

Analyzing the Impact of Green Banking on Green Finance: A Bibliometric Approach

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ABSTRACT

The purpose of this article is to provide detailed bibliometrics analysis of Green Banking literature. In order to deploy bibliometrics analysis, we extracted 57 documents from Scopus database using the Boolean search in between 2015 to 2025. Our results provide that past decade recognized the concept of Sustainable finance and witness of large numbers of publications. In addition, our findings suggest that both developed and developing countries acknowledge the importance of Eco-Friendly banking system in Green finance. Further, we found that Qualitative Research in Financial Markets, Review of Sustainable Finance, Environmental Science And Pollution Research, Contemporary Studies In Economic And Financial Analysis, International Journal Of Business Innovation And Research, Journal Of Infrastructure Policy And Development are main Source which published quality & quantity research in the field of Green banking literature.

This study provides useful insights into the nature and trend of research on Green Banking and can act as a reference point for researchers, policymakers, investors, and regulators.

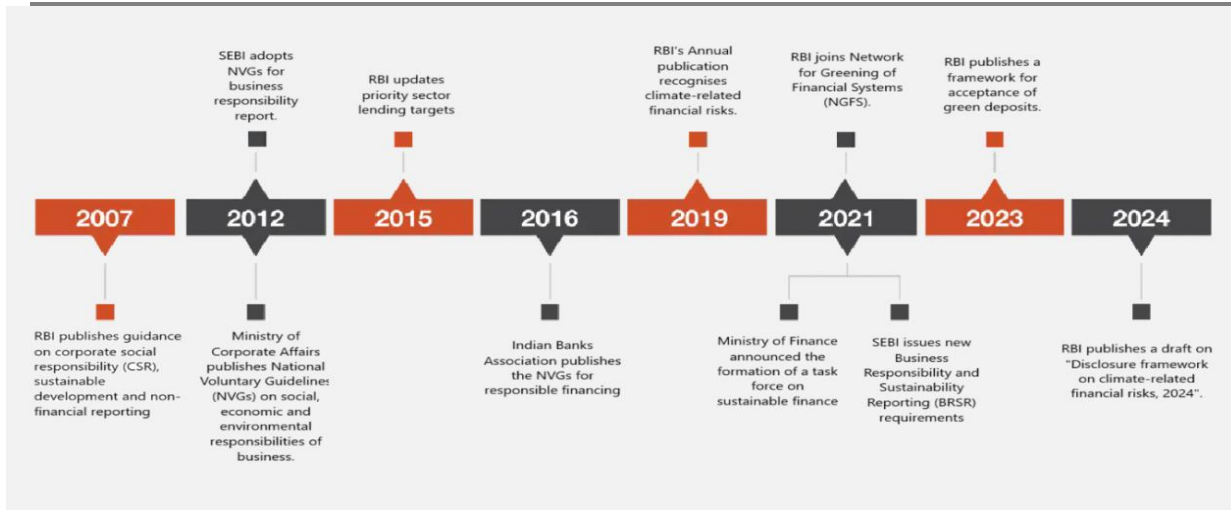
Keywords: Green Banking, Green Finance, Eco Friendly banking, Sustainability

INTRODUCTION

Early in 2003, as environmental issues gained international attention, the idea of "green banking" was born. Green banking, sometimes referred to as sustainable banking or environmental banking, has become a vital instrument for advancing sustainability in the financial industry. With emphasis on lowering polluting businesses and fostering environmental sustainability, green banking is being used to lessen its influence on the environment and support the UN-SDGs 2030 (Bukhari, SAA et al.2023). According to Taneja et al. (2024), green banking is becoming more widely acknowledged for its contribution to sustainable practices and mitigating environmental deterioration. These changes are part of a broader movement to combine environmental stewardship and financial services.

The term "green banking" describes the incorporation of sustainable practices into the banking industry with the goals of reducing carbon footprints, promoting environmental sustainability, and funding ecologically sound enterprises. Green banking has developed into a major facilitator of green finance as financial institutions come to understand the vital role they play in assisting the shift to a green economy (Bhatnagar & Sharma, 2022). Green banking initiatives that aim to provide capital to environmentally friendly projects, encourage responsible consumption, and drive long-term sustainability are closely linked to green finance, which includes investments, loans, and financial products created to support environmental sustainability.

The term "green finance" (GF) describes financial contributions given to businesses, projects, and products that encourage eco-friendly living as well as to policies and legislation that aid in the creation of a sustainable society (Ali et al., 2021; Yu et al., 2021). The "Finance" portion of the concept emphasizes capital distribution and investment through financial systems, and the term "green" refers to the notion that resources ought to be distributed throughout all economic sectors for ecological concerns, corporate governance, renewable technology, environmentally friendly infrastructure, environmental preservation, and societal integration.



Indian's Sustainable and climate finance journey (Source: PwC India, 2024)

Initially, green banking was focused on incorporating environmental considerations into banking operations, such as reducing energy consumption in bank branches, and offering financial products that promoted environmental sustainability, like loans for renewable energy projects (Agarwal & Soni, 2018). A vital component of the global economy, green banking has a major beneficial impact on environmental performance and is driven by a number of elements, including staff, day-to-day operations, and policy-related activities. (AB Siddik and others, 2022). Numerous green banks encourage the construction of solar power plants in urban locations, assisting communities in lowering their carbon footprints and meeting their renewable energy goals. (A. Sharma, 2015).

The current study's goal is to look into the following research questions:

1. How do research publications for Green banking strategies now look?
2. How many publications and articles have influenced research on sustainable strategies?
3. Which nations and writers contribute to the field of Green banking strategies the most frequently?
4. Which research topics and key terms can be investigated further in relation to green banking and Green Finance impact?
5. What problems and difficulties are now being faced with the implementation of Green Banking?

Impact of Green Banking on Green finance

Green banking plays a pivotal role in advancing green finance by promoting environmentally sustainable practices within the financial sector. In order to encourage investments in environmentally conscious endeavors, it includes programs like providing green loans, funding renewable energy projects, and assisting companies that implement eco-friendly procedures. Green banking facilitates the alignment of financial services with the objectives of resource conservation, carbon emission reduction, and sustainable development. Green banking encourages organizations and customers to put sustainability first by incorporating environmental, social, and governance (ESG) considerations into financial decision-making. This also improves the transparency of financial systems. As a result, green banking promotes the broader use of green finance and aids in the shift of economies toward more sustainable growth models.

The scope of green finance, as further analyzed by Maria et al. (2023), extends beyond individual financial products to include the development of frameworks that incentivize the integration of green principles into financial practices. This broader scope of green finance represents a dynamic and rapidly growing field where the banking sector plays an instrumental role in shaping a sustainable financial landscape (Taneja et al., 2024).

LITERATURE REVIEW

A bibliometric study of green banking and green finance shows how these fields have developed and how they have an impact on the environment and the financial industry. The increased demand for sustainable

investment alternatives and the growing awareness of the environmental concerns connected to traditional financial practices have propelled the development of green finance, claim Bhatnagar and Sharma (2022). Their research charts the evolution of green finance, highlighting the major catalysts, including governmental regulations, financial advancements, and the emergence of green financial products. The varied paths of green finance research are also highlighted by Naeem et al. (2023), who concentrate on the field's future directions and the growing demand for more integrated, sustainable financial systems.

According to Maria et al. (2023), the scope of green finance goes beyond specific financial products and encompasses the creation of frameworks that provide incentives for incorporating green concepts into financial operations. The banking industry is a key player in creating a sustainable financial landscape in the dynamic and quickly expanding field of green finance. Furthermore, by lowering the carbon footprint of financial institutions' operations and encouraging investments that support global climate goals, green banking practices help reduce environmental hazards. Gupta and Rath (2020) highlight the revolutionary potential of green banking, pointing out that by encouraging ecologically conscious banking and producing favourable environmental effects, it may build a more sustainable financial system.

An extensive bibliometric analysis of green finance is provided by Pitaloka, E., et al. (2024), who also pinpoint the geographical distribution of green finance efforts and the most significant research areas. According to the authors, green banks act as middlemen that direct financial resources toward sustainable projects, making green finance essential for tackling environmental issues.

In their study on green banking, Sarma, P., & Roy, A. (2021) use scientometric methodologies to examine the scholarly literature from 1995 to 2019. Their study links the growing interest in sustainability and environmental management methods to the steady expansion of green banking research. In order to demonstrate its potential contribution to the growth of green finance, the writers talk about how green banking went from being a specialized idea to becoming a common practice in the financial sector.

Taneja et al. (2024) examine the different tactics used by green banks to further sustainability objectives. They list important strategic efforts that green banks have put in place, like eco-friendly investment plans, carbon footprint reduction regulations, and green lending procedures.

In their study, Agarwal and Soni (2018) concentrate on how Indian financial institutions support green banking practices. Their research demonstrates the growing alignment of Indian banks' operations with green finance concepts, particularly in response to international sustainability commitments and domestic environmental concerns. They contend that India's green banking industry plays a significant role in accomplishing the country's sustainable development objectives, especially in areas like financing clean technologies and renewable energy.

The strategic significance of green banking in accomplishing the Sustainable Development Goals (SDGs) of the UN is examined by Bukhari, S. A. A., et al. (2023). Their bibliometric research offers a global viewpoint on how financial solutions that assist environmental sustainability in green banking help accomplish the SDGs.

Chen et al. (2022) conduct an empirical investigation of the connection between financial performance and green banking practices. According to their research, green banking increases demand for green financing solutions, which boosts banks' financial viability in addition to improving their environmental performance. This study emphasizes how green banking practices, and the expansion of green financing are mutually reinforcing.

MEASURE AND METHODS

Methodology

Bibliometrics facilitates in analysis of vast number of bibliographic sources, for example, research articles, seminar articles, review articles, books, and many more. We retrieved the bibliometrics data from the Scopus database which is commonly acknowledged and all the more regularly recovered for quantitative examinations.

and greatest wellspring of peer-reviewed literature for the social-sciences research. We retrieved the documents from Scopus database using the Boolean search as follows.₂

The terms ("Green banking") AND "Green Finance") are commonly used interchangeably, even though their scopes are slightly different, because they all refer to the particular programs, initiatives, and steps that banks have done to reduce their environmental effect and promote sustainability ideals. Journal articles, conference proceedings, book chapters, and reviews are among the fifty-seven papers on green banking practices that were extracted from the Scopus database. Data from Scopus or any other database may be impacted by inaccurate bibliometric and bibliographic information, which needs to be corrected before processing may proceed. Because research on the impact of green banking and green finance is still in its infancy, the study's sample size is low. The pattern illustrates how the financial sector is moving toward ecologically conscious and sustainable practices, which is assisting in the fight against climate change and advancing a greener tomorrow.

RESULTS AND DISCUSSION

Although the present bibliometric study provides insightful information about the evolution and trajectory of Green Banking research, it is crucial to recognize a number of limitations. Although credible, the study's sample of 57 articles drawn exclusively from the Scopus database might not fully represent the range of pertinent literature. The findings' thoroughness and generalizability may be impacted by this small dataset. To reduce publication bias and offer a more comprehensive picture of worldwide research trends, future studies could think about broadening the scope by incorporating several databases, such as Web of Science, Google Scholar, and SSRN.

In addition, the observed preponderance of publications from nations such as Pakistan and India points to a regional bias in the field of study. Although this shows that South Asia is actively involved, it may also limit the conclusions' worldwide application. Additionally, it is difficult to draw consistent findings or perform comparative analysis due to the evaluated studies' inconsistent methodology. To facilitate improved synthesis and benchmarking, more uniform criteria and standardized research frameworks are obviously required.

General features and trends in Sustainable finance literature

We have extracted 57 documents from Scopus database using the Boolean search. We retrieved documents from 2015 to 2025. **Table 1** presents types of publications on Green Banking literature between 2015 and 2025. Specifically, we found 38 research articles, 11 conference papers, 03 book chapters, 02 review articles and 1 books on Green Banking literature.

Figure 1 shows graphically types of publications on Green Banking literature.

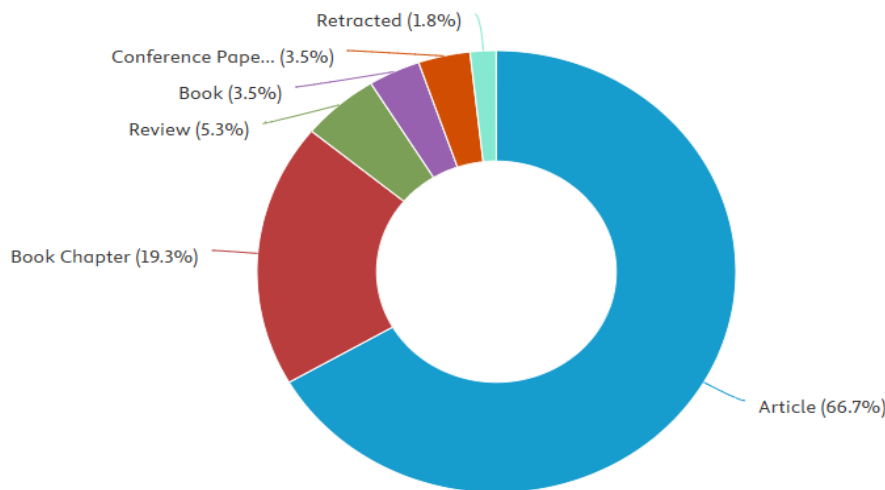
Table 1: Types of publications of Green Banking literature between 2015 and 2025

Sr. No.	Document type	Number	%
1	Article	38	66.7
2	Conference Paper	11	9.3
3	Book Chapter	3	5.3
4	Review	2	3.5
5	Book	1	1.8

Notes: N=57

Source: Scopus database.

Figure 1: Documents by types.



Source: Scopus database

Documents in Sustainable finance literature

As shown in **Table 2**, the first article was published in Green Banking literature in 1925. The past decade recognized the concept of Green Banking and witness of large numbers of publications. In addition, our results show that 2024 (n=21, 36.8 percent) is the most productive year on Green Banking literature followed by year 2023 (n=17, 29.8 percent). As shown in

Figure 2, Literature on Green Banking emerged after the year 2015.

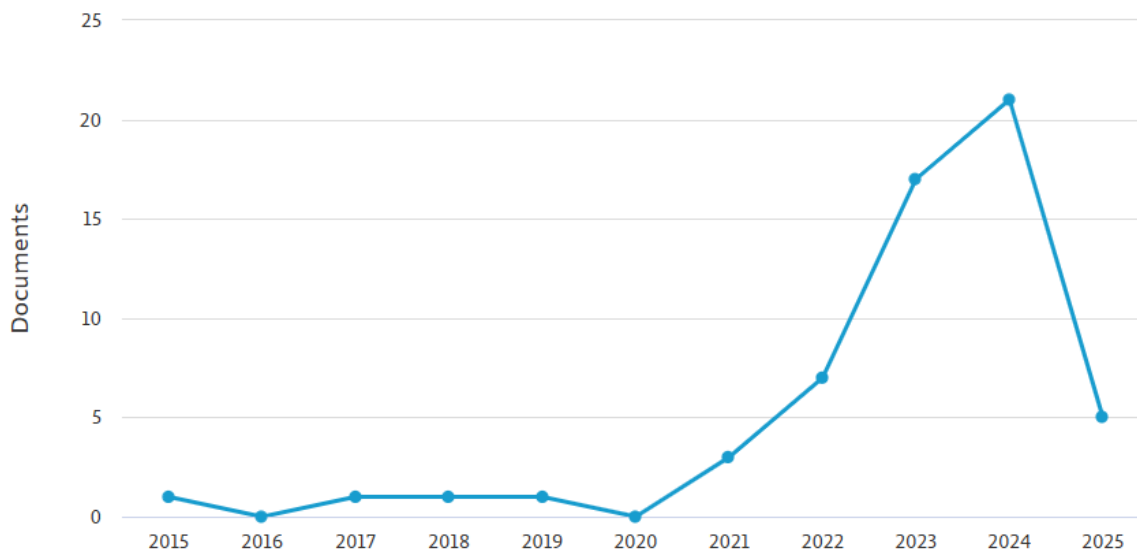
Table 2: Documents by year on Green Banking literature between 2015 and 2025

YEAR	Number	%
2025	5	8.8
2024	21	36.8
2023	17	29.8
2022	7	12.3
2021	3	5.3
2020	0	0.0
2019	1	1.8
2018	1	1.8
2017	1	1.8
2016	0	0.0
2015	1	1.8

Notes: N=57.

Source: Scopus database Year

Figure 2: Documents by year.



Source: Scopus database.

Global productivity

Table 3 Depicts the first ten countries according to the number of published documents on Green Banking literature between 2015 and 2025. India (n=17, 30.9 percent) has major contribution in publications of researches on Green Banking followed by Pakistan (n=07, 14.5 percent). India is producing good quantity of publications on Behavioral bias. Both developed and developing countries acknowledge the importance of Green Banking in the stock markets. **Figure 3** shows graphically first ten countries according to the number of published documents on Green Banking literature.

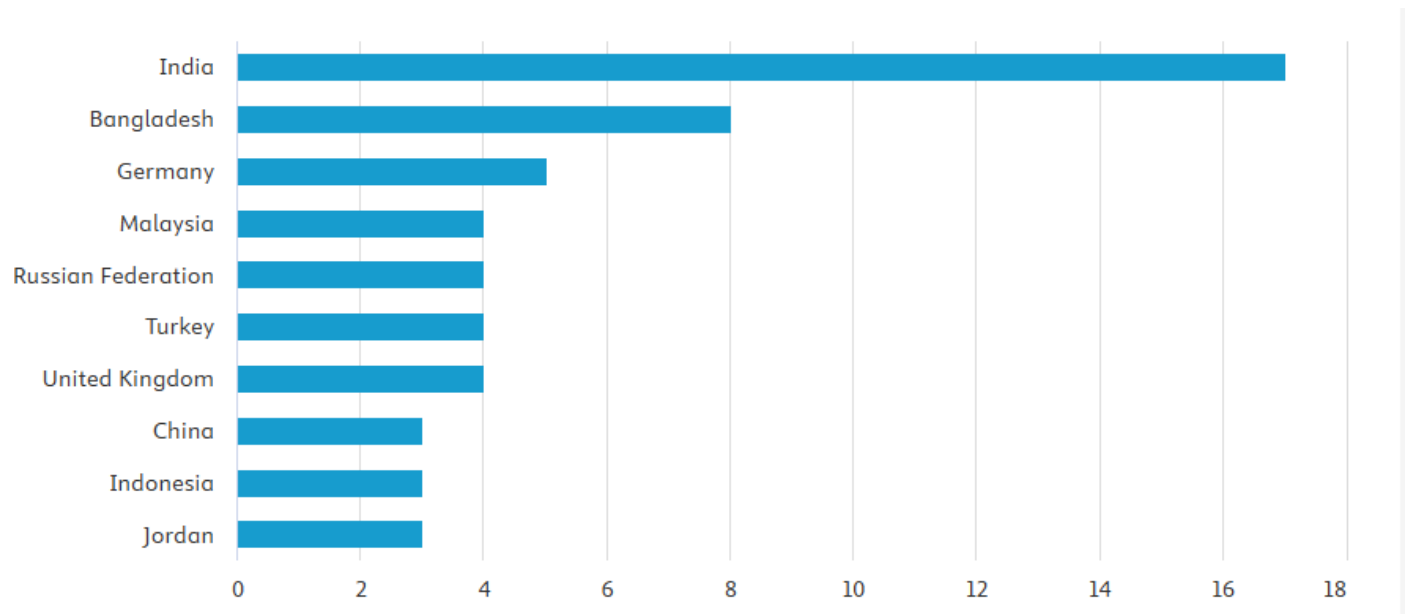
Table 3: The first ten countries according to the number of documents published in Green Banking literature between 2015 and 2025

Rank	Country	N	%
1	India	17	30.9
2	Bangladesh	8	14.5
3	Germany	5	9.1
4	Malaysia	4	7.3
5	Russian Federation	4	7.3
6	Turkey	4	7.3
7	United Kingdom	4	7.3
8	China	3	5.5
9	Indonesia	3	5.5
10	Jordan	3	5.5

Notes: N=57.

Source: Scopus database.

Figure 3: Documents by country.



Source: Scopus database.

Productivity of authors, institutions and source titles

Taneja, S. and Al-Adwan, A.S. lead in publication of Green Banking. Bansal, N., Bhat, A.A. Mir, A.A., Niyazbekova, S, and Roy, A are most productive authors (see **Table 4**).

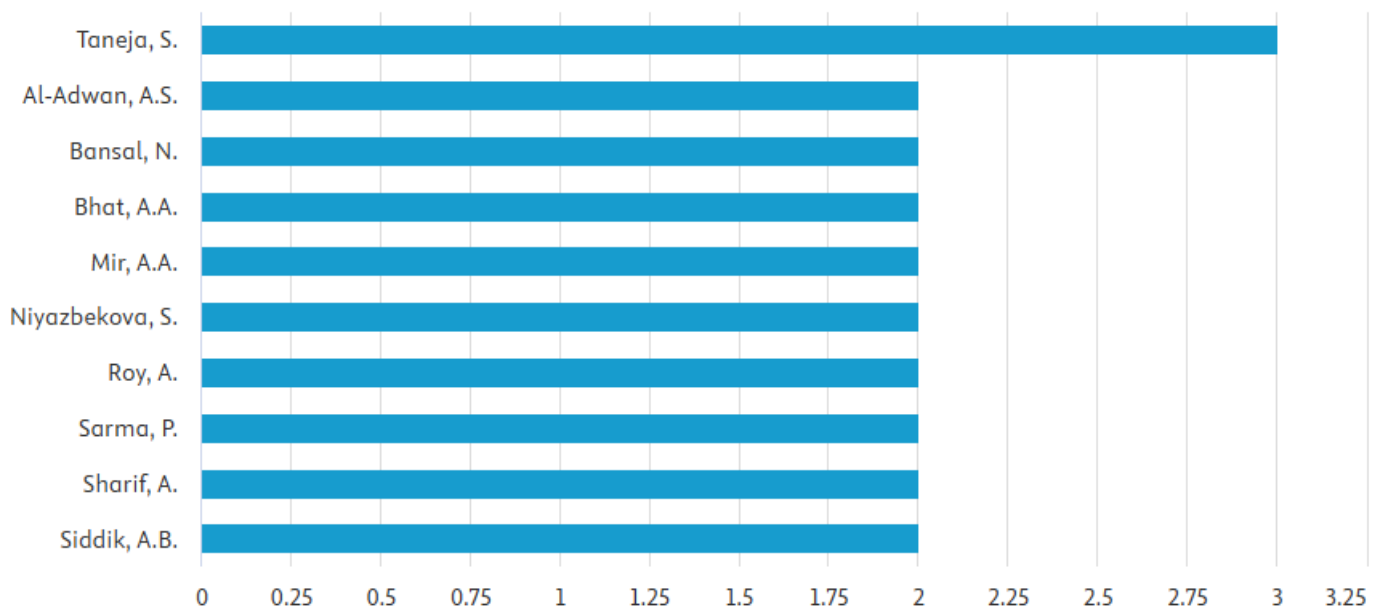
Figure 4 presents graphically the first ten authors by record count in Green Banking literature between 2015 and 2025.

Table 4 Productivity of authors, institutions and source titles

Rank	Authors Name	N	%
1	Taneja, S.	3	14.3
2	Al-Adwan, A.S.	2	9.5
3	Bansal, N.	2	9.5
4	Bhat, A.A.	2	9.5
5	Mir, A.A.	2	9.5
6	Niyazbekova, S.	2	9.5
7	Roy, A.	2	9.5
8	Sarma, P.	2	9.5
9	Sharif, A.	2	9.5
10	Siddik, A. B	2	9.5

Source: Scopus database.

Figure 4: Documents by the author.



Productivity institutions

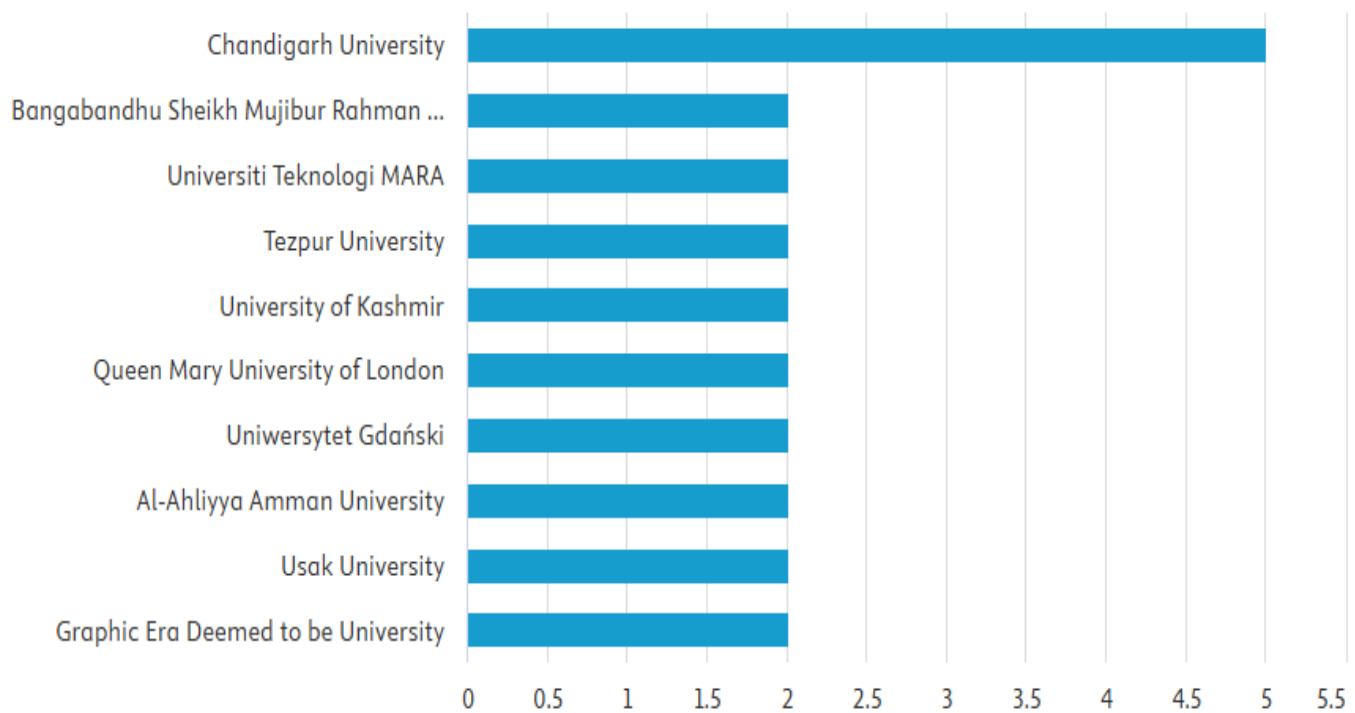
Table 5 presents the productivity of institutes in terms of publication on Green Banking literature between 2015 and 2025. Chandigarh University, Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Universiti Teknologi MARA, Tezpur University & University of Kashmir are first five contributors in this field of Green Banking literature. **Figure 5** presents graphically the productivity of institutes in terms of publication in Green Banking literature between 2015 and 2025.

Table 5: The first ten institutes according to the number of published documents in Green Banking literature between 2015 and 2025

Rank	Institute	N	%
1	Chandigarh University	5	21.7
2	Bangabandhu Sheikh Mujibur Rahman Science and Technology University	2	8.7
3	Universiti Teknologi MARA	2	8.7
4	Tezpur University	2	8.7
5	University of Kashmir	2	8.7
6	Queen Mary University of London	2	8.7
7	Uniwersytet Gdański	2	8.7
8	Al-Ahliyya Amman University	2	8.7
9	Usak University	2	8.7
10	Graphic Era Deemed to be University	2	8.7

Source: Scopus database

Figure 5: Documents by the institute.



Source: Scopus database.

Publication in Green Banking

Environmental Science And Pollution Research (n= 3 , Percent), Contemporary Studies In Economic And Financial Analysis (n=2, Percent) International Journal Of Business Innovation And Research (n= 2, Percent) Journal Of Environmental Management And Tourism (n= 2, Percent) Journal Of Infrastructure Policy And Development (n=2, Percent) are main source which published quality research in the field of Green Banking literature (see **Table 6**).

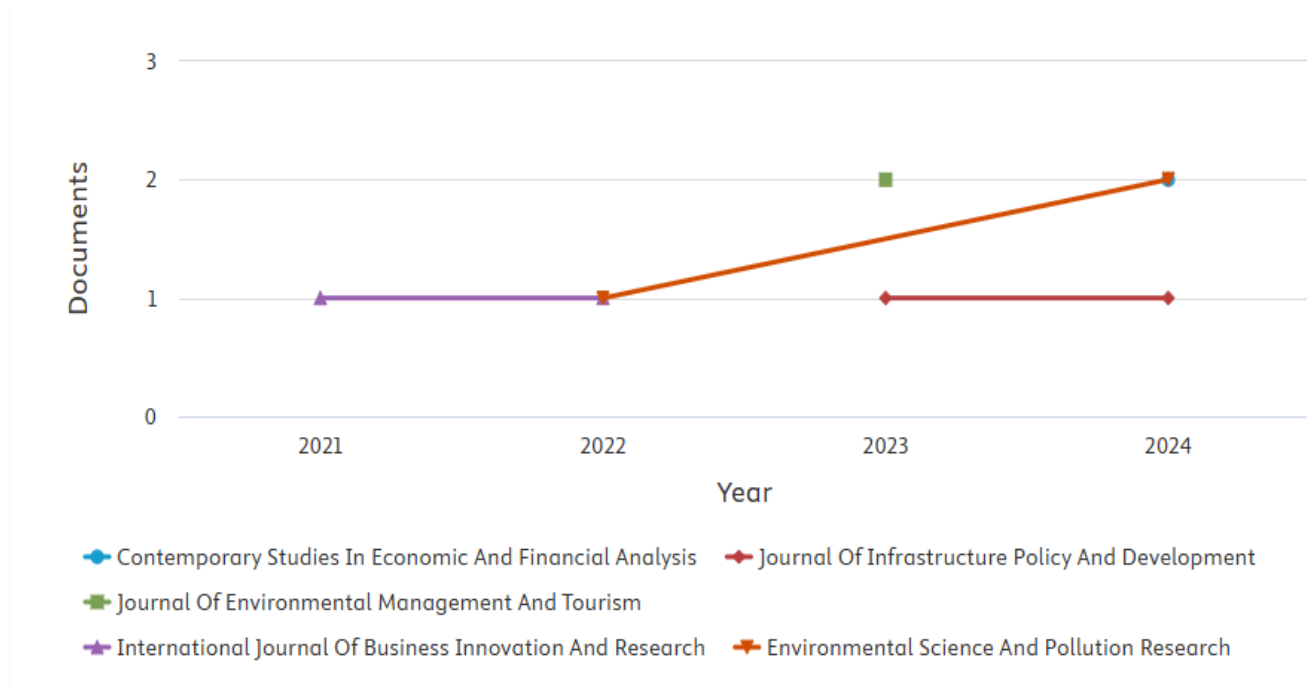
Figure 6 Presents graphically the productivity of journals in terms of publication on Green Banking literature between 2015 and 2025.

Table 6: The first five sources according to the number of published documents in Green Banking literature between 2015 and 2025

Rank	Journal	N	%
1	Environmental Science And Pollution Research	3	27.3
2	Contemporary Studies In Economic And Financial Analysis	2	18.2
3	International Journal Of Business Innovation And Research	2	18.2
4	Journal Of Environmental Management And Tourism	2	18.2
5	Journal Of Infrastructure Policy And Development	2	18.2

Source: Scopus database

Figure 6: Documents by source.



Source: Scopus database.

Subjects area in Green Banking

Economics, Econometrics and Finance (n= 27 , 23.5 Percent),

Business, Management and Accounting (n=26, 22.6 Percent) Social Sciences (n= 21, 18.3 Percent) Environmental Science (n= 15, 13.0 Percent) Energy (n=7, 6.1 Percent) Computer Science (n=6, 5.2 Percent) Engineering (n=6, 5.2 Percent) are main source which published quality research in the field of Green Banking literature (see **Table 7**).

Figure 7 presents graphically the subject area in terms of publication on Green Banking literature between 2015 and 2025.

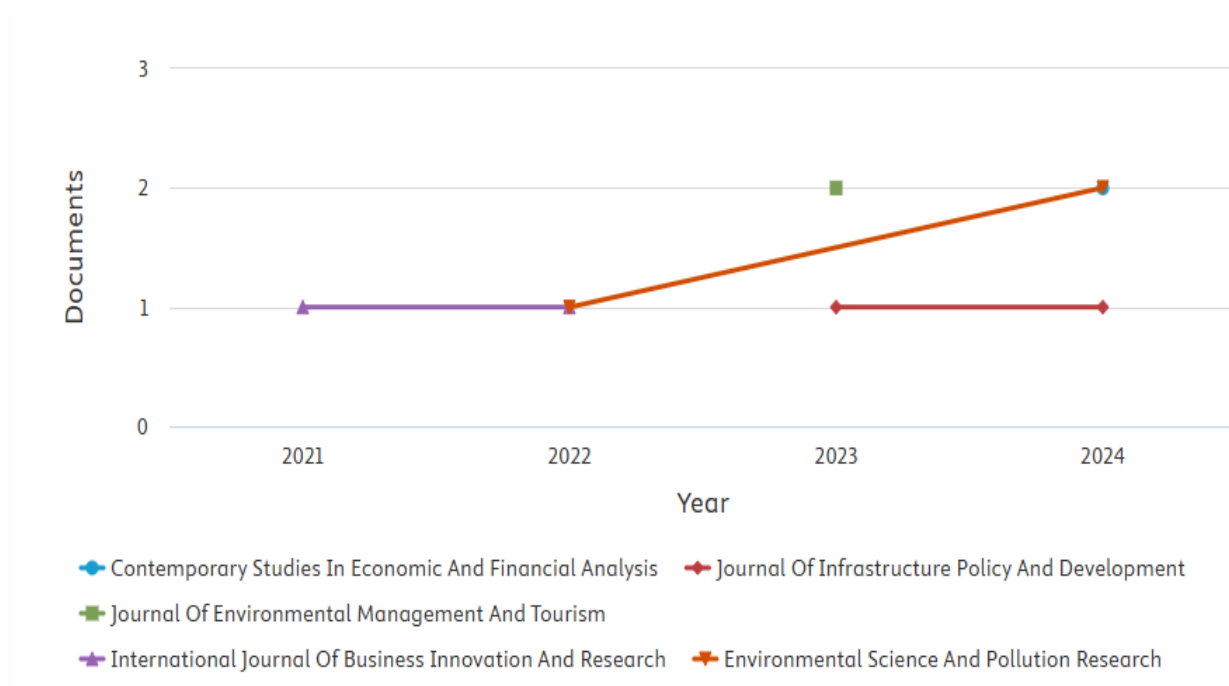
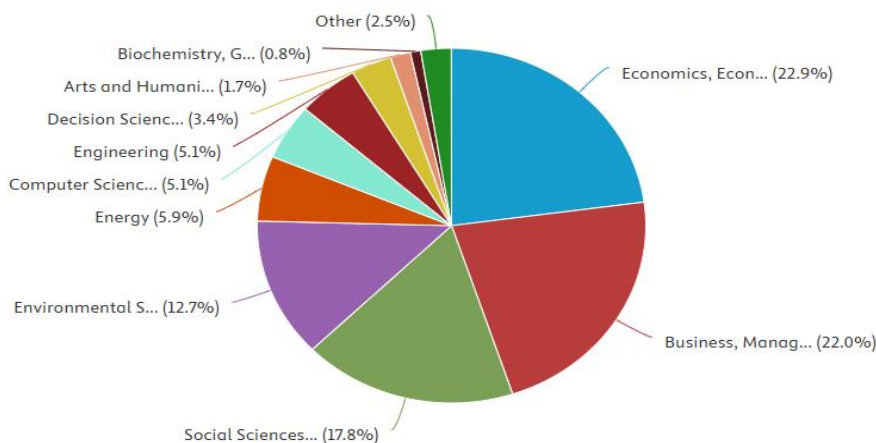


Table 7: The first ten subject areas according to the number of published documents in Green Banking literature between 2015 and 2025

Sr. no.	Subject area	N	%
1	Economics, Econometrics and Finance	27	23.5
2	Business, Management and Accounting	26	22.6
3	Social Sciences	21	18.3
4	Environmental Science	15	13.0
5	Energy	7	6.1
6	Computer Science	6	5.2
7	Engineering	6	5.2
8	Decision Sciences	4	3.5
9	Arts and Humanities	2	1.7
10	Biochemistry, Genetics and Molecular Biology	1	0.9

Source: Scopus database

Figure 7: Documents by source.



Source: Scopus database.

FINDINGS

There is a clear upward trend in the quantity of documents, which indicates a growing interest in the study of green banking practices, according to the first research question. There has been a notable and swift increase in the quantity of published materials.

Examining the current status of research publications on Green Banking techniques was the goal of the first research question. The results show a discernible increase in study volume over the previous ten years, suggesting a rise in both scholarly and applied interest in the topic. With 36.8% of all publications, 2024 was the most productive year, followed by 2023 with 29.8%. This growth indicates that green banking has become

a crucial component of sustainable finance. The publication types include research articles, conference papers, book chapters, review articles, and a book, showing a diverse range of scholarly contributions that underscore the relevance of Green Banking in financial discourse.

The second study question investigates how publications and articles impact sustainable practices. Several important articles among the 57 examined documents have had a major influence on the field, indicating their pivotal significance in advancing studies on sustainable banking practices. These well-known papers demonstrate that business sustainability, customer involvement, and institutional governance are important topics in this field of study.

Regarding the third research topic, the data reveals that India is the country with the highest research output on Green Banking initiatives, accounting for 30.9% of all publications. Pakistan comes in second. This demonstrates how developing countries are becoming more conscious of the value of sustainable practices. Additionally, the fact that both developed and developing nations are actively engaged in this subject shows that the significance of green banking is acknowledged globally. Important contributions have been made by renowned authors like Taneja, S. and Al-Adwan, A.S., as well as by organizations like Universiti Teknologi MARA and Chandigarh University. These writers and academic institutions are setting the standard for influential research that improves our knowledge and application of green banking techniques.

Finding study ideas and keywords that merit more investigation was the main goal of the fourth research question. Although themes like "green banking," "sustainability," and "sustainable banking" have been studied in great detail, keyword analysis showed that concentrating on these new themes could help develop more comprehensive, inclusive, and creative sustainability practices in the financial industry as well as increase knowledge of the wider effects of green banking.

The last study topic looked into the difficulties that are currently encountered while putting Green Banking ideas into practice. The results point to a number of barriers that prevent the successful implementation of green practices, such as a lack of knowledge and experience among stakeholders. Furthermore, banks find that sustainable initiatives yield a low return on investment, which deters them from being as appealing as more conventional alternatives. Evaluation and reporting are made more difficult by the absence of trustworthy instruments and consistent criteria to gauge the effects of sustainable activities. Furthermore, regulatory and policy barriers, along with high upfront costs for implementing green technologies, pose practical difficulties. Overcoming these challenges requires coordinated efforts among policymakers, financial institutions, and researchers to create supportive frameworks, enhance capacity-building, and develop innovative financial instruments.

Suggestions:

The study's conclusions allow for the proposal of a number of important recommendations aimed at improving the uptake and efficacy of Green Banking tactics. First, by encouraging paperless banking, making investments in energy-efficient equipment, and setting up solar-powered ATMs, financial institutions should include Green Banking into their fundamental operational framework. In addition to increasing client convenience, putting an emphasis on digital banking services can lessen the environmental impact. Banks must create thorough Green Banking policies that offer advantageous lending conditions for environmentally friendly projects and incorporate environmental risk assessments into the loan approval procedure. Banks should launch educational initiatives and teach staff and clients on sustainable financial practices in order to raise stakeholder awareness. Green financial solutions, such green savings accounts and green loans, can encourage people to act in an ecologically conscious manner.

In order to promote the shift to sustainable banking, regulatory agencies should also offer incentives and clear rules. In order to precisely assess the financial and environmental effects of Green Banking activities, institutions are also advised to make investments in the creation of standardized instruments and frameworks. To overcome today's obstacles and promote innovation in sustainable finance, cooperation between academia, business, and policymakers is crucial. In addition to helping financial organizations achieve their sustainability objectives, these tactics can be extremely helpful in tackling the world's environmental problems.

CONCLUSION

The purpose of this article is to present a comprehensive bibliometric analysis of the literature on Green Banking. As a key component of sustainable finance, Green Banking has emerged as a significant area of research within the broader context of environmental sustainability. To conduct this bibliometric study, 57 relevant documents were extracted from the Scopus database using Boolean search criteria for the period between 2015 and 2025.

Over the past two and a half decades, the concept of Green Banking has gained substantial recognition, evidenced by a growing volume of scholarly publications. Our analysis reveals that both developed and developing nations acknowledge the critical role of Green Banking in promoting environmental sustainability.

Among the leading contributors in this field, Taneja, S. and Al-Adwan, A.S. stand out in terms of publication volume. Other highly productive authors include Bansal, N., Bhat, A.A., Mir, A.A., Niyazbekova, S., and Roy, A. The top contributing institutions in Green Banking research are Chandigarh University, Bangabandhu Sheikh Mujibur Rahman Science and Technology University, Universiti Teknologi MARA, Tezpur University, and the University of Kashmir.

Key journals that have published high-quality research on Green Banking include Environmental Science and Pollution Research, Contemporary Studies in Economic and Financial Analysis, International Journal of Business Innovation and Research, Journal of Environmental Management and Tourism, and Journal of Infrastructure Policy and Development. These publications serve as valuable resources for financial institutions, government bodies, regulatory authorities, investors, policymakers, and academic researchers interested in the evolving landscape of Green Banking.

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