

Exploring the Multidimensional Landscape of Sustainable Finance: A Thematic Analysis Approach

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Abstract

This study aims to comprehensively explore the multidimensional landscape of sustainable finance through a thematic analysis approach. With a dataset of 138 articles retrieved from the Scopus database, the study employs VOSviewer for co-word analysis, revealing four interconnected thematic clusters. These clusters, representing economic, environmental, social, and governance dimensions, provide a structured framework that underscores the intricate relationships within sustainable finance. The findings illuminate the interplay between these dimensions, offering valuable insights for researchers, practitioners, and policymakers to navigate the complex field of sustainable finance and promote informed decision-making. The implications of this study extend to fostering more holistic financial practices that consider economic growth, environmental preservation, social equity, and ethical governance in tandem, thereby contributing to a more responsible and inclusive financial future.

Keywords: *Sustainable Finance, Economic, Environmental, Social, Governance*

Introduction

In an era marked by unprecedented global challenges such as climate change, social inequality, and resource depletion, the intersection of finance and sustainability has emerged as a critical nexus for driving positive change (Hariram, et al., 2023). The concept of sustainable finance has gained prominence as a framework that seeks to reconcile economic growth with environmental preservation and societal well-being (Kumar, et al., 2022). As financial systems become increasingly intertwined with broader ecological and social contexts, the exploration of sustainable finance requires a nuanced understanding that goes beyond traditional economic paradigms (Poyser & Daugaard, 2023).

Sustainable finance holds paramount importance as a pivotal driver of responsible economic growth and global well-being (Ziolo, et al., 2019). In a world grappling with pressing environmental challenges, sustainable finance offers a strategic pathway to channel financial resources towards environmentally sound projects and initiatives (Lee, 2020). By integrating environmental, social, and governance considerations into financial decision-making, sustainable finance not only safeguards natural ecosystems but also fosters social inclusivity and ethical governance (Quatrini, 2021). Moreover, sustainable finance serves as a catalyst for innovation,

encouraging businesses and industries to develop innovative solutions that mitigate environmental risks, promote social equity, and ensure long-term financial resilience (Bhatnagar, et al. 2022). The construct of sustainable finance has been defined in several ways. It refers to the practices of financial management that consider at least one of the sustainability dimensions (Migliorelli, 2021). The definition highlights the multifaceted nature of sustainable finance. Additional definitions from the literature further complement this notion. For instance, Wilson (2010), discussed three dimensions (Economic, Environmental and Social) of sustainable finance. Swiss Sustainable Finance (2016) also focused on three dimensions, i.e. environmental, social and governance. Moreover, Schoenmaker (2018), has highlighted the environmental, social and governance components in the sustainable finance framework. These definitions imply that contrary to the conventional finance, the holistic nature of sustainable finance goes beyond mere financial returns, encompassing a broader range of outcomes that encompass ecological sustainability, social equity, and transparent governance (Chiu, 2022).

After the introduction of sustainable development goals (SDGs), several steps have been taken on global level to incorporate the sustainability considerations in financial decision-making process. These steps include developing green bonds strategies in China (Ziolo, et al., 2019), European Union's taxonomy of sustainable finance (Lucarelli, et al., 2020), and practices for sustainable finance in Japan (Schumacher, Chenet, & Volz, 2020). In the context of South Asia, India and Bangladesh also developed their framework for sustainable finance (Goel, 2021; Rashid & Uddin, 2019). In Pakistan, the key regulatory bodies, State Bank of Pakistan (SBP) and Securities and Exchange Commission (SECP) have issued the guidelines for green banking and code of corporate governance respectively to incorporate sustainability in decision making process (SECP, 2019; State Bank of Pakistan, 2017).

In recent years, the conceptual boundaries of sustainable finance have expanded beyond traditional environmental concerns to encompass an array of interconnected dimensions, including climate resilience, human rights, gender equality, supply chain ethics, and technological innovation (Kumar et al., 2022). However, these dimensions are scattered in the literature and little attention has been paid to explore these dimensions through a rigorous method of thematic analysis. This knowledge gap highlights the growing need of unveiling the multifaceted nature of sustainable finance in a more scientific manner.

The problem addressed in this study pertains to the need for a comprehensive understanding of the multidimensional landscape of sustainable finance. While sustainable finance encompasses economic, environmental, social, and governance dimensions, there is a dearth of systematic analyses that extract and categorize these dimensions. This gap hinders the ability of researchers, practitioners, and policymakers to navigate the intricate relationships among these dimensions and make informed decisions that contribute to responsible and inclusive financial practices.

Objective of this study is to explore the complex and multidimensional structure of sustainable finance through thematic analysis. Thematic analysis is a qualitative research technique to identify of repeated themes and outlines in textual data (Kiger & Varpio, 2020). Through this approach, the present study aims to identify the fundamental dimensions that build the structure of sustainable finance. For this purpose, the data comprising literature on sustainable finance is

obtained from Scopus database. The Scopus database encompasses an extensive collection of peer-reviewed scholarly literature, providing a comprehensive platform for research and analysis across various disciplines (Baas, et al. 2020).

This study has valuable significance not only for researchers but for practitioners and policy makers too. The findings will contribute to the increase the existing body of knowledge in the area of sustainable finance. It will also enable management to make informed decisions and develop financial strategies accordingly. Moreover, regulatory bodies will also be able to make policies for business sector operations in the light of these findings.

Literature Review

Sustainable finance has emerged as trending topic among researchers in recent years. This trend reflects the rising acknowledgement of the interrelatedness of business, environment and society. The literature surrounding sustainable finance is rich and diverse, encompassing a wide array of definitions, frameworks, and paradigms that collectively contribute to a comprehensive understanding of its multidimensional nature. Formulating a universally accepted and mutually agreed-upon definition of sustainable finance has been a formidable challenge. Yet, different scholars have defined the construct in their own way. For instance, Wilson (2010), defines it as the study of finance which considers societal and ecological components along with the economic benefits of financial decision making. Swiss Sustainable Finance (2016) also presented a comprehensive overview of the concept and described it as the finance that integrates ESG criteria into asset management, investing, risk management and capital budgeting. In their framework, Schoemaker (2018), identified sustainable finance as an approach of financial decision making that looks beyond mere financial returns and focuses on environmental and social context as well. In an attempt to formulate a workable definition of the construct, Migliorelli (2021) defined sustainable finance as a practice of making financial decisions taking at least one of the sustainability dimensions into account.

Evolution of sustainable finance paradigm has resulted in producing abundant literature and developing various regulatory frameworks. These frameworks include Chinese green bonds market which was initiated in 2015 and is the largest green bond in the world (Azhgaliyeva, Kapoor, & Liu, 2020). European Union also developed taxonomy of sustainable finance. The EU taxonomy of sustainable finance is a comprehensive classification system that establishes clear criteria and guidelines for determining the environmental sustainability of economic activities within the European Union. It aims to facilitate informed investment decisions by providing a standardized framework to identify activities that contribute to environmental objectives, such as climate change mitigation and biodiversity preservation (Lucarelli et al., 2020). United States has taken several steps such as the Principles for Responsible Banking and the Task Force on Climate-related Financial Disclosures (TCFD). These initiatives tend to encourage ESG integration and disclosure practices within the financial sector of United States (Ngo, et al., 2022). Similar initiatives have been taken by South Asian countries including India and Bangladesh as well (Goel, 2021; Rashid & Uddin, 2019).

Like other countries, Pakistan, too has taken steps to integrate sustainability principles in financial sector. For instance, state bank of Pakistan formulated green banking guidelines for

commercial banks in the country. Implementing these guidelines could help financial institutions integrate sustainability practices to banking operations (State Bank of Pakistan, 2017). Moreover, SECP also has made amendments its code of corporate governance in order to make corporate sector more sustainable. These amendments underscore the integration of ESG criteria into corporate decision-making processes and urge companies to adopt sustainable business practices. Through incorporating ESG considerations, the amended code aims to enhance transparency and accountability, along with long-term value creation (SECP, 2019). These practices will help to align the corporate governance framework with principles of sustainable finance and responsible business conduct.

The global emphasis on sustainable finance has generated a substantial body of literature which is accessible through various databases including Scopus. Scopus is a comprehensive abstract and citation database that covers a wide range of disciplines, providing access to a vast collection of peer-reviewed literature, including articles, conference papers, and patents. With its extensive coverage and advanced search features, Scopus facilitates research discovery, analysis, and collaboration for scholars, researchers, and professionals (Baas, et al., 2020). Previously, numerous studies have approached the analysis of sustainable finance literature from various perspectives. These studies include systematic literature review by Ferreira, et al., (2016), review of literature discussing nexus of sustainability and financial performance by Alshehhi, et al., (2018), assessment of opportunities and challenges of sustainable finance by Rotaru, (2019) and review of sustainable research published in Journal of Sustainable Finance and Investment by Alshater, et al., (2021).

Contemporary research examining the literature on sustainable finance tends to concentrate on analysing various facets within the extensive body of scholarly works sourced from databases such as Scopus and Web of Science. These studies comprise of bibliometric analysis of scientific literature by (Kumar et al., 2022) interdisciplinary review by Tao et al., (2022) and recently meta analysis by Atz, et al., (2023).

While these studies have explored diverse aspects of the existing literature, such as keywords, sources, authors, and research origins, there remains a gap in research dedicated solely to the extraction of dimensions within the realm of sustainable finance. This study endeavors to address this gap by employing a thematic analysis approach to examine the literature retrieved from Scopus. Thematic analysis is structured approach that helps in understanding the complex content scattered within the data. This feature makes it an important tool for solving complex research problems (Kiger & Varpio, 2020). This approach helps extracting eloquent insights that contribute to improve the sustainable finance practices.

Given that sustainable finance involves a multitude of stakeholders rather than solely shareholders, the study's theoretical framework is grounded in stakeholder theory. This approach recognizes the broader societal impact of sustainable finance and emphasises on addressing a wide range of stakeholder interests beyond shareholders (Freeman, 1984; Stieb, 2009).

Methodology

A scientific approach of thematic analysis was employed in this research to extract multiple dimensions of sustainable finance. In first step, relevant articles containing the term "sustainable

finance" in title or abstract were downloaded from Scopus database. To get most relevant data, different filters were applied including research category, publication type, and language. The final dataset comprising 138 articles in the category of management and business studies was retrieved and imported to VOSviewer for further analysis.

While primarily utilized as a bibliometric analysis tool, VOSviewer offers valuable support in identifying thematic patterns within a corpus of literature. By evaluating co-occurrence of keywords, VOSviewer helps in identifying thematic clusters. These clusters enable the researchers to determine primary themes and topics. This unique combination of bibliometric and thematic analysis strengthens its importance in exploring the multidimensional structures of different research areas (Jan & Ludo, 2010).

After refining the dataset, the study analyzed co-occurrence patterns of keywords using VOSviewer to uncover potential thematic clusters. Building on the insights gained from co-occurrence analysis, the study develops a primary thematic structure. To perform thematic analysis, the study has employed co-word analysis method suggested by He (1999) and adopted by Romo-Fernández, et al., (2013). Keywords with frequent co-occurrences are manually grouped under distinct themes. The process involved categorizing related keywords into cohesive sub-themes. These interrelated sub-themes were subsequently organized into four overarching main themes: Economic, Environmental, Social, and Governance. These themes help categorize keywords, offering a clearer picture of the diverse dimensions of sustainable finance.

To ensure accuracy, the study validates and refines the thematic structure by reviewing original articles corresponding to each theme. This process guarantees that the categories accurately reflect the content of the literature, enhancing the overall credibility of the findings

Results and Discussion

Bibliometric analysis is a tool of reviewing the literature systematically when the data is too large to be handled manually. Since this study analyses 138 articles, bibliometric analysis was initially employed to assess the co-occurrence of the keywords. Subsequently, the interrelated keywords were systematically categorized under their respective dimensions. The findings of the study are discussed as under

Co-Occurrence Analysis

Co-occurrence analysis was performed on both abstract and author keywords using VOSviewer, resulting in the generation of a network visualization map. This map was refined by excluding irrelevant terms, yielding a clearer representation of thematic relationships. Figure 1 represents the network visualization of the analysis.

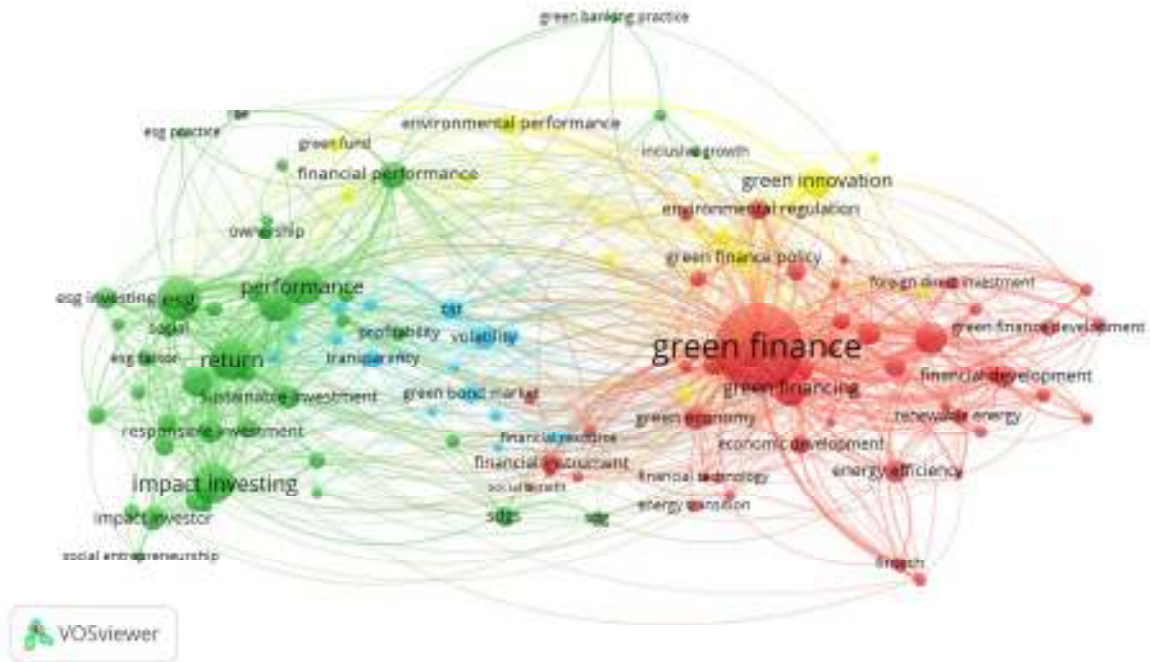


Figure 1: Co-Occurrence Analysis

Figure 1 shows four clusters of the frequently occurring terms. Each cluster is represented by a different colour. The red cluster shows green finance and related terms like green economy, energy transition, renewable energy, fintech, green finance policy etc. The Blue cluster highlights components like profitability, corporate social responsibility, volatility and financial resources etc. The green cluster comprises of investing and financial performance related terms including sustainable investing, impact investing, responsible investing, financial performance, return on equity, social entrepreneurship etc. The yellow cluster indicates the items related to environmental aspects of sustainable finance like environmental performance, green fund, and green innovation. Nonetheless, it is worth noticing that the clusters contain a mixture of items and do not represent a separate dimension of sustainable finance. For this purpose, thematic analysis was carried out manually to extract the dimensions of sustainable finance.

Thematic Analysis and Dimensions’ Extraction

Dimensions of sustainable finance were extracted through combining the related items under one broader theme. Since the number of items in study was huge enough to be handled, items having similar meaning or context, like climate change mitigation, mitigation, climate mitigation or items with different spellings like healthcare and health care etc are considered as single item which has shrunk the total number of items in dimension extraction. In addition to this the terms existing in singularity which could not relate to any other term directly were ignored. Thematic analysis of sustainable finance literature shows that the items representing the sustainable finance

can be combined under four broader dimensions i.e., Economic, Environmental, Social and Governance. Table 1 highlights the dimensions of sustainable finance.

Table 1 Dimensions of Sustainable Finance

Items	Sub Themes	Main Themes
Revenue		
Liquidity		
Value Creation	Profitability	
Financial Return		
Market Value		
Financial Risk		Economic
Investment Decision	Investing and Financing	
Capital Structure		
Gross Domestic Product		
Public Finance	Macro Economic Indicators	
Economic Performance		
Climate Change		
Green Finance	Climate Finance	
Adaptation and Mitigation		
Renewable Energy		
Green Bond and Investment		
Carbon Emission		
Energy Consumption		
Air Pollution		Environmental
Land Use	Land and Water Conservation	
Conservation		
Water Management		
Agriculture		
Forest	Agriculture and Biodiversity	
Biodiversity		
Health System		
Health Care	Health and Safety	
Public Health		
Mental Health		
Employment		
Development Finance	Poverty Reduction and	Social
Poverty Reduction	Employment	
Social Protection		
Income Inequality		
Social Protection	Equality and Justice	
Gender Equality		
Law		
Taxation	Accountability	
Financial Regulation		Governance
Ownership	Control	

Shareholder	
Institutional Investor	
Decentralization	
Policy Implication	Transparency
Structural Reform	

The table provides a comprehensive breakdown of dimensions within the realm of sustainable finance, categorizing them into four main thematic areas: Economic, Environmental, Social, and Governance. Each dimension represents a focal point for analyzing the sustainability aspects of financial practices.

Under the Economic dimension, the table explores aspects such as Revenue, Liquidity, Value Creation, Financial Return, and Market Value. These indicators shed light on how financial activities contribute to economic growth, stability, and value generation.

In the Environmental dimension, the focus shifts to Climate Change, Green Finance, Renewable Energy, Carbon Emission, and Energy Consumption. These items emphasize the role of finance in addressing environmental challenges, promoting cleaner energy sources, and reducing carbon footprints.

Moving to the Social dimension, dimensions like Health System, Health Care, Mental Health, Employment, and Poverty Reduction come to the forefront. This section highlights the significant influence of sustainable finance on societal well-being, healthcare, and social equity.

In the Governance dimension, crucial aspects such as Law, Taxation, Financial Regulation, Ownership, and Shareholders are examined. These elements underscore the importance of regulatory frameworks, responsible ownership, and legal considerations in sustainable financial practices.

It's important to note that these dimensions and associated items provide a structured framework to comprehensively analyze the various facets of sustainable finance. By categorizing these considerations, the table offers a clear overview of the multifaceted landscape that sustainable finance encompasses, enabling a deeper understanding of its implications across economic, environmental, social, and governance sphere.

Sustainable Finance Framework

The findings presented above offer a comprehensive and insightful overview of the existing literature on sustainable finance. Building upon these findings, a structural framework for sustainable finance was constructed to provide a visual representation of its multidimensional nature and interrelated components. The schematic representation of this framework is depicted in Figure 2, illustrating the interconnected dimensions and thematic clusters that characterize the landscape of sustainable finance.

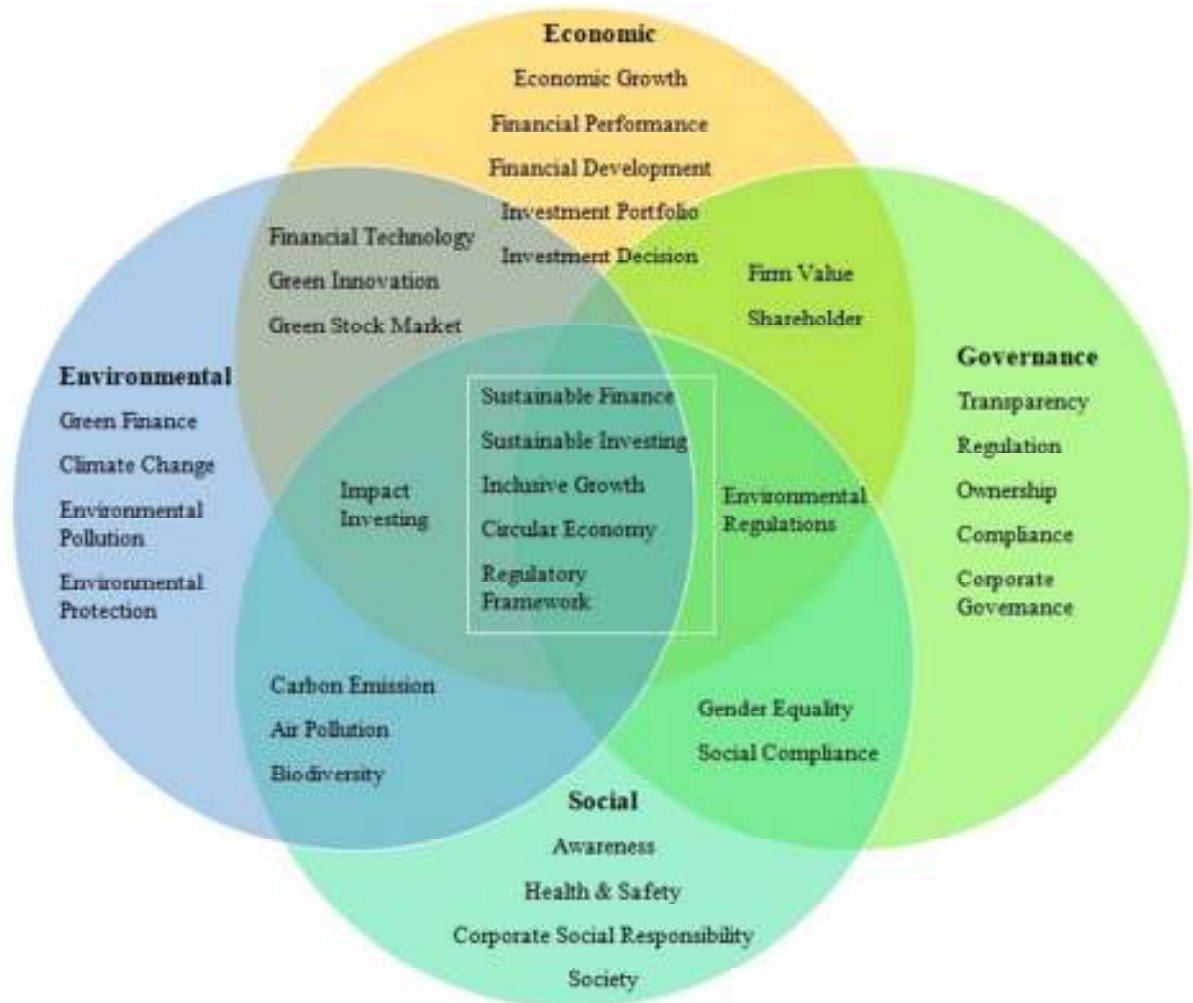


Figure 2: Sustainable Finance Framework

The framework diagram encapsulates the multidimensional landscape of sustainable finance, visually depicting the intricate relationships between economic, environmental, social, and governance dimensions. At the core of this framework lie the central tenets, represented by terms like "Sustainable Finance," "Sustainable Investing," "Inclusive Growth," "Circular Economy," and "Regulatory Framework." These central concepts serve as the foundation upon which the dimensions of sustainable finance are built.

The Economic dimension radiates outward, encompassing Economic Growth, Financial Performance, Financial Development, Investment Portfolio, and Investment Decision. This dimension highlights how financial activities contribute to economic well-being and growth. It intersects with the Environmental dimension in an overlapping area denoted by "Financial Technology," "Green Innovation," and "Green Stock Market." This overlap signifies the growing influence of technology and innovation in promoting environmentally friendly financial practices.

The Environmental dimension, extending from the center, focuses on critical elements such as Green Finance, Climate Change, Environmental Pollution, and Environmental Protection. These aspects underscore the pivotal role of finance in addressing environmental challenges. The overlapping area between the Economic and Environmental dimensions symbolizes the interconnectedness of both, emphasizing concepts like "Green Innovation" and "Green Stock Market" that bridge economic and environmental considerations.

Moving to the Governance dimension, this sector encompasses Transparency, Regulation, Ownership, Compliance, and Corporate Governance. Governance practices guide ethical and responsible financial operations, ensuring accountability and compliance. Notably, the Governance dimension intersects with the Economic dimension at "Firm Value" and "Shareholders," emphasizing the correlation between effective governance and economic outcomes.

Social considerations radiate outward in the Social dimension, including Awareness, Health & Safety, Corporate Social Responsibility, and Society. This dimension highlights the broader societal impact of financial decisions. Overlapping areas between the Social and Environmental dimensions feature "Carbon Emission," "Air Pollution," and "Biodiversity," underscoring the intricate links between social and environmental factors, the overlapping regions between Economic, Social, and Environmental dimensions converge at "Impact Investing," epitomizing the convergence of these pillars to achieve holistic and sustainable outcomes. Collectively, this circular framework visually encapsulates the interplay of economic, environmental, social, and governance dimensions within sustainable finance, illustrating the nuanced relationships and holistic nature of this vital field.

Discussion

The present study endeavors to undertake a thematic analysis of the sustainable finance literature. To achieve this objective, a dataset comprising 138 articles was retrieved from the Scopus database. Subsequently, this dataset was imported into VOSviewer for co-word analysis. As a result of this analysis, four distinct themes were extracted. The study's comprehensive analysis sheds light on various dimensions of sustainable finance. By examining economic, environmental, social, and governance aspects, the research provides a holistic understanding of how these elements contribute to the broader field of sustainable finance. The Economic dimension probes financial growth, performance, and investment decisions, showcasing the role of finance in driving economic prosperity. Environmental considerations encompass "Green Finance" and "Environmental Protection," illustrating the financial sector's potential to address environmental challenges like climate change and pollution. The Social dimension explores the societal impact of finance, emphasizing aspects such as "Health & Safety" and "Corporate Social Responsibility." Meanwhile, governance factors like "Transparency," "Regulation," and "Corporate Governance" underscore the importance of ethical and regulated financial practices. The study's comprehensive exploration underscores the interconnected nature of these dimensions and their collective impact on sustainable finance. The study's findings exhibit a degree of alignment with those of Alshater, et al., (2021), who similarly identified four distinct clusters. Nevertheless, it is noteworthy that their examination omitted the economic dimension within the realm of sustainable finance. This research offers valuable insights for both scholars and

practitioners, guiding future inquiries into how economic, environmental, social, and governance considerations intersect to shape responsible and sustainable financial practices

Conclusion, Limitations and Way Forward

Objective of this study is to identify the underlying dimensions of sustainable finance through the rigorous methodology of thematic analysis. A summary of the study given as under:

Conclusion

This study is set out to explore the multifaceted landscape of sustainable finance with a primary focus on extracting dimensions through a thematic analysis approach. The objective was to unravel the intricate interplay of economic, environmental, social, and governance considerations within the realm of sustainable finance. By employing a systematic methodology, this research meticulously analyzed a diverse range of scholarly articles retrieved from the Scopus database, culminating in a structured framework that sheds light on the intricate dimensions that underpin sustainable finance.

The methodology employed in this study proved to be instrumental in achieving the outlined objectives. The utilization of co-occurrence analysis through VOSviewer facilitated the identification of thematic clusters, enabling the subsequent development of a robust framework. This methodology ensured a comprehensive and nuanced exploration of the literature, capturing the essence of sustainable finance across its various dimensions.

The findings of this study offer a comprehensive overview of the complex web of sustainable finance. The thematic analysis revealed distinct dimensions within economic, environmental, social, and governance realms. Notably, the visualization of these dimensions in the framework underscores their interconnectivity and the need for a holistic approach to sustainable finance. The framework provides a valuable tool for researchers, practitioners, and policymakers to navigate the intricate landscape of sustainable finance, facilitating a deeper understanding of its implications and potential avenues for responsible and inclusive financial practices.

Implications of the Study

The implications of this study resonate across academia, industry, and policy arenas. By systematically extracting and categorizing dimensions within sustainable finance, this research provides a robust foundation for further scholarly investigations into the multifaceted aspects of sustainable financial practices. Scholars and researchers can build upon this framework to delve deeper into specific dimensions, fostering a more comprehensive understanding of sustainable finance's intricate dynamics.

In the realm of industry, the study's insights offer valuable guidance to financial practitioners and institutions seeking to align their strategies with sustainable objectives. The structured framework serves as a practical tool to navigate the complex landscape of sustainable finance, aiding in the identification of key considerations and opportunities for responsible investment and financial decision-making.

From a policy perspective, the study's findings underscore the interconnectedness of economic, environmental, social, and governance dimensions within sustainable finance. Policymakers can draw upon this research to design and implement regulations that promote ethical and sustainable financial practices, ensuring a harmonious balance between economic growth, environmental preservation, social equity, and effective governance.

Moreover, the study's social implications emphasize the importance of incorporating social factors in sustainable finance. By highlighting dimensions like health, equality, and social protection, it promotes financial decisions that contribute to societal well-being and inclusive economic systems.

Limitations of the Study

The study has following limitations

Scope of Literature: The study's findings are contingent upon the articles retrieved from the Scopus database. A broader selection of databases or sources may have provided a more comprehensive view of the sustainable finance literature.

Thematic Focus: The study's thematic analysis approach focused on the extraction of dimensions from existing literature. It may not capture emerging or underexplored dimensions that have yet to gain substantial attention in the academic discourse.

Subjectivity in Thematic Analysis: The process of manually grouping keywords into thematic dimensions involves an element of subjectivity. Different researchers might interpret and categorize keywords differently, potentially leading to variations in the final thematic structure.

Generalizability: The findings and framework generated in this study may be context-specific and may not fully capture the diverse range of sustainable finance practices and perspectives across different industries, sectors, and geographical regions.

Interdisciplinary Considerations: Sustainable finance encompasses a wide array of disciplines and fields. The study's focus on keyword analysis and thematic dimensions may not fully capture the interdisciplinary nature and complexities of sustainable finance interactions.

Future Recommendations

Future researches can consider the following.

Broader Literature Inclusion: To mitigate the limitation of a single database, future studies could consider expanding the scope by incorporating multiple databases and sources. This would provide a more comprehensive and diverse collection of literature, ensuring a well-rounded exploration of the dimensions of sustainable finance.

Incorporate Qualitative Analysis: To address the potential omission of qualitative insights, researchers could integrate qualitative research methods alongside the thematic analysis. Interviews, case studies, or content analysis of selected articles could offer a deeper understanding of the nuances and contextual details within the sustainable finance landscape.

Interdisciplinary Collaboration: Recognizing the interdisciplinary nature of sustainable finance, future research could engage in collaborative efforts that involve experts from various fields such as economics, environmental science, social sciences, and governance. This approach would ensure a comprehensive analysis that captures the multifaceted interactions and implications of sustainable finance across disciplines.

Longitudinal Study: Given the dynamic nature of sustainable finance, a longitudinal study could be conducted to track the evolution of dimensions over time. This would provide insights into emerging trends, shifts in emphasis, and the adaptation of sustainable finance practices to changing economic, environmental, and social contexts

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