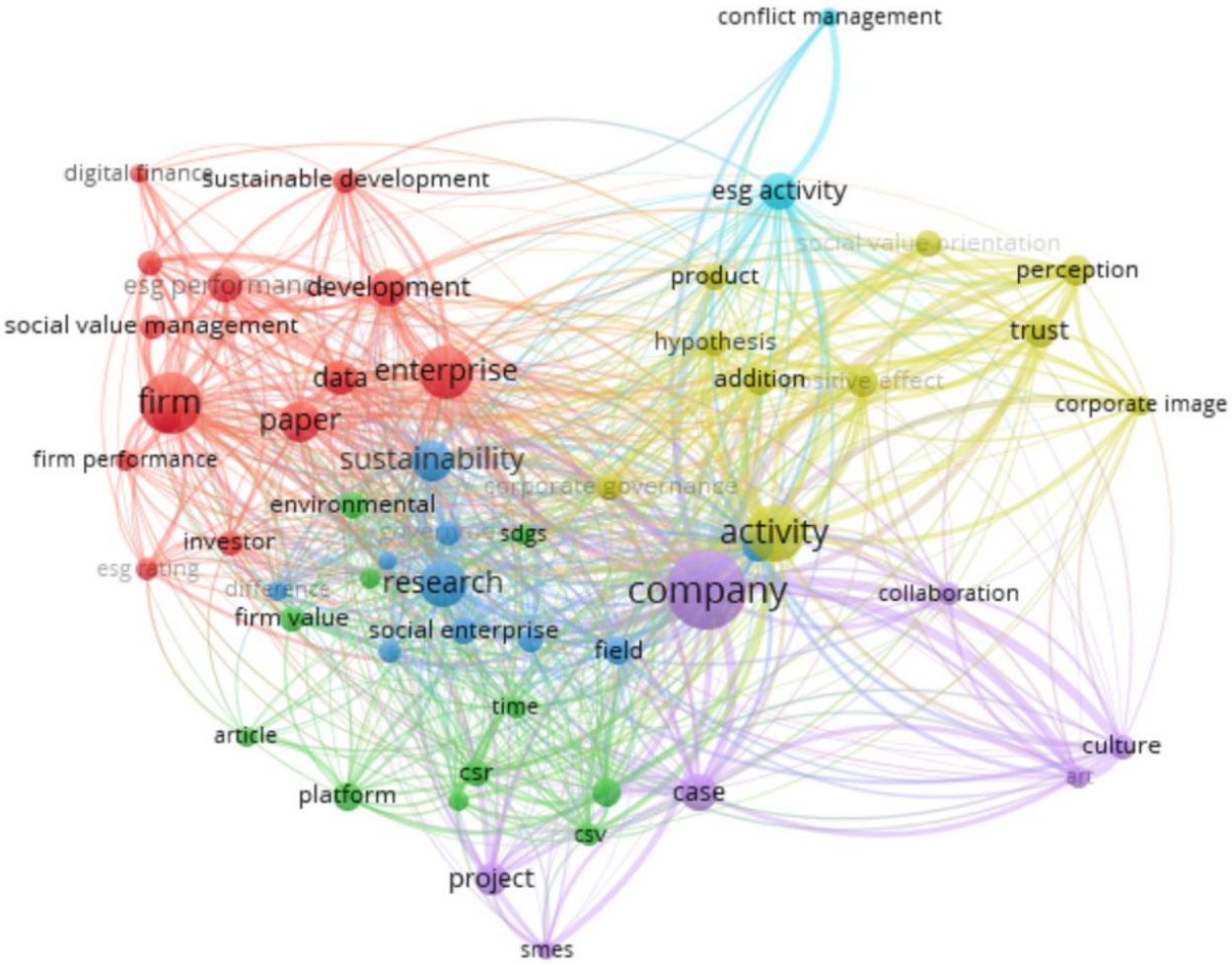

Figure 9.
Keywords visualization on the ESG activities.

Additionally, CiteSpace was utilized to analyze the most frequently used keywords across different stages and to identify development patterns in studies related to ESG and firm value. In Figure 10, CiteSpace systematically categorized the most-cited referenced terms by their frequency and chronological order, producing the time-based visualization, which highlights the most prominent keywords from 2015 to 2024, with 'corporate social responsibility' and 'financial performance' being particularly included in value-relevance research.

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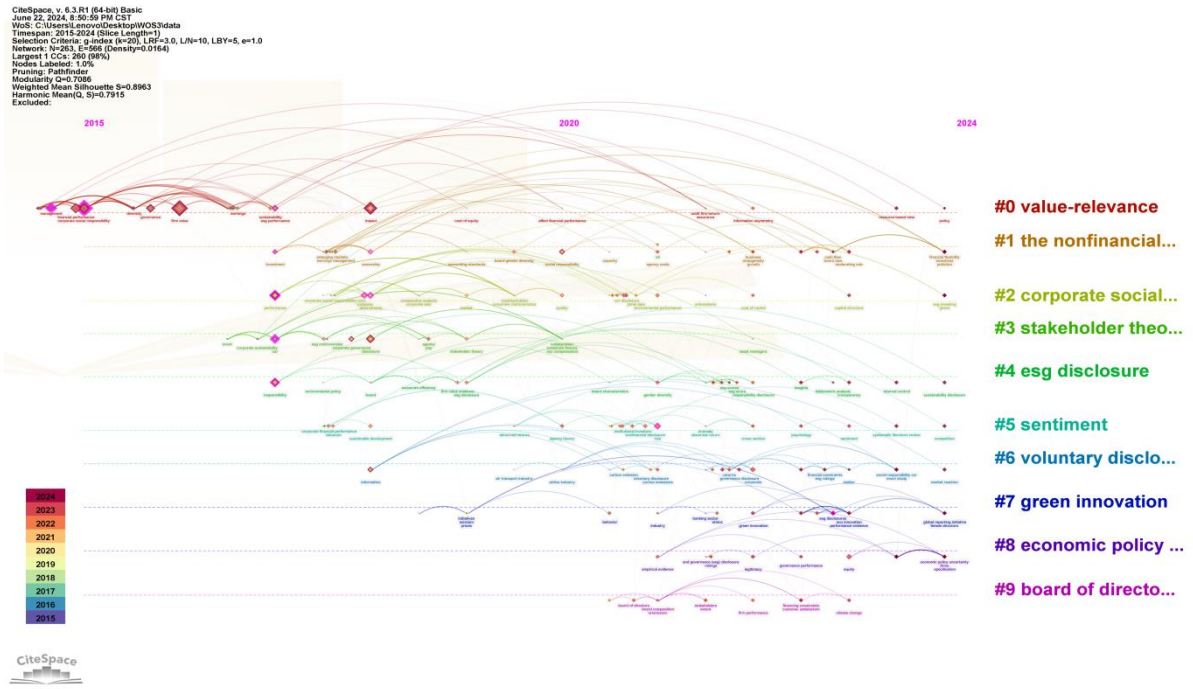

Figure 10.
Evolution in ESG impact over the years.

However, if we use the key words of the topic of "social value" and "environmental value", 181 research are selected and the picture shows these two value are also highly related to "sustainability development" and "value creation".

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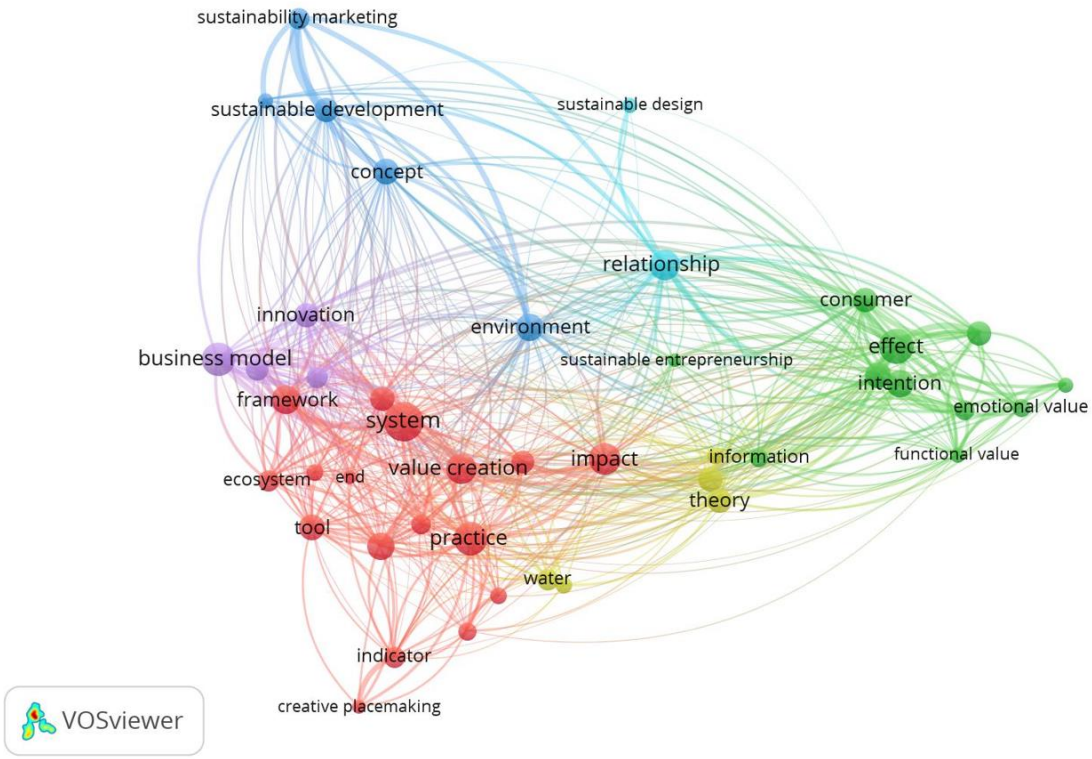

Figure 11.
Keywords visualization on the social value and environmental value.

5. Conclusion

In recent year, the importance of disclosures related to Environmental, Social, and Governance (ESG) factors has received considerable focus within both scholarly research and business practices. Even with its increasing importance, there exists a considerable divergence in understanding and evaluating ESG ratings. Much of this ambiguity stems from insufficient clarity and variations in ESG evaluations, which hinder accurate assessments and comparisons. By examining how ESG influences firm value, this research underlines the necessity for a deeper exploration of the reliability of ESG data reporting and suggests caution when relying on ESG ratings as a measure. Based on the principles of the 'triple bottom line' concept, this research underscores the importance of acknowledging social and environmental considerations.

This study holds both theoretical and practical significance. First, it seeks to offer a thorough overview of ESG performance literature by pointing out the most influential studies and key topics in this field. What's more, by employing bibliometric and trend analysis, it helps researchers understand the latest ESG trends and identify the most cited works, with several clusters being uncovered. The findings of this study can guide ESG disclosure researchers to identify future research directions. For example, a notable gap in the literature regarding ESG disclosure quality has been identified, which this study highlights as an underexplored area of research. Moreover, most studies have discussed about stakeholder theories, it is important for researchers to constantly look into different theories to back up the findings. In addition, most studies have combined ESG performance with financial performance, few investigate comprehensive value such as social value or environmental value. Although there is no embraced measurement for these two value, it is important to consider the economic externality when it comes to ESG reporting impact given the possibility of ESG washing. Further research is needed in this area, as existing studies have predominantly focused on the ESG and financial performance, or the role

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of corporate governance (including the board of directors) in shaping ESG disclosure practices. The significance of ESG quality is increasingly recognized by stakeholders, who are not solely concerned with financial outcomes but also with a company's environmental and social contributions. Firms should strive not only for financial outcome but also for consistent with the Sustainable Development Goals (SDGs), a focus that holds considerable potential for future research. Future studies should also explore other databases to identify and analyze trends in ESG disclosure quality. This study only focuses on documents published in the WOS database. In spite of the data limitations, this study provides an innovative insight on ESG disclosure quality and firm value, which is also a broader perspective for the topic of ESG performance impact on firm value.

Transparency:

The authors confirm that the manuscript is an honest, accurate and transparent account of the study; that no vital features of the study have been omitted; and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.

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