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A Review of Green Banking Research in the Past Three Decades: A Bibliometric Analysis

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KEYWORDS

Bibliometric analysis, green banking, Biblioshiny, R package, Thematic mapping, co-citation.

ABSTRACT

Purpose: This study aims to conduct a bibliometric analysis on Green Banking from the journals in the Scopus data base between 1997 to 2025. The paper covered the past three decades of publication and carried out performance analysis and mapping analysis of articles.

Design/methodology/approach: The study uses bibliometric analysis. The study examined the scientific productivity of articles, productive authors, citable documents, most relevant institutions, cited countries, co-occurrence of keywords, thematic mapping, co-citations and collaboration of authors and countries. The study used Biblioshiny as a tool to carry out the performance analysis and science mapping analysis.

Findings: The results shows that the number of publications has significantly increased in the past decade, 88.74% authors contributed at least a single article.7.45% of authors published two articles, 1.83% of the authors published three documents, 0.84% of authors contributed four documents. The China, India, and Malaysia were the most productive countries in terms of the total number of citations. Sustainability (Switzerland), Environment, development and sustainable, international journal of ethics & systems and journal of green economics are the top outlets in the green banking literature.

Value: Over the past decade, the research in green banking has exploded because of the growing interest of researchers in this field. The study is more comprehensive in terms of the actors and methods involved in analyzing the scientific production of articles in the area of knowledge management.

1. INTRODUCTION

In recent years, tourism in India has become one of the biggest contributers to national economy. The industry impacts the way the world sees India, through hospitality, accommodation, leisure, culture, transportation, etc. Higher market-competitive challenges have made tourism service provider focus on customer-focused strategies as a differentiation factor. Thus, in this context, it is important to identify and explain mainly the factors that influence tourists′ purchase intention to maintain a healthy and growing business.

The study endeavors to answer the following questions:

Q1. What are the core Green banking journals?

Q2. Who are the most cited authors and documents?

Q3. What are the frequently used Green banking themes?

Q4. What is the total number of paper published in Green banking?

Q5. Which is the most productive journal in the area of green banking?

Q6. Which are the widely cited countries and affiliations?

To answer these questions, the study applies performance analysis and science mapping analysis. The study is organized as follows: the first section discusses the methodology. The second section discuss the performance analysis and science mapping and the third section discusses the results, discussion and conclusion.

2. METHODOLOGY

Performance analysis

Annual total citations per year

The year 1997 had one article is published in green banking with11 citation per article and the average number of citations per year was 0.38. The years 2012, 2013 and 2014 there was increasing in terms of paper published. In the year 2015 there were only two paper published which one is 2 total citation per year and second is 1.182 total citation per year; However, the average number of citation has not improved from 11 (average citation per article). The year 2020 was most productive with regard to the average number of citations per document and an average citation per year, as from the Table. The first decade 1997-2006 was less productive in terms of an average citation per year because in the first decade only one document data is available. The second decade 2007-2016 was productive in terms of an average number of citations per year documents with years 2012(2.50), 2013(0.33),2014(10.75),2015(17.50). The third decade 2017-2025, witnessed a massive surge in the terms of frequency of documents, with 2024(89) contributing most, as shown in figure. The average number of citations per year has significantly improved, with 2020 (4.95).

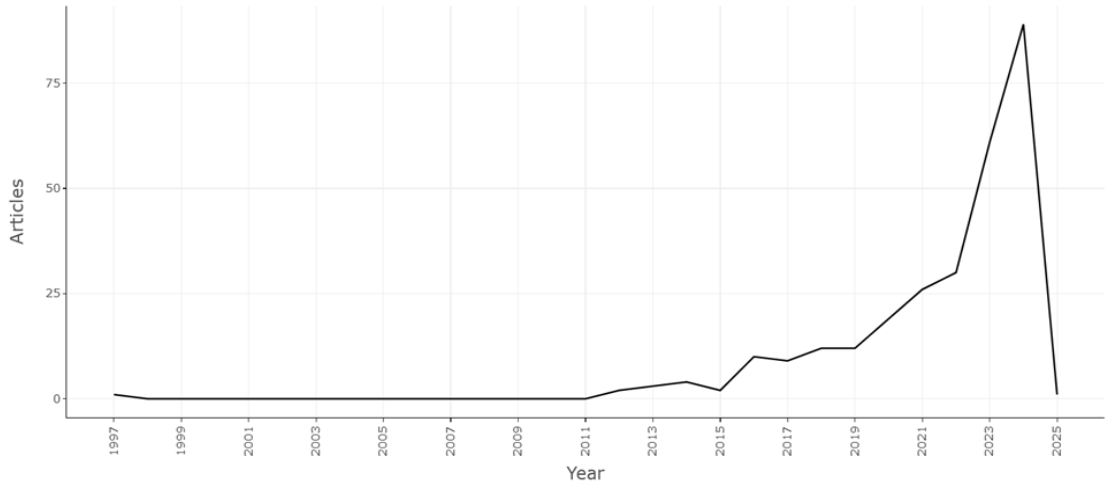

Figure.1 Annual total citation per year (1997-2025)

Year	Mean TC per Art	N	Mean TC per Year	Citable Years
1997	11.00	1	0.38	29
2012	2.50	2	0.18	14
2013	0.33	3	0.03	13
2014	10.75	4	0.90	12
2015	17.50	2	1.59	11
2016	12.00	10	1.20	10
2017	13.11	9	1.46	9
2018	25.50	12	3.19	8
2019	12.50	12	1.79	7
2020	29.68	19	4.95	6

2021	20.15	26	4.03	5
2022	23.37	30	5.84	4
2023	6.75	61	2.25	3
2024	1.30	89	0.65	2
2025	0.00	1	0.00	1

Table 1

Notes: Annual total , N= number of publications

Citation per year, Mean TC per Art = average total citations per article

(1997-2025), Mean TC per Year = average total citations per year

Scientific production

The scientific production of articles was calculated from 1997 to 2025, as shown in Table 3. The 281 articles were published from 1997 to 2025 in Green Banking with 3.46 average years of publication. The average number of citations per document was 11.05. out of 281 documents 192 articles, 5 books, 38 book chapter, 32 conference paper, 2 editorial, 1 erratum, 1 retracted, 10 reviews were published in Green banking research. The result indicate 711 authors with 757 author keywords, including 35 single authored documents.

Description	**Results**
MAIN INFORMATION ABOUT DATA	
Timespan	1997:2025
Sources (Journals, Books, etc)	192
Documents	281
Annual Growth Rate %	0
Document Average Age	3.46
Average citations per doc	11.05
References	13336
DOCUMENT CONTENTS	
Keywords Plus (ID)	518
Author's Keywords (DE)	757
AUTHORS	
Authors	711
Authors of single-authored docs	35
AUTHORS COLLABORATION	
Single-authored docs	36
Co-Authors per Doc	3.01
International co-authorships %	28.83
DOCUMENT TYPES	
article	192
book	5

book chapter	38
conference paper	32
editorial	2
erratum	1
retracted	1
review	10

Table 2- Main information

Analysis of the most productive authors

The scientific production of authors was calculated with number of articles contributed by each author, as shown in Figure 2. The scientific output of authors was determined by the bubble size, color intensity and the authors' timeline. Figure 2 indicates that Nisha N was the most productive author in terms of the frequency of publications from 2016 to 2024, as indicated by the color intensity. Bukhari SAA, Hashim F, and Amran A have relatively denser and larger circles, indicating significant contributions during certain years (particularly from 2020 onward). Bukhari SAA and Hashim F show the largest and most frequent contributions, suggesting they are prominent figures in the dataset.

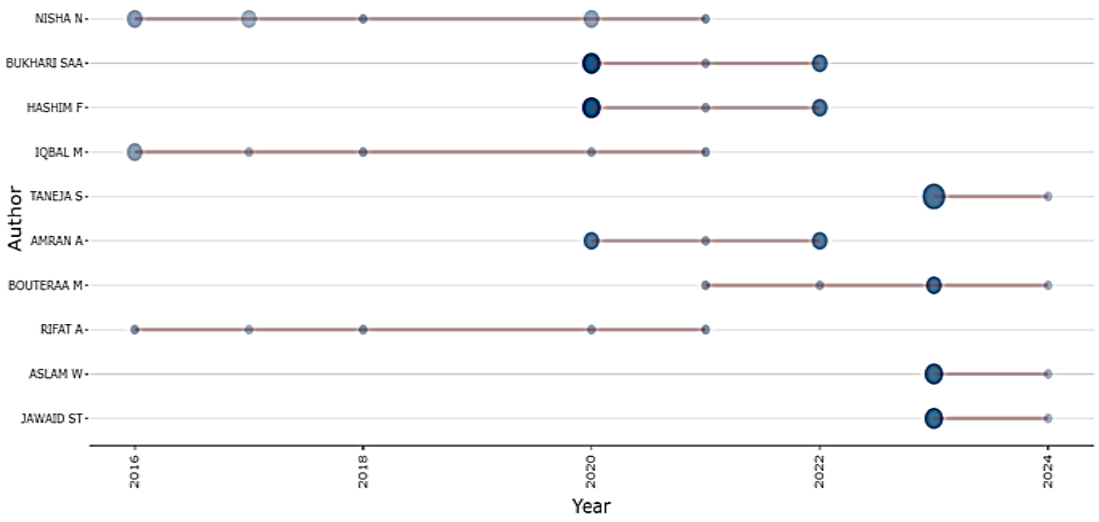

Figure 2-Top authors production over time (1997-2025)

Analysis of most cited documents

The analysis of performance data reveals that Nisha N (2016) is the most prolific document, accumulating 31 citations, and is also the most active author, having published numerous works from 2016 to 2021. Their research primarily centers on themes like green banking, client perceptions, and the risks associated with financial systems. Taneja S has two entries in the table, one from 2022 and another from 2023, focusing on sustainable urban development and financial technologies. Nisha N's body of work is distributed over six years (2016–2021), demonstrating a consistent output in the realm of green banking. The total citation figures indicate that the most referenced paper is by Nisha N (2016) titled "The role of commercial banks in green banking adoption," which has garnered 31 citations, showcasing the considerable impact of this research. The 2017 publication, "Green investments and returns: A developing country perspective," also merits attention with an average of 0.83 citations per year, suggesting ongoing influence despite a relatively modest total citation figure. Nisha N concentrates on green banking, risk evaluation, and client behavior, advocating for sustainability within financial practices. Their works have been featured in journals such as the International Journal of Green Economics and the Journal of Islamic Economics, Banking, and Finance. Taneja S has also explored mapping landscapes for green banking strategies and reimagining financial technologies, contributing to journals like Frontiers in Sustainable Cities. Nisha N's research demonstrates a sustained influence, evidenced by high citation numbers and topics that resonate within the sustainability and green banking sectors. Taneja S is gaining traction in this field, examining newer areas connected to financial technologies and urban sustainability. The overall pattern illustrates an increasing academic interest in sustainable finance and technological progress in banking systems.

Documents written	N. of Authors	Proportion of Authors
1	631	0.887
2	53	0.075
3	13	0.018
4	6	0.008
5	3	0.004
6	4	0.006
8	1	0.001

Table 3- Author's production through Lokta's law

Author	Year	Freq	TC	TC p Y
AMRAN A	2020	2	61	10.167
AMRAN A	2021	1	10	2
AMRAN A	2022	2	40	10
ASLAM W	2023	3	39	13
ASLAM W	2024	1	0	0
BOUTERAA M	2021	1	17	3.4
BOUTERAA M	2022	1	7	1.75
BOUTERAA M	2023	2	35	11.667
BOUTERAA M	2024	1	1	0.5
BUKHARI SAA	2020	3	97	16.167
BUKHARI SAA	2021	1	10	2
BUKHARI SAA	2022	2	40	10
HASHIM F	2020	3	97	16.167
HASHIM F	2021	1	10	2
HASHIM F	2022	2	40	10
IQBAL M	2016	2	38	3.8
IQBAL M	2017	1	5	0.556
IQBAL M	2018	1	25	3.125
IQBAL M	2020	1	13	2.167
IQBAL M	2021	1	17	3.4
JAWAID ST	2023	3	39	13
JAWAID ST	2024	1	0	0
NISHA N	2016	2	38	3.8

NISHA N	2017	2	11	1.222
NISHA N	2018	1	25	3.125
NISHA N	2020	2	18	3
NISHA N	2021	1	17	3.4
RIFAT A	2016	1	31	3.1
RIFAT A	2017	1	5	0.556
RIFAT A	2018	1	25	3.125
RIFAT A	2020	1	13	2.167
RIFAT A	2021	1	17	3.4
TANEJA S	2023	5	35	11.667
TANEJA S	2024	1	0	0

Table 4- Authors production over time (total documents and citation)

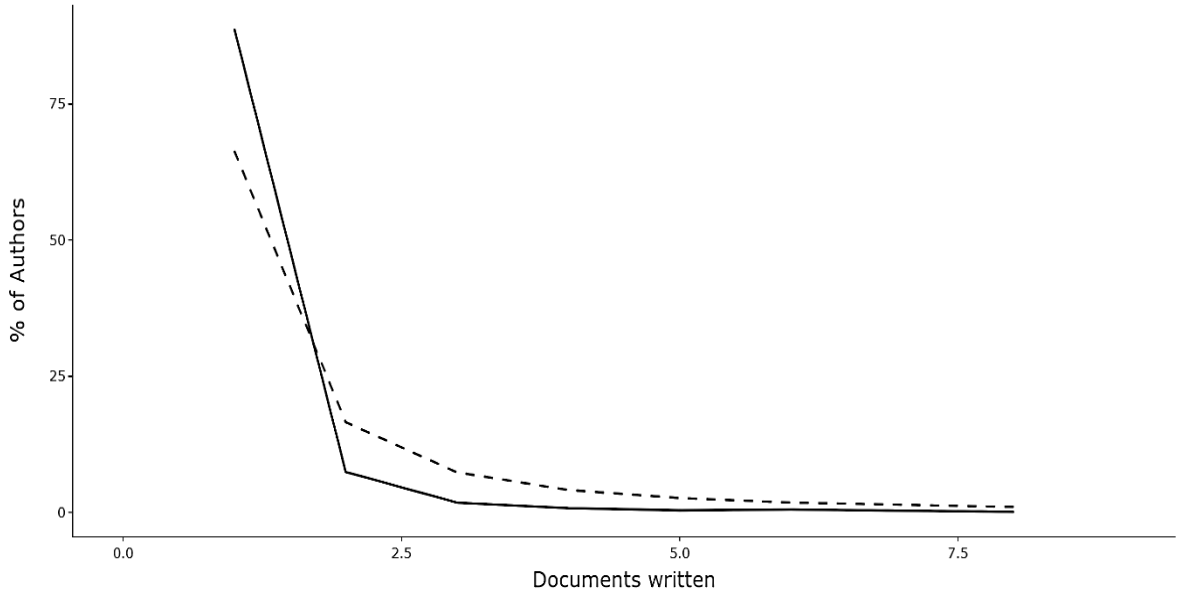

Figure 3- Frequency distribution of scientific productivity (Lokta's law)

Author	year	TI	SO	DOI	TC	TC p Y
NISHA N	2021	EVALUATING ATTRACTIVENESS AND PERCEIVED RISKS: THE CASE OF GREEN BANKING SERVICES IN BANGLADESH	INTERNATIONAL JOURNAL OF ASIAN BUSINESS AND INFORMATION MANAGEMENT	10.4018/IJABIM.20210101.oa1	17	3.4

NISHA N	2020	GREEN BANKING ADOPTION: AN EXAMINATION OF STATE-OWNED BANKS OF BANGLADESH	INTERNATIONAL JOURNAL OF TECHNOLOGY AND HUMAN INTERACTION	10.4018/IJTHI.2020040106	13	2.167
NISHA N	2020	CAN CENTRAL BANK SURVIVE THE GREEN BANKING REVOLUTION? A CASE OF BANGLADESH BANK	INTERNATIONAL JOURNAL OF ASIAN BUSINESS AND INFORMATION MANAGEMENT	10.4018/IJABIM.2020070104	5	0.833
NISHA N	2018	EXPLORING CLIENT PERCEPTIONS AND INTENTIONS IN EMERGING ECONOMIES: THE CASE OF GREEN BANKING TECHNOLOGY	INTERNATIONAL JOURNAL OF ASIAN BUSINESS AND INFORMATION MANAGEMENT	10.4018/IJABIM.2018070102	25	3.125
NISHA N	2017	ACCEPTANCE OF GREEN BANKING FRAMEWORK IN BANGLADESH: THE CASE OF ISLAMIC BANKS	JOURNAL OF ISLAMIC ECONOMICS, BANKING AND FINANCE		5	0.556
NISHA N	2017	GREEN INVESTMENTS AND RETURNS: A DEVELOPING COUNTRY PERSPECTIVE	MEASURING SUSTAINABLE DEVELOPMENT AND GREEN INVESTMENTS IN CONTEMPORARY ECONOMIES	10.4018/978-1-5225-2081-8.ch001	6	0.667
NISHA N	2016	CUSTOMERS' PERCEPTIONS OF GREEN BANKING: EXAMINING SERVICE QUALITY DIMENSIONS IN BANGLADESH	MANAGERIAL STRATEGIES AND SOLUTIONS FOR BUSINESS SUCCESS IN ASIA	10.4018/978-1-5225-1886-0.ch001	7	0.7

NISHA N	2016	THE ROLE OF COMMERCIAL BANKS IN GREEN BANKING ADOPTION: A BANGLADESH PERSPECTIVE	INTERNATIONAL JOURNAL OF GREEN ECONOMICS	10.1504/IJGE.2016.081906	31	3.1
TANEJA S	2024	MAPPING THE LANDSCAPE OF GREEN BANKING STRATEGIES: A BIBLIOMETRIC APPROACH	FRONTIERS IN SUSTAINABLE CITIES	10.3389/frsc.2024.1404732	0	0
TANEJA S	2023	SUSTAINABILITY-DRIVEN FINANCE: RESHAPING THE FINANCIAL WORLD	ALGORITHMIC APPROACHES TO FINANCIAL TECHNOLOGY: FORECASTING, TRADING, AND OPTIMIZATION	10.4018/979-8-3693-1746-4.ch005	0	0

Table 5- Most cited documents

Source dynamics and Bradford's distribution

Source dynamics describes the annual occurrences of the term Green Banking in various journals. The shaded area labeled "Core Sources" indicates journals that publish a significant proportion of the articles (highest contribution). These sources are at the beginning of the curve, reflecting high productivity and centrality to the field. top journals include Sustainability (Switzerland) and Environment, Development, and Sustainability, which have the highest article counts. These journals are likely key platforms for publications in the field of sustainability, green finance, or related areas. The table illustrates the distribution of scholarly articles across different journals from 1957 to 2023, emphasizing significant trends and observations. In the initial period (1957–2000), the dataset shows no recorded publications, indicating little to no research activity in the relevant field during these years. Sparse publications begin to appear from 2001 to 2010, signaling the onset of contributions, though at a gradual rate. However, a noteworthy upward trend in publications is evident from 2011 onwards, with a marked increase particularly noticeable after 2016. This trend indicates a rising research interest and activity in sustainability, green finance, and connected topics.

Journals like Sustainability (Switzerland) and Environment, Development, and Sustainability emerge as major contributors. For example, Sustainability (Switzerland) tops the list with the highest number of publications in recent years, including 11 articles in 2023 alone. Likewise, Environment, Development, and Sustainability and the International Journal of Green Economics consistently contribute, albeit in smaller volumes. Other publications, such as the International Journal of Ethics and Systems and Environmental Science & Pollution Research, contribute intermittently, showcasing a wider variety of research outlets. The distribution aligns with Bradford's Law, whereby a limited number of journals account for the bulk of published articles while others represent the longer tail with fewer entries. The rising publication numbers over the past decade signify an increasing academic emphasis on sustainability and environmental concerns, consistent with global movements to tackle climate change and sustainable development issues. The steady growth in contributions to these key journals highlights their essential role in fostering research in these fields. More researchers are aiming for these prominent platforms to enhance visibility and impact, with journals like Sustainability (Switzerland) serving as leading venues for disseminating relevant studies. This upward trajectory emphasizes the growing significance of sustainability-focused scholarship and points to the broadening scope of research across interdisciplinary and specialized journals. It marks a major shift in academic focuses toward confronting urgent environmental and societal issues through research.

Year	SUSTAINABILITY (SWITZERLAND)	ENVIRONMENT, DEVELOPMENT AND SUSTAINABILITY	INTERNATIONAL JOURNAL OF ETHICS AND SYSTEMS	INTERNATIONAL JOURNAL OF GREEN ECONOMICS	E3S WEB OF CONFERENCES	ENVIRONMENTAL SCIENCE AND POLLUTION RESEARCH
1997	0	0	0	0	0	0
1998	0	0	0	0	0	0
1999	0	0	0	0	0	0
2000	0	0	0	0	0	0
2001	0	0	0	0	0	0
2002	0	0	0	0	0	0
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0
2011	0	0	0	0	0	0
2012	0	0	0	1	0	0
2013	0	0	0	1	0	0
2014	0	0	0	3	0	0
2015	0	0	0	3	0	0

2016	0	0	0	4	0	0
2017	1	0	0	4	0	0
2018	2	0	0	4	1	0
2019	3	0	0	6	1	0
2020	4	1	1	6	1	0
2021	5	3	1	8	1	0
2022	7	6	2	8	1	1
2023	9	7	3	8	3	1
2024	11	9	8	8	5	5
2025	11	9	8	8	5	5

Table 6- Source dynamics

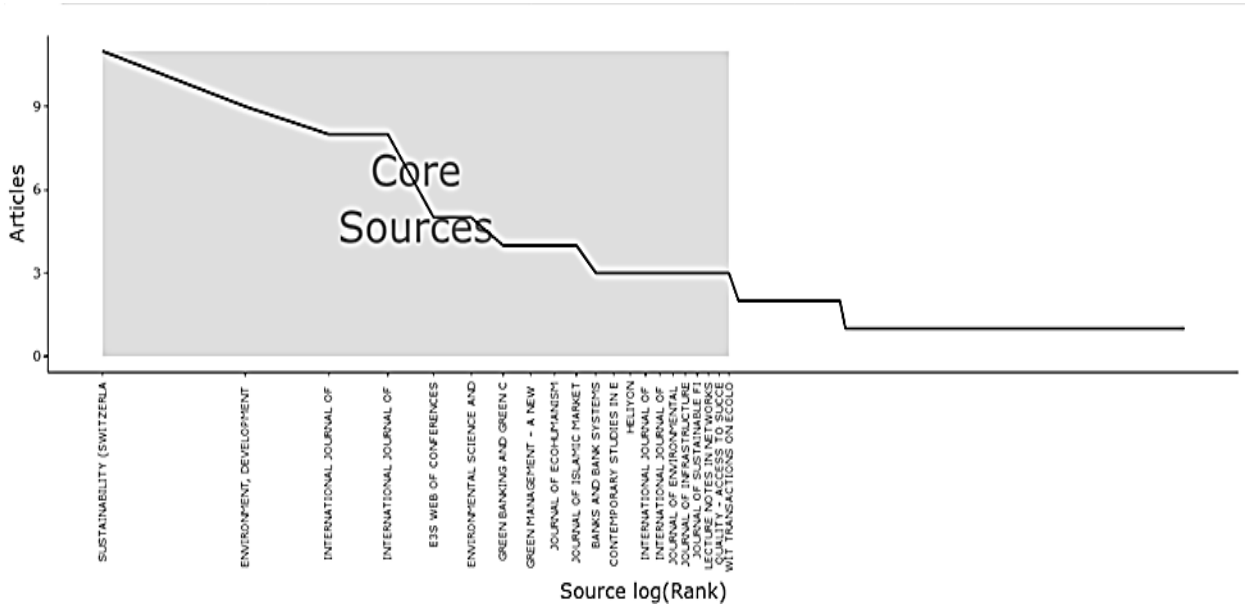

Figure 4- Distribution of titles based on Bradford's law

Most cited countries

The results of biblioshiny indicate that the CHINA was the most cited country with more than 450 citations in green banking research, as shown in the figure 5. Also the India was cited with more than 350 citation in green banking. The countries such as Malaysia and Bangladesh contributed more than 300 citations with 17.80 and 31.90 average article citations from 1997 to 2025. However, Australia was most productive with regard to average article citations, followed by Cyprus 66.00 average citations per article, as shown in the table 9. The top 10 countries China, India, Malaysia, Bangladesh, Australia, Indonesia, United Kingdom, Pakistan, Korea, and Cyprus contributed more than 2100 citations, and the rest countries contributed less

than 450 citations in the green banking research. China was most productive in Asia, followed by India and Malaysia with 454, 379, and 321 citations. The countries including Vietnam, Azerbaijan, Germany, Peru, Spain, Iraq, Uzbekistan, Brazil, Bulgaria, Canada, Jordan, Kazakhstan, Mauritius, Portugal, Romania, Slovenia, and Somalia were least productive with less than 30 citations.

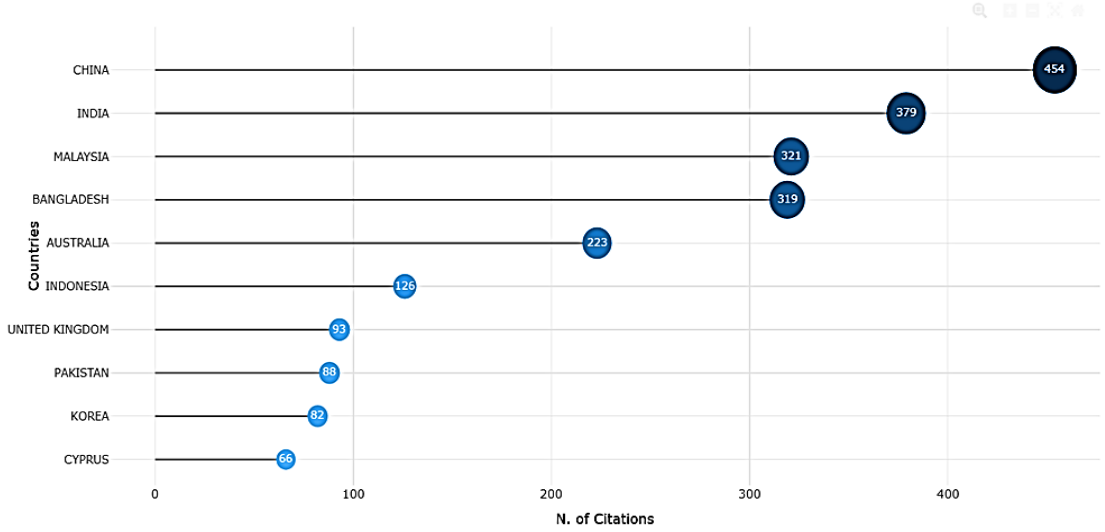

Figure 5- Most cited countries

Country	Total Citations (TC)	Average Article Citations
CHINA	454	45.40
INDIA	379	9.50
MALAYSIA	321	17.80
BANGLADESH	319	31.90
AUSTRALIA	223	74.30
INDONESIA	126	5.20
UNITED KINGDOM	93	23.20
PAKISTAN	88	7.30
KOREA	82	41.00
CYPRUS	66	66.00
TURKEY	53	7.60
OMAN	51	12.80
USA	44	8.80
HONG KONG	43	43.00
UNITED ARAB EMIRATES	32	32.00
SAUDI ARABIA	31	6.20
GREECE	28	14.00
FRANCE	26	13.00
UKRAINE	21	21.00

ITALY	19	9.50
POLAND	18	6.00
GHANA	10	10.00
IRAN	9	9.00
BRUNEI	8	8.00
PHILIPPINES	6	6.00
SERBIA	6	6.00
VIETNAM	5	5.00
AZERBAIJAN	4	4.00
GERMANY	4	2.00
PERU	4	4.00
SPAIN	4	1.30
IRAQ	2	2.00
UZBEKISTAN	2	2.00
BRAZIL	0	0.00
BULGARIA	0	0.00
CANADA	0	0.00
JORDAN	0	0.00
KAZAKHSTAN	0	0.00
MAURITIUS	0	0.00
PORTUGAL	0	0.00
ROMANIA	0	0.00
SLOVENIA	0	0.00
SOMALIA	0	0.00

Table 7- Most cited countries (1997 to 2025)

Most relevant affiliation

University have been the most consistent platforms to promote and support the research. The Sains Malaysia university was the most productive in terms of the publications, followed by Bina Nusantara university and Malaysia Sabah university, as shown in the figure 6. Ho Chi Minh University of Banking and Lahore School Of Economics contributed 7 articles from 1997 to 2025. Cyprus international university, East West University, International Islamic University Malaysia, National University of science and technology (Nust), North South University published 6 articles to the Green banking as shown in figure 6.

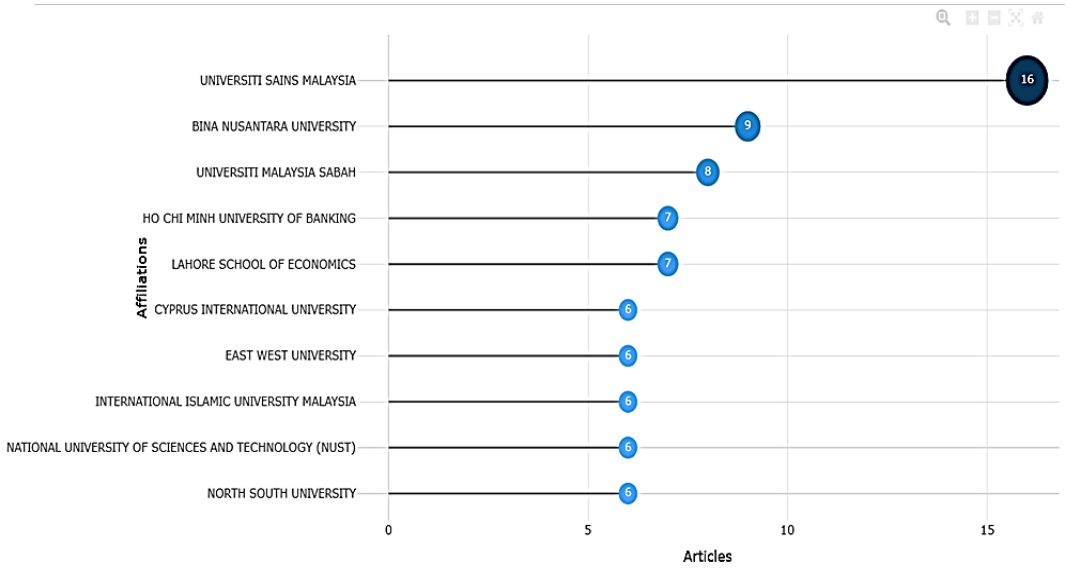

Figure 6- most relevant affiliations (1997 to 2025)

3. ANALYSIS OF KEYWORDS

The results of the bibliometric indicates that banking was the frequently used keyword with 36 occurrences, followed by sustainable development and green banking with 23 and 21 occurrences, respectively shown in Table 10. The study used frequency as word occurrence measure to identify the frequently used keywords in Green banking. The keywords, including green economy and sustainability have been used 18 times from 1997 to 2025. The other widely used keywords in the green banking research include Bangladesh, finance and Pakistan with 11 occurrences. The other keywords of importance include climate change, environmental economics, economic development, environmental protection, environmental sustainability, India, investment, investments, environmental management with more than 5 occurrences in the period. However, the results of word cloud indicate that banking, green banking, sustainable development, green economy were the most discussed keywords, as indicated by the thickness of the keyword, as shown in the figure 7. The result of the tree map suggest that banking constitutes 11% of the total keywords, followed by sustainable development 7%, green banking 6%, green economy and sustainability 5%, as shown in the figure 8.

Figure 7- Most frequent keywords based on world cloud

Terms	Frequency
banking	36
sustainable development	23

green banking	21
green economy	18
sustainability	18
Bangladesh	11
finance	11
Pakistan	11
climate change	9
environmental economics	9
economic development	7
environmental protection	7
environmental sustainability	7
India	7
investment	7
investments	7
environmental management	6
banking sectors	5
China	5
environmental impact	5
financial system	5
stakeholder	5
alternative energy	4
banking is	4
carbon dioxide	4
corporate social responsibility	4
covid-19	4
green finance	4
human	4
Indonesia	4
institutional framework	4
performance assessment	4
policy making	4
public sector	4
qualitative analysis	4
regression analysis	4

business	3
carbon emissions	3
central bank	3
developing world	3
Dhaka [Bangladesh]	3
economic and social effects	3
energy utilization	3
financial market	3
global warming	3
green financing	3
humans	3
information systems	3
literature review	3
management practice	3

Table 8- Most frequently used keywords

Figure 8- Tree map of keywords in knowledge management (1997-2025)

Thematic Mapping

This visualization of thematic analysis organizes subjects based on their significance (centrality) and growth (density), creating four distinct quadrants. Motor Themes (top-right) are both well-developed and highly significant, encompassing Sustainable Development, Green Banking, Green Economy, Finance, and Sustainability, highlighting their pivotal role in discussions. Basic Themes (bottom-right) such as Integrated Approach, Agriculture, and Housing are essential yet less evolved. Niche Themes (top-left), including Change Management, Cost Reduction, and Deforestation, are well-developed but not as central. Emerging or Declining Themes (bottom-left) like Small and Medium-sized Enterprises and Budget Control exhibit lower importance and evolution. The most prominent and impactful topics focus on sustainability and finance, followed by economic development and investment, while business and marketing themes like Sales Surveys and Marketing

Perception are still progressing. Certain themes, such as small enterprises and budget control, seem comparatively less relevant or on the decline. In summary, sustainability and finance are at the forefront of the discussion, while business-related themes take a backseat.

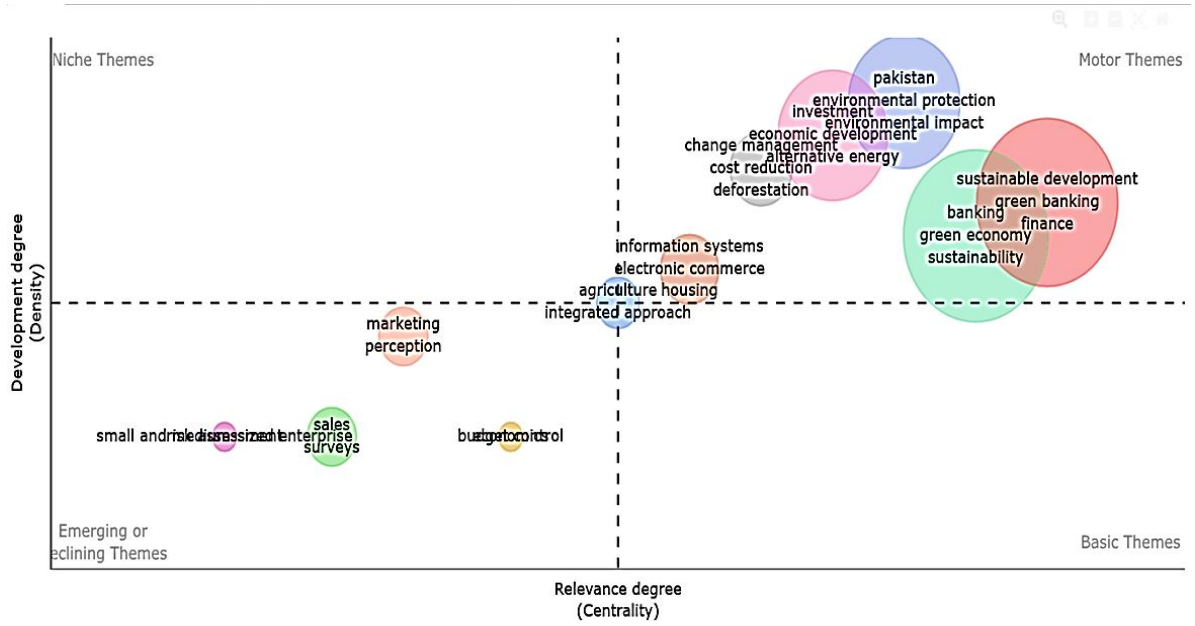

Figure 9- Thematic Mapping

Three field pilot

This Three-Field Plot gives us a clear picture of the most influential research, authors, and topics in green banking. On the left, we see the most frequently cited papers, with key studies from Zhang X., Wang Z., Ahuja N., and Ibe-Enwo G., which focus on green banking adoption, sustainability strategies, and environmental performance. In the center, some researchers stand out as major contributors, including Bukhari S.A.A., Hashim F., Amran A., Sharma M., Choubey A., and Khan H.Z., showing that they play a significant role in shaping this field. On the right, the main themes driving the conversation are Green Banking, Sustainability, Environmental Performance, Green Finance, Climate Change, and Corporate Social Responsibility, emphasizing the strong link between finance and environmental responsibility. Overall, the research is centered around how banks can adopt greener practices while balancing profitability and sustainability goals. This visualization helps us see the big picture—who's leading the conversation, what topics are trending, and how green banking is evolving in response to global challenges.

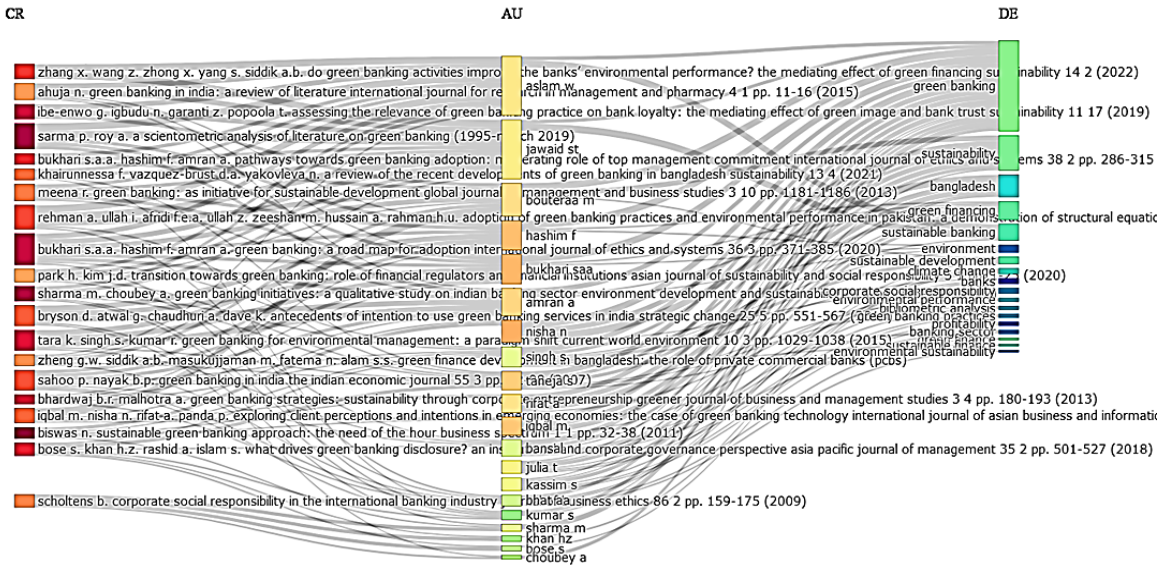

Figure 10- Three field pilot

4. RESULTS

In this study, we conduct a bibliometric analysis to better understand the intellectual base in the area of green banking. We reviewed 281 documents spanning from 1997 to 2025, which are indexed in Scopus using R bibliometric package. Performance analysis enabled us to explore the scientific production of articles, productive authors, most cited documents, most relevant affiliations and analysis of keywords. It was found that the scientific output of articles has significantly in creased in the last decade with 4.95 average years from publication. Study found that 711 authors in green banking, with 35% single authored documents and 3.01% co-author documents. The results of Lokta's law indicate that 88.74% of authors contribute a single article, 7.45% of the authors contributed two articles, 1.83% of the authors published three documents and 0.84% of the authors contributed four documents.

Bradford's law of scattering indicates that Sustainability (Switzerland), Environment, development and sustainability, International journal of ethics and systems and international journal of Green economics are the major outlets of publications in green banking.

The analysis of the institutions indicates that University Sains Malaysia was the Most productive in terms of the frequency of the publications, followed by Bina Nusantara University and University Malaysia Sabah. However, during the past 28 years and according to the number of paper published, University Sains Malaysia has become an influential institutions in the area of green banking.

The performance analysis shows a rapid increase in the number of publications leading to the overall growth of green banking research. The result indicate that the China was the most productive country based on the total citations received, followed by India and Malaysia.

The study of various themes such as sustainable development, green banking, green economy, finance and sustainability are basic and important area of green banking also these themes are highly developed in the area of green banking. Small enterprise and budget control was less developed theme in the area of green banking. Based on the analysis of the keywords used in the research, three major keywords have been identified, including banking, sustainable development, and green banking that are central to Green Banking.

5. DISCUSSION

The objective of application of bibliometric analysis is to statistically analysis and measures the published articles and its impact in the area of green banking. The studies in the past have been limited within the India. (Dr.Sarang Bhola, December 2024) and the present study is attempted to cover worldwide area in green banking. The core green banking journals are sustainability (Switzerland) and Environment, development and sustainability.

The most cited document id Nisha N's "The role of commercial banks in green banking adoption"(2016) and Nisha N is the most productive author with 31 citations. The frequently used knowledge management themes are sustainable development, green banking, green economy, and Finance and sustainability. In this study we can identify that sustainability and finance are the major discussed themes. and the business related themes are niches.

In this study total 281 papers are published during the 1997 to 2025. The highest documents are published in the year 2024 then followed by year 2023 and 2022.where the average cited documents in the year 2020 is highest. The most productive journal is sustainability (Switzerland). The wildly cited countries are Malaysia, India and China in the area of green banking. The Sains Malaysia university is productive in terms of the affiliation and productions.

Involvement of researchers around the globe indicates the importance of green banking as a field of research. The growth of green banking as a field of recent times has significantly increase because of availability of journals. Also there is increase in the number of document publication each year.

6. CONCLUSIONS, LIMITATION AND FUTURE SCOPE

The application of the bibliometric analysis to green banking is very recent, and the methods such as performance analysis and science analysis have made it easy to statistically analyze the scholarly publications across the field of green banking. The study attempts to analyze the 281 documents published across various green banking journals from 1997 to 2025. This study can help the green banking researcher uncovering the trends and patterns of publication in the field of green banking. The study also helps as tool to understand how the bibliometric analysis can be applied to other fields using various methods.

The study offers the multiple opportunity to researcher in the field of green banking. The study contributes to the field of green banking and extend current reviews in numerous ways. The study analyzes the theoretical and empirical studies published during 1997 to 2025 of green banking research. The study uses the various keywords and document sources to include more research articles covering the green banking studies; the study identifies top journals, productive authors, most cited articles, most cited countries, emerging themes which can help the researchers to understand how the field of green banking developed over the years. The study uses the advance bibliometrics package to perform the bibliometric analysis and create the data metrics for key words, coupling map, co-citation, thematic analysis as it creates good visualization and allows the authors to interpret data comprehensively.

The study presents the various suggestions and implications to researchers. First, the researcher use this data to understand the problems. Second, the study can help the researcher to uncover the latest developments in the field of green banking. Third, academicians can use this study as a guide to understand that how to evaluate the academic outcome using various indicators. Forth, the study can be helpful to researcher to understand the emerging the themes, patterns, trends in the area of green banking. Fifth, the study analyzes the most cited authors and countries with most productive authors and countries in the field of green banking.

The limitations of this bibliometric analysis should be addressed. First, the data for this study were extracted from the Scopus, though Scopus is the largest abstract and citation database covering articles from various fields, it doesn't provide the data related to impact factor and social science citations index (SSCI). The future studies can extract the bibliometric data from web of science also. Second, the study used the Biblioshiny as a software tool of RStudio to perform science mapping and performance analysis of green banking literature and exclude other tools like VOS viewer etc. Third, the bibliometric analysis was conducted during 1997 to 2025, the productivity of article may vary in each period. Forth, the study was limited to keywords such as green banking and other keywords are exclude, which may affect the results, and the future research should include in this keyword as a part of study.

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