

Trends in Sustainable Banking Practices: A Bibliometric Review of Green Financial Services and Risk Management Strategies

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ABSTRACT

Praktik perbankan berkelanjutan dan layanan keuangan ramah lingkungan semakin menjadi fokus penelitian yang meningkat dalam era keuangan modern. Artikel ini melakukan tinjauan bibliometrik terhadap tren dan strategi dalam domain ini. Ditemukan bahwa konsep keuangan hijau, seperti obligasi hijau dan praktik perbankan yang ramah lingkungan, serta integrasi teknologi keuangan (fintech), menjadi sorotan utama. Namun, pandemi COVID-19 juga mempengaruhi tren investasi hijau dan strategi manajemen risiko lingkungan. Kesimpulannya, artikel ini menyoroti tantangan dan peluang di masa depan, termasuk integrasi fintech dalam keuangan hijau, praktik perbankan hijau di berbagai negara, dan kontribusi sektor keuangan terhadap pencapaian Sustainable Development Goals (SDGs).

Kata kunci: Perbankan Berkelanjutan, Layanan Keuangan Ramah Lingkungan, Strategi Manajemen Risiko, Analisis Bibliometrik

ABSTRACT

Sustainable banking practices and environmentally friendly financial services are becoming an increasing research focus in the modern financial era. This article performs a bibliometric review of trends and strategies in this domain. It was found that green finance concepts, such as green bonds and environmentally friendly banking practices, as well as the integration of financial technology (fintech), were in the main spotlight. However, the COVID-19 pandemic has also influenced green investment trends and environmental risk management strategies. In conclusion, this article highlights future challenges and opportunities, including the integration of fintech in green finance, green banking practices in various countries, and the contribution of the financial sector to achieving the Sustainable Development Goals (SDGs).

Keywords: Sustainable Banking, Green Financial Services, Risk Management Strategy, Bibliometric Analysis

INTRODUCTION

Sustainable banking is a rapidly growing concept in the world of modern finance (Salsabila et al., 2023). Climate change, social issues, and public demands for transparency and accountability have pushed the banking industry to integrate sustainability principles into their operations (Aprilia, 2022; Hanum & Anggraeni, 2023). This is reflected in practices such as sustainable financing, green investment, environmentally friendly product development, and risk management that focuses on environmental and social aspects (Ramadhan et al., nd; Salma, 2019).

The sustainable banking trend has experienced significant growth in recent years, accompanied by more banks and large financial institutions adopting practices that support sustainability (Saparinda, 2020; Siahaan & Marliyah, 2023). A number of global initiatives, such as the World Bank Principles (UNEP FI Principles for Responsible Banking) and the Green Finance

Initiative, have strengthened the financial sector's commitment to sustainable development (Arif & Sulaiman, 2023; Seran, 2016).

Although more and more banks are adopting sustainable banking practices, there is still a significant need to analyze trends and strategies used in green financial services and the management of associated risks (Nygroho et al., 2023; Perdana et al., 2023; Zuhriyah et al., 2022). These issues raise questions about how far these practices have evolved, how they impact sustainability, and how risk management strategies have been implemented in this context. (Liberda et al., 2021; Mokodenseho & Puspitaningrum, 2022; Muhajirin & Dedu, 2021; Willya et al., 2021).

The aim of this research is to conduct a comprehensive bibliometric review of green financial services and associated risk management strategies, with a focus on trends in sustainable banking practices. This research aims to identify recent developments in this domain, analyze the key concepts used, and evaluate the impact of these practices on economic, social and environmental sustainability.

This research has great significance in the context of sustainable banking and sustainability as a whole. By understanding trends in sustainable banking practices, green financial services, and related risk management strategies, this research can provide valuable insights for industry practitioners, regulators, and other stakeholders. In addition, this research can be a basis for developing more effective strategies and policies in achieving global sustainability goals.

LITERATURE REVIEW

Sustainable Banking Practices (PPBK) is a concept that focuses on financial management and development based on the environment, social and ethics (Alamsyah & UU, 2020). PPBK includes practices that pay attention to positive environmental, social and ethical impacts, as well as using efficient and sustainable technology (Aria Elshifa et al., 2023; Faiqoh et al., 2022; Rahmadhani et al., 2023). In the banking context, PPBK includes managing savings, providing loans, business development, and business development consulting services that are not solely for profit. Microfinance institutions are examples of institutions that implement PPBK (Rusliana et al., 2021). Microfinance institutions are financial institutions whose function is to provide business development and community empowerment services, either through loans or financing in micro-scale businesses to members and the community, managing savings, as well as providing business development consulting services that are not solely for profit. (Siahaan & Marliyah, 2023). PPBK is also related to the management of cash waqf. Government Regulation Number 42 of 2006 concerning Implementation of Law Number 41 of 2004 concerning waqf states that the institution appointed as the manager of cash waqf is a Sharia Financial Institution or Sharia Banking (Saparinda, 2020).

RESEARCH METHODS

This research methodology is based on a bibliometric approach that aims to identify, collect and analyze relevant literature in the domain of sustainable banking practices, particularly focusing

on green financial services and risk management strategies. The first step in this methodology is to conduct a systematic search in bibliometric databases such as Scopus, Web of Science, and Google Scholar to identify articles, books, and other publications related to the research topic. Next, a quantitative and qualitative analysis of the selected literature will be carried out to identify trends, key concepts, methodological approaches used, as well as knowledge gaps that can be further explored in the context of sustainable banking practices. This methodology will provide a strong foundation for understanding the latest developments, challenges and opportunities in efforts to achieve sustainability in the financial sector.

RESULTS AND DISCUSSION

A. Research Data Matrix

Table 1. Research Data Metrics

<i>Publication years</i>	: 1992-2024
<i>Citation years</i>	: 32 (1992-2024)
<i>Paper</i>	: 980
<i>Citations</i>	: 48472
<i>Cites/year</i>	: 1514.75
<i>Cites/paper</i>	: 49.46
<i>Cites/author</i>	: 24945.83
<i>Papers/author</i>	: 508.35
<i>Author/paper</i>	: 2.58
<i>h-index</i>	: 110
<i>g-index</i>	: 201
<i>hI, norm</i>	: 63
<i>hI, annual</i>	: 1.97
<i>hA-index</i>	: 48
<i>Papers with ACC</i>	: 1,2,5,10,20:691,576,399,268,152

Source: Publish or Perish Output, 2024

Table 1 displays the bibliometric research data metrics used in this research analysis. The range of publication years studied was from 1992 to 2024, with a total of 980 works published. These works have received a total of 48,472 citations, with an average citation per year of 1,514.75 and an average citation per work of 49.46. The citation ratio per author is very high, reaching 24,945.83, while the ratio of works per author is 508.35. This illustrates the substantial level of recognition and influence of the works included in this analysis. The resulting h-index is 110, indicating that there are 110 works, each of which has been cited at least 110 times. A g-index of 201 indicates that 201 works have been cited at least 201 times in total. The hI,norm and hI,annual indices are 63 and 1.97, respectively, illustrating the author's contribution in producing highly cited work. An hA index (hA-index) of 48 indicates that 48 authors have at least 48 works, each of which has been cited at least 48 times. In addition, there is data on the number of works with a certain number of citations, such as works with a minimum of 1, 2, 5, 10, and 20 citations, which provides further insight into the distribution and reception of citations in this research domain. These data are obtained from Publish or Perish output in 2024.

B. Term Network Mapping

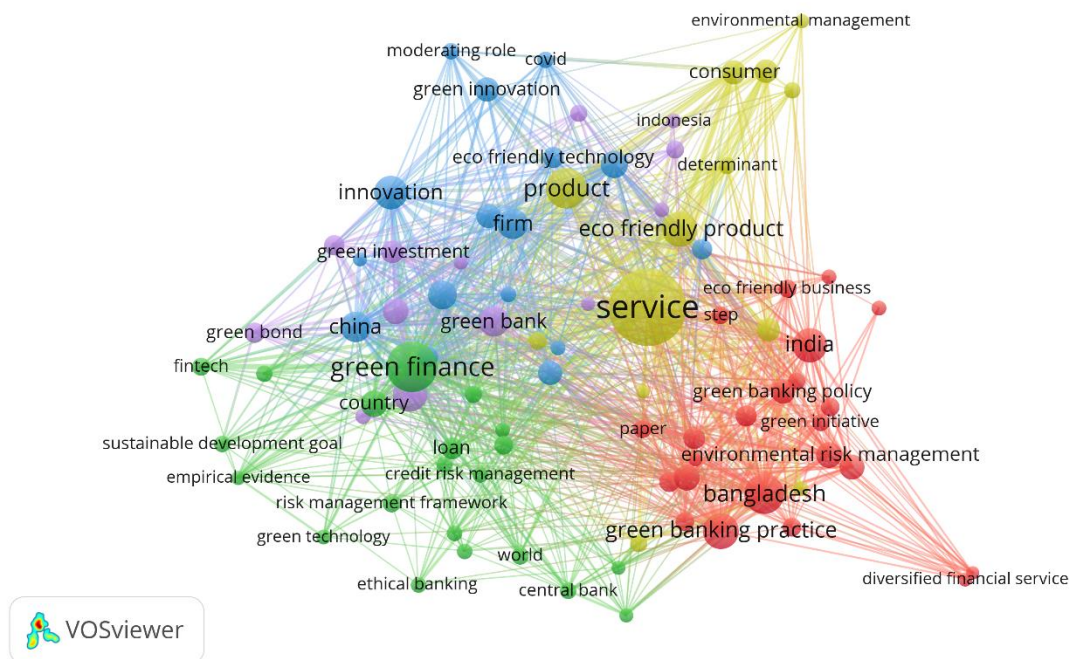


Figure 1. Network Visualization

Source: Processed Data, 2024

The network map above shows several thematic clusters formed from the extracted literature database. The clusters displayed indicate subtopics and their relationships.

1. **Green Cluster:** Focuses on environmentally friendly financial and investment aspects. Terms such as "green finance", "green investment", "green bonds", and "green banks" indicate research on financial instruments and institutions that support sustainable development and environmentally friendly projects. "Fintech" also appears, denoting financial technology innovations that support green initiatives.
2. **Blue Cluster:** Highlights countries active in green finance, such as "China" and "India", as well as concepts related to "green technology" and "sustainable development goals". This cluster indicates research related to national policies, technological developments, and sustainable development goals in these countries.
3. **Red Cluster:** Concentrated on environmentally friendly business practices, with a focus on "eco-friendly products" and "eco-friendly business". It also includes "green banking practices" and "green initiatives" which signify research related to banking practices that support environmental sustainability and green initiatives in business.
4. **Yellow Cluster:** Includes consumer and environmentally friendly products with keywords such as "consumer", "product", and "service". Demonstrates research on consumer behavior towards green products and services, and how companies are innovating to meet this demand.

From this network, we can see that there is a strong connection between green finance, innovation, and environmentally friendly business practices, as well as the important role of consumers in driving demand for more sustainable products and services. The focus on specific countries such as China and India indicates the importance of geographic context in this research, while the emphasis on “covid” and “moderating role” may reflect the impact of the pandemic on these sectors.

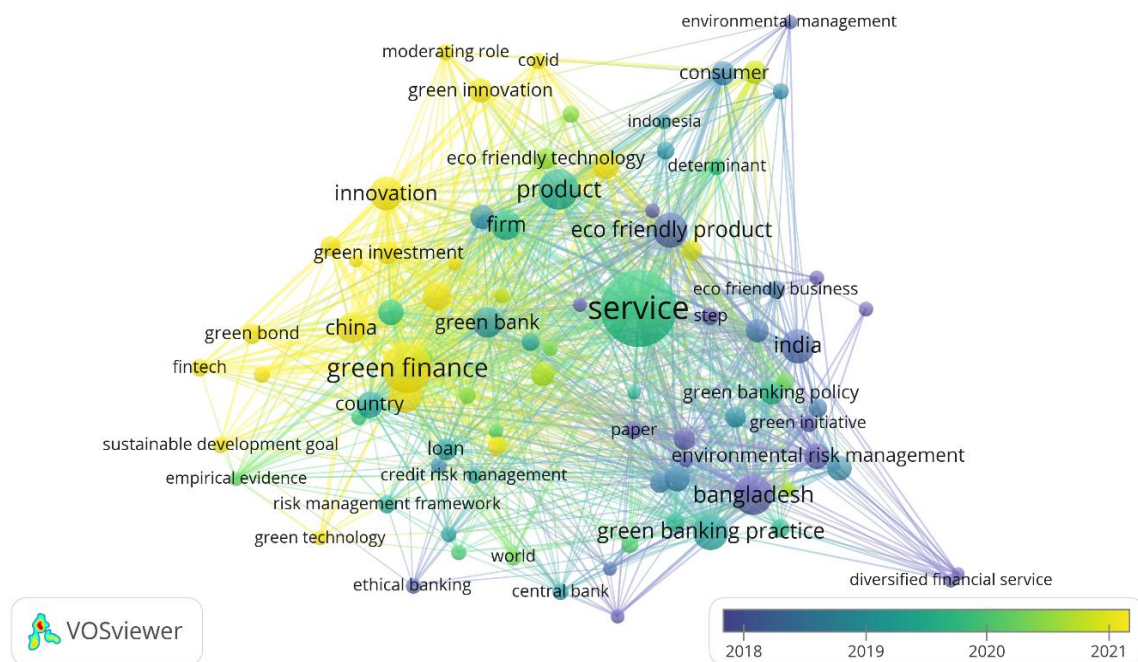


Figure 2. Network Visualization

Source: Processed Data, 2024

The image is a keyword network map with time indication, marked by a color gradient from yellow (2018) to blue (2021). It provides a visualization of how the research focus in the topic of green finance and sustainable business practices has changed over the years.

1. 2018 (Yellow): At the beginning of the period, the main focus appeared to be on the basic aspects of green finance, such as “green bonds”, “green banks” and “fintech”. This shows that research this year focuses on the introduction and development of green financial instruments and financial technologies that support sustainable goals.
2. 2019 (Light green): There was a shift towards “green investment” and “sustainable development goals”, indicating increased integration of sustainable development goals into green investment strategies as well as increased awareness and action on sustainability in the financial sector.
3. 2020 (Light blue): The keyword “COVID” becomes more prominent, indicating the impact of the pandemic on research in green finance. There may be research into how COVID-19 has influenced or moderated trends in green investing and banking, as well

as the adjustments needed in business and financial practices to maintain sustainability during the crisis.

4. 2021 (Blue): The focus on “service” and “diversified financial services” suggests further exploration into the diversification of financial services and how green initiatives are integrated into these service offerings. It may also reflect research on how financial services are adapting to new needs after the pandemic.

Table 3. Top Literature Cited

Citations	Authors and years	Title
4694	T. L. Wheelen (2011)	Concepts in strategic management and business policy
1629	K Manaktola, Vjauhari (2007)	Exploring consumer attitudes and behavior towards green practices in the lodging industry in India
1238	C Flammer (2021)	Corporate green bonds
1138	DA Lubin, DC Esty (2010)	The sustainability imperative
973	J Paul, J Rana (2012)	Consumer behavior and purchase intention for organic food
634	A Kolk, J Pinkse (2005)	Business responses to climate change: identifying emergent strategies
618	P Mirvis, B Googins (2006)	Stages of corporate citizenship
597	D Giovannucci, S Ponte (2005)	Standards as a new form of social contract? Sustainability initiatives in the coffee industry
550	G Mandip (2012)	Green HRM: People management commitment to environmental sustainability
543	Y Wang, Q Zhi (2016)	The role of green finance in environmental protection: Two aspects of market mechanisms and policies

Source: *Output Publish or Perish, 2024*

Table 3 displays the top most cited literature in the context of sustainable banking practices and environmentally friendly financial services. Among the most cited literature is the work "Concepts in strategic management and business policy" by TL Wheelen (2011) with a total of 4694 citations, which makes a significant contribution to the understanding of strategic concepts in sustainable banking management. Furthermore, the work "Exploring consumer attitudes and behavior towards green practices in the lodging industry in India" by K Manaktola and Vjauhari (2007) with 1629 quotes, and "Corporate green bonds" by C Flammer (2021) with 1238 quotes, provides insight important information about consumer behavior and green financial instruments in the context of the financial industry. Other works include "The sustainability imperative" by DA Lubin and DC Esty (2010), "Consumer behavior and purchase intention for organic food" by J Paul and J Rana (2012), and "Business responses to climate change: identifying emergent strategies" by A Kolk and J Pinkse (2005), also shows great relevance and impact on research and practice in sustainable banking. This data is presented based on Publish or Perish output in 2024, which provides an overview of the most influential literature in this domain.



Figure 3. Density visualization

In this visualization, a number of keywords related to green finance and sustainable business practices can be seen. Topics that can be considered potential research opportunities are usually those that have not yet been fully explored or that are beginning to gain momentum due to changes in social, economic, or technological trends. The following are several areas that could be potential research opportunities:

1. Fintech Integration in Green Finance: Exploration of how financial technology (fintech) can be better used to support green finance and sustainable investment initiatives.
2. Green Bonds and Investment in Developing Countries: The potential and challenges of issuing green bonds in developing countries, as well as an analysis of their effectiveness in financing sustainable projects.
3. Green Banking Practices in Different Countries: Comparison of green banking practices between countries, including the role of central banks and regulations that influence the adoption of such practices.
4. COVID-19's Impact on Green Finance: The impact of the pandemic on green finance and investment, and how the sector may change or adapt in response to the global crisis.
5. Environmental Risk Management: Environmental risk management strategies in finance and banking, especially amidst increasing attention to climate change and sustainability.
6. Consumer Attitudes Towards Eco-Friendly Products and Services: Understanding the factors that motivate consumers to choose green products and services, which can help companies develop more effective marketing strategies.
7. Green Technology Innovation: Innovations in green technology and how these can be integrated in financial products and services to improve sustainable practices.

8. Sustainable Development Goals (SDGs) and Finance: Research on how the financial sector can actively contribute and measure impact on achieving the SDGs.

CONCLUSION

From the results of this bibliometric analysis, it can be concluded that sustainable banking practices and environmentally friendly financial services have become an increasing research focus in recent years. There is a significant trend in the use of green finance concepts, such as green bonds and environmentally friendly banking practices, as well as the integration of financial technology (fintech) to support sustainable goals. However, there are also challenges that need to be overcome, such as the impact of the COVID-19 pandemic on green investment and environmental risk management strategies. In facing the future, further research could focus on the integration of fintech in green finance, green banking practices in various countries, and the impact of the SDGs on the financial sector. It is hoped that this will provide valuable insight for industry practitioners and stakeholders in efforts to achieve global sustainability goals.

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