

# Exploring the Shift Toward Sustainable Finance and Financial Reporting: An Extensive Analysis of Emerging Trends, Research Patterns, and Implications for Global Sustainability

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## ABSTRACT

This study presents a comprehensive analysis of the shift toward sustainable finance and financial reporting, examining emerging trends, research patterns, and their implications for global sustainability. The research employs bibliometric analysis to explore the scholarly landscape, identify key areas of focus, and understand the interconnections within the field. The study analyzes publication output over time, identifies influential journals, authors, and institutions, and investigates citation networks. Through content analysis, it identifies emerging research themes and topics within sustainable finance and financial reporting. Additionally, the study explores the implications of sustainable finance and financial reporting for promoting global sustainability and sustainable development. The findings highlight a steady growth in research publications in the field, reflecting the increasing interest in sustainable finance and financial reporting. Key journals, authors, and institutions contributing to the field are identified, indicating the thought leadership and expertise in sustainable finance and financial reporting. Highly cited articles and influential authors shape the discourse and provide valuable references for further research.

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## 1. INTRODUCTION

Growing awareness of the urgent need for global sustainability has encouraged the financial and business sectors to transition to sustainable practices. This shift includes not only integrating environmental, social and governance (ESG) factors into financial decision-making, but also sustainability principles into financial reporting [1], [2]. Sustainable finance and financial reporting play a key role in facilitating responsible

investment decisions, increasing transparency and making informed stakeholder decisions [3].

Sustainable finance and financial reporting have grown rapidly in recent years due to the increasing importance of environmental, social and governance (ESG) factors in corporate strategy and performance. Companies are increasingly disclosing ESG information in their annual reports to meet stakeholders' information needs and

demonstrate their commitment to ESG risk management [4]. The quality of ESG reporting has improved, but there is still a need for more timely, relevant, credible and comparable data to better assess companies' ESG performance [5]. The International Sustainability Standards Board (ISSB) under the IFRS Foundation and the Project Task Force for European Sustainability Reporting Standards are working to develop international sustainability reporting standards [6]. These standards aim to create more complete, coherent, comparable and verifiable information in the area of sustainable development. Green finance policies, such as those implemented in China, have been shown to affect the debt financing costs of heavily polluting companies [7]. These policies aim to internalize environmental externalities and reduce the perception of risk in financial markets and the wider economy. Companies are increasingly adopting sustainable circular economy strategies, as evidenced by an analysis of Brazilian corporate sustainability reporting [8]. These strategies focus on reducing waste, reusing resources and recycling materials to promote a more sustainable and inclusive economy.

The traditional format of financial reporting is complemented by non-financial reporting, which includes information on sustainable development and other ESG factors<sup>6</sup>. This trend is driven by the growing recognition that environmental performance can influence financial performance and risk assessment. Sustainable finance has been shown to promote inclusive growth by fostering collaboration among various stakeholders and providing opportunities for all levels of society to participate in decision-making and resource allocation [9]. These developments highlight the growing importance of sustainable finance and financial reporting in addressing environmental and social challenges, and the need for more robust and standardized reporting frameworks to ensure transparency and comparability across companies and industries.

Several studies have been conducted on sustainable finance and financial reporting using bibliometric analysis.

Research Trends in Islamic Social Finance [10]: This bibliometric study analyzed 595 articles, conference papers and book chapters on Islamic social finance from 1991 to 2020 published in 262 Scopus-indexed journals. The study found that researchers in this field link Islamic social finance to the concepts of sustainability and sustainable development.

How Cultural Dimensions Shape Social Expectations: The Case of Non-Financial Reporting of State-Owned Enterprises in Europe [11]: This study uses content analysis to investigate the disclosure levels of 22 European state-owned enterprises and qualitative comparative analysis to show how Hofstede's cultural dimensions shape social expectations in non-financial reporting.

The Surge in Social and Environmental Governance Reporting and the Sustainable Development Goals: Some Normative Thoughts [12]: This article analyzes the risks and opportunities of ESG practices and the impact of various stakeholders on the measures, tools, and frameworks, including the SDGs, used in different sectors to report sustainability performance.

Non-Financial Reporting Research in Developed and Developing Countries [13]: This study assesses the key content and future research suggestions reported in previous non-financial reporting research in developed and developing countries, and offers recommendations for future research.

Mapping Research on Sustainable Stock Indices: A Bibliometric Review from 2001 to 2022 [14]: This paper presents a bibliometric review and visual analysis of the literature on Sustainable Stock Indexes (SSIs) for the period January 2001 to March 2022, with the aim of reporting trends, knowledge structures and directions of knowledge development, and identifying future research in the field of SSIs theme.

The purpose of this paper is to provide a comprehensive analysis of the shift

to sustainable finance and financial reporting, exploring emerging trends, research patterns, and implications for global sustainable development. To achieve this, we use bibliometric analysis, which provides a systematic and quantitative approach to understanding the academic landscape and identifying key areas of focus for the field.

### **Sustainable Finance**

Since businesses and financial institutions have begun to notice the urgent need to address environmental and social issues while preserving long-term financial stability, the transition to sustainable finance and financial reporting has drawn a lot of attention. This survey of the literature gives a broad overview of the body of knowledge on sustainable finance and financial reporting and examines current theories, key ideas, developing trends, and real-world applications [2], [15], [16].

In order to integrate environmental, social, and governance (ESG) considerations into financial decision-making, there is a body of literature on sustainable finance that analyzes the conceptual underpinnings and framework. The review discusses the evolution of sustainable finance principles, highlighting concepts such as impact investing, green finance, and socially responsible investing. It also examines the international initiatives and frameworks shaping sustainable finance, including the UN Sustainable Development Goals (SDGs) and the Paris Agreement [1], [17], [18].

Financial reporting for sustainability has become an important aspect of corporate transparency and accountability. The literature on sustainability reporting guidelines, including the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB), is reviewed in this section. It examines the formation of frameworks like the Task Force on Climate-related Financial Disclosures (TCFD), which strives to enhance disclosure of climate-related risks and opportunities, as well as the development of integrated reporting. [19]–[21].

## **2. METHODS**

The research methodology begins with comprehensive data collection from relevant academic databases, such as Scopus, Web of Science, or similar platforms. These databases provide access to a wide range of scholarly articles, conference papers, and other relevant publications in the field of sustainable finance and financial reporting. The data collection process involved identifying relevant keywords and drafting search queries that captured key themes and concepts within the research domain.

### **Selection Criteria**

To ensure inclusion of high-quality and relevant publications, specific selection criteria were applied. Such criteria may include:

- a. Time period: Research focuses on a specific period, such as the last decade, to capture the latest developments in the field.
- b. Publication type: Scholarly articles, conference papers, and reviews are considered for inclusion, while excluding irrelevant document types such as editorials or book reviews.
- c. Relevance: Publications should be directly related to sustainable finance, financial reporting, or their intersection, with a focus on global sustainability implications.
- d. Language: English and Indonesian publications are preferred to ensure completeness and facilitate analysis.

By applying these selection criteria, a dataset of relevant and focused publications was obtained for further analysis.

Bibliometric analysis is a quantitative method used to analyze patterns, trends, and interrelationships among academic publications. In this study, bibliometric analysis was used to gain insight into the scholarly landscape of sustainable finance and financial reporting.

Table 1. Data Metrics Results

Publication years:	2001-2023
Citation years:	22 (2001-2023)
Papers:	100
Citations:	3229
Cites/year:	146.77
Cites/paper:	32
Authors/paper:	1.86
h-index:	25
g-index:	55
hI,norm:	22
hi,annual:	1.00
hA-index:	18
Papers with ACC $\geq$ 1,2,5,10,20:	95,76,44,27,17

### 3. RESULTS AND DISCUSSION

To achieve the initial objective of this research, which focused on the classification of Sustainable Finance articles, the VosViewer software was used. By utilizing the title and abstract fields and applying the binary counting method, they managed to identify a total of 619 terms. In an attempt to analyze further, only 128 terms were selected by setting a minimum occurrence threshold of 10 times. However, it should be taken into account that for each of the 128 terms, a relevance score will be calculated. Considering the default selection threshold of 60%, only the most relevant terms would be automatically selected, resulting in 77 corresponding words. However, it is important to manually verify the words by removing unrelated terms, such as editorial, sample, abstract, and others. After verification, the number of words eligible for map generation finally reached 69 words.

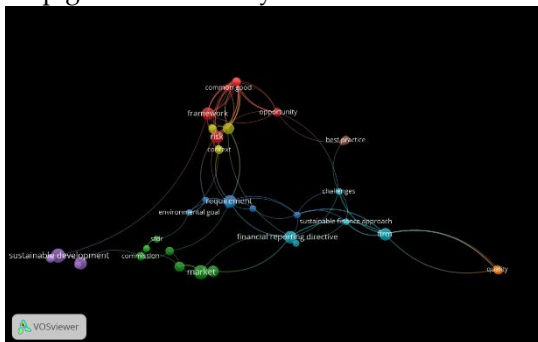


Figure 1. Result Mapping

Based on Figure 1 above, it is very interesting to discuss financial sustainability articles in the classification, it seems that each cluster has a connection but the discussion of sustainability is still experiencing gaps.

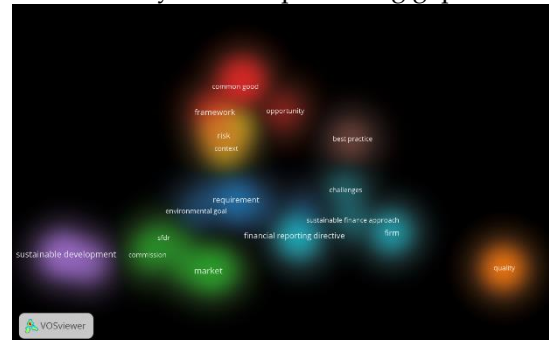


Figure 2. Mapping of Cluster Results

The figure above shows how the clusters form areas of accounting and financial sustainability that will be explained in more detail in the table below:

Occurrences in this study are described in a comprehensive manner as below:

Table 2. Occurrence

Cluster	Total Items	Most frequent keywords (occurrences)	Keyword
1	(9)	Financial reporting (15)	Framework, Incentive, Long term, opportunity, quarterly financial reporting, risk, shareholder value, short termism
2	(4)	Sustainable financial (13)	Climate Neutrality, financial market, sustianable financial, market, growth
3	(4)	Financial system (15)	Environmental goal, financial system, requirement, sustainable finance,
4	(4)	Management (15)	Management, international financial resourcess, sustainable

			financial framework
5	(5)	Green finance (15)	Financial sector, green finance, sustainable development, sustainable economy, sustainable financial system
6	(5)	Financial regulation (15)	Challenges, Financial regulation, financial reporting direct, firm, sustainable finance approach
7	(4)	Financial (10)	Financial, pandemic era, quality, vietnamese enterprise
8	(1)	Innovation (15)	Innovation

There is one cluster from this mapping that appears at least in keywords, namely clusters one to 8. This cluster includes topics on the digitization of sustainability accounting and finance, there are keywords that have not been widely exposed such as Sustainable finance, market finance, financial resources, green finance.

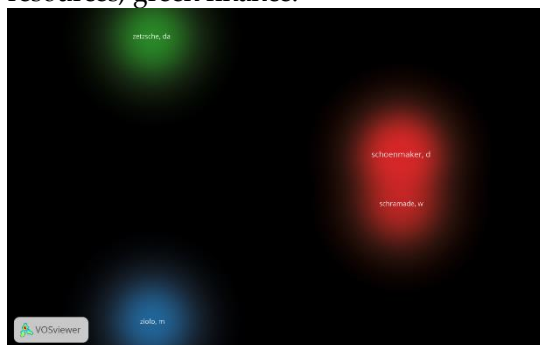


Figure 3. Author Analysis

The figure above shows where there are several major authors in the field of accounting and finance with their citations and the average article has been cited in more than 1000 references.

Table 3. Authors with the Most Citations

Citation	Author & Years	Title
1537		Life 3.0: Being human in the age of artificial intelligence

1090		Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy
1087		The role of artificial intelligence in achieving the Sustainable Development Goals
839		Robot-proof: higher education in the age of artificial intelligence
672		Our final invention: Artificial intelligence and the end of the human era
521		Principled artificial intelligence: Mapping consensus in ethical and rights-based approaches to principles for AI
472		Artificial intelligence policy: a primer and roadmap
458		Will democracy survive big data and artificial intelligence?
444		Artificial intelligence in education
437		On banning autonomous weapon systems: human rights, automation, and the dehumanization of lethal decision-making

From 2001 to 2023, it appears that documents on accounting and finance, especially on sustainability, are the most explicitly cited reference sources. However, the trend shows that more recent material is less likely to be cited, so future research could fill this gap.

Table 5. Keywords of most and least occurring terms

Most occurrences		Fewer occurrences	
Occurrences	Term	Occurrences	Term
8	Sustainable Development	2	Engagement
8	Market	2	Long term equity investment
7	Regulation	2	Sustainable economy
6	Risk	2	Contribution
6	Firm	2	IFRS
5	Framework	2	Climate neutrality

5	Financial reporting directive	2	Innovation
4	Requirement	2	Sustainable financial system
4	Financial Market	2	Sustainable financial measure
3	Green Finance	2	Financial regulation

The ultimate goal of this research is to identify variables that have the potential for further research in the future. Some of the keywords that may be relevant for future research are expressed as Sustainable finance, market finance, financial resources, green finance. The findings of this study provide insights into digitalization in accounting and finance. In addition, the low frequency of occurrence in this study indicates that the potential for further research is very high in this regard.

## CONCLUSION

The results of this study provide valuable insights into the shift toward sustainable finance and financial reporting. The analysis of publication output, top journals, authors, institutions, citation networks, and emerging research themes highlights the growing interest in and importance of sustainable finance and financial reporting for global sustainability.

By leveraging the findings from this study, researchers, practitioners, and policymakers can gain a deeper understanding of the key trends, research gaps, and implications of sustainable finance and financial reporting. This knowledge can guide efforts to promote responsible investment practices, enhance transparency, and align financial decision-making with sustainable development goals, ultimately contributing to a more sustainable and resilient future.

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