
Green Marketing and Sustainability: A Comprehensive Bibliometric Analysis

Dr. Shreekrishna Kharel

Associate Professor, Central Department of Management, TU, Nepal

ORCID: <https://orcid.org/0009-0000-9455-3113>

E-mail: shreekrishna.kharel@cdm.tu.edu.np

Padam Bahadur Lama (Corresponding Author)

Assistant Professor, Saraswati Multiple Campus, TU, Nepal

ORCID: <https://orcid.org/0000-0002-1498-4480>

E-mail: padam.lama@smc.tu.edu.np

ABSTRACT

Green marketing and sustainability emphasize eco-friendly business practices, being an environmentally, socially, and economically responsible organization with an endeavor embracing as a mechanism of fostering innovation and trust among consumers. Thus, this study aims to analyze the academic literature on green marketing and the sustainability field, representing the study period from 2004 to 2024. This study employs bibliometric analysis with Biblioshiny (R Package) and VOS viewer software. The Scopus database of 370 is involved in the study, consisting of research articles published only in the English language, representing the subject area of business, management, and accounting. Further, this study analyzed scientific production, citation, relevant authors, source, affiliation, countries, trend topic, frequent map, thematic map, and bibliographic coupling. The findings of the study revealed a growing trend in the annual scientific publication, showing the highest mean total citation per article and per year in 2011. Moreover, sustainability is reflected as one of the most used keywords, followed by green marketing, depicting the United States of America as a highly contributing country. The most relevant journal is depicted as the Journal of Cleaner Production with a rank of first and a high H-index, followed by Business Strategy and the Environment Journal. The most relevant author found is Rosa Maria Dangelico, and the most globally cited document of Paul. The most relevant affiliation remains Universidade Do Vale Do Rio Dos. The trend topic on sustainability and green marketing gained popularity from 2019 onwards and was found as a highly occurring keyword in the research works of scholars. This study demonstrates the rapid growth of research on the green marketing and sustainability theme, establishing a benchmark for future studies.

Keywords: *Bibliometric analysis, biblioshiny, green marketing, sustainability, VOS Viewer*

JEL Classification: M31, Q54, Q56

Introduction

Green marketing advocates for crafting products compatible with the environmental atmosphere, eliminating the hazards while implementing entire marketing activities (Chaudhary & Agarwal, 2024). This green marketing initiative intends to meet customer expectations and eliminate negative environmental impacts through rational marketing strategies that align with green marketing practices (Ezeh & Dube, 2025). Interestingly, green marketing efforts help prevent ecological degradation by employing a green marketing approach that promotes eco-friendly products and services, exhibiting responsible marketing behavior (Lima et al., 2024). Similarly, sustainability marketing equally promotes social, environmental, and economic betterment of the organization and its stakeholders, in which consideration of customer value, embracing innovation, customer-oriented activities, and an approach to societal marketing enhances organizational sustainability marketing, driving successful business (Mandal, 2024; Nazari et al., 2024; Bala, 2024).

Additionally, business operations, product development using obsolete technology, and the nature of the products themselves impact health and the environment while disregarding the regulatory framework, which ultimately worsens environmental conditions. Interestingly, global collaboration and consensus on climate change and other commitments established a foundation for formulating policy to mitigate greenhouse issues that influence the modality of business operation, strategic steps in marketing, and the shaping of the behavior of consumers (Bhardwaj et al., 2025; Mohanan & Rangaswamy, 2025). Thus, the diverse industries started embracing strategies with an environmentally harmless product, emphasizing the requirement of customers for sustainable

products and services (Maduwinarti et al., 2025).

Next, business entities that are merely aware of and meet only the minimum environmental standards do not provide the best service; instead, proactively understanding and implementing customer needs for green products and services represents a socially responsible approach that fosters a culture of green marketing and sustainability (Mohana & Rangaswamy, 2025). Thus, business needs to establish a perpetual ground by recognizing innovative green marketing as a path to eradicate the issues of sustainable development (Roach et al., 2014). Therefore, preserving environmental standards is the concern of academic scholars and experts of the industrial sector, and it further demands the concentration of public and business entities (Kumar & Harichandan, 2022).

Moreover, the bibliometric analysis in the field of green marketing and sustainability is important because it extends the developing perspective in the evolving theme of scholarly collaboration to better implement the green marketing and sustainability concept, which depicts the landscape of thematic maps and research trends that exhibit benchmarks for academic scholars and practitioners for future investigation in the green marketing areas (Yanah & Tjahjadi, 2025). Thus, a bibliometric analysis of green marketing and sustainability provides a comprehensive overview of the existing literature, highlighting the contributions of researchers and indicating the growing interest in the field.

The bibliometric analysis in the field of green marketing is indispensable as burning environmental issues are growing; a rapid response to prevent environmental conditions is required as an agenda for sustainable development (Nguyen et al., 2019; Leyva-Hernandez et al., 2021; United Nations (UN), 2015). Further, the previous studies mostly discovered quantitative and qualitative analyses lacking the comprehensive analysis of prevailing literature, and more evidence-based evidence was revealed (Chalissery et al., 2023). Importantly, this study addresses these research questions: What are the general trends in scientific publication? Which authors have a significant contribution to the field of green marketing and sustainability research? Which countries have contributed most to the research? Which affiliations have accomplished the most extensive research? Which journals are the most cited journals? Which keywords are mostly used in the research? This research aims to address these questions by conducting a comprehensive bibliometric analysis of existing studies, which will help identify future research directions and enhance understanding of green marketing and sustainability.

Methodology

This study analyzed Scopus data through a bibliometric analysis comprising a quantitative dataset, as the Scopus dataset is reliable and contains diverse databases from multiple sources (Dube, 204). Furthermore, the analysis of academic scholar data is fundamentally based on Scopus data, considering the worth of the dataset as a prestigious source for analysis (Pranckute, 2021). The keywords, as the major theme of the study, were Green Marketing OR sustainability marketing. The study covered the period from 2004 to 2024, which represents the latest datasets. Similarly, a final dataset of 370 articles published in English and based on research articles was used for the analysis. The document search was accomplished in 2025, including the full search and collection of data up to 2024. Thus, the accumulation of data was accomplished with final dataset filtering, manuscripts written in other languages, excluding the data of other periods, and covering only the business and management-related information. Studies in the fields of green marketing and sustainability were explored through co-occurrence keyword analysis, and thematically interconnected published literature was reflected through bibliometric analysis Aria and Cuccurullo (2017) with Biblioshiny and VOS Viewer. To analyze the content of the selected published manuscripts, the keywords were analyzed, consisting of the co-occurrence of keywords. The main keywords included in the study are green marketing, sustainable, sustainable development, marketing, commerce, green products, environmental sustainability, environment, corporate social responsibility, and environmental management. Similarly, the bibliometric analysis included annual scientific production, average citation per year, three-field plot, most relevant sources, core sources by Bradford's law, most relevant authors, most global cited documents, most local cited references, most relevant affiliation, sources' local impact, countries' scientific production, trend topics, most frequent words, thematic map, co-occurrence network, bibliographic coupling of authors, and bibliographic coupling of the country.

Results and Discussion

Descriptive Statistics

This section of the results reveals the main information and nature of the data accumulated in the analysis. The descriptive statistics contain the timespan, sources, documents, document contents, keywords, authors, keywords, authors, authors with collaboration, and document types involved in the study.

Table 1: Descriptive statistics

Description	Results
MAIN INFORMATION ABOUT DATA	
Timespan	2004:2024
Sources (Journals, Books, etc.)	189
Documents	370
Annual Growth Rate %	22.3
Document Average Age	6.64
Average citations per doc	71.99
References	2714
DOCUMENT CONTENTS	
Keywords Plus (ID)	627
Author's Keywords (DE)	1525
AUTHORS	
Authors	1949
Authors of single-authored docs	0
AUTHORS COLLABORATION	
Single-authored docs	0
Co-Authors per Doc	8.18
International co-authorships %	24.05
DOCUMENT TYPES	
Article	345
Review	25

Source: Scopus Database

Table 1 presents the descriptive statistics with the main information of the data. The study period covered the years 2004 to 2024, and the sources of documents contained 189 journal articles and books, and 370 total documents. Similarly, the annual growth rate of publications is 22.3 percent, the document average age is 6.64, the average citation per document is 79.99, and the references include 2714. Moreover, the authors in the document include 1949, co-authors per document 8.18, and international co-authorship represents 24.05. Finally, the article document contained 345 manuscripts, and the review article consisted of 25 documents.

Annual Scientific Production

Annual scientific production reflects the publication trend in the fields of green marketing and sustainability marketing. This result represents the time span from 2004 to 2024, showing an increasing trend in the study area.

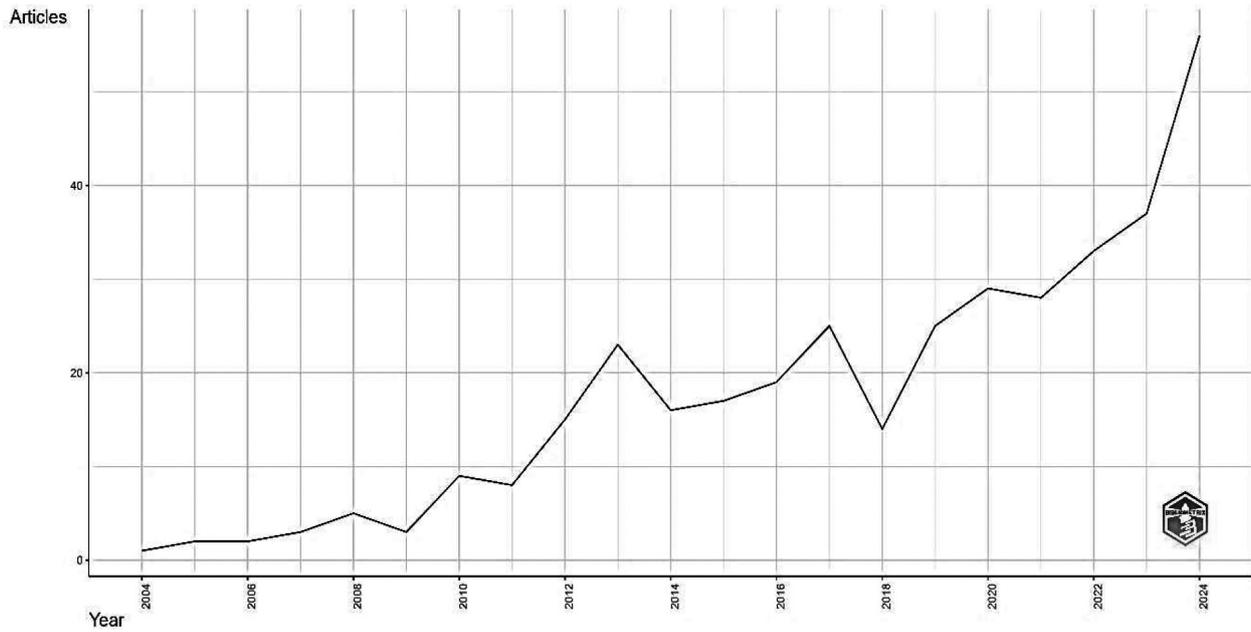


Figure 1: Annual scientific production

Source: Scopus Database

Figure 1 depicts annual scientific production. The publication trend has shown an increasing trend since 2004. The number of publications rapidly increased from 2009 to 2013, with 23 published articles in 2013, and then declined to 16 articles in 2014. Furthermore, the number of publications increased in 2017 and declined in 2018. However, the publication of scientific manuscripts rapidly increased from the same year and the years 2019, 2020, and 2024, indicating 25, 29, 28, 33, 37, and 56 research publications, respectively, with rapid growth.

Average Citations per Year

The average citations per year comprised the year of publication, mean total citations per article, number of articles, mean total citations per year, and citable years. Table 2 shows the average number of citations per year.

Table 2: Average citation per year

Year	Mean TC per Article	N	Mean TC per Year	Citable Years
2004	116.00	1	5.27	22
2005	350.00	2	16.67	21
2006	220.00	2	11.00	20
2007	144.00	3	7.58	19
2008	100.80	5	5.60	18
2009	6.33	3	0.37	17
2010	165.22	9	10.33	16
2011	273.75	8	18.25	15
2012	104.27	15	7.45	14
2013	105.17	23	8.09	13
2014	108.06	16	9.01	12
2015	76.53	17	6.96	11
2016	149.95	19	14.99	10
2017	82.84	25	9.20	9
2018	65.71	14	8.21	8
2019	115.68	25	16.53	7
2020	58.07	29	9.68	6

2021	48.36	28	9.67	5
2022	25.55	33	6.39	4
2023	16.70	37	5.57	3
2024	8.98	56	4.49	2

Source: Scopus Database

Table 2 shows the average citations per year covering the years from 2002 to 2024. The results from 2004 to 2009 are 116, 350, 220, 144, and 3.33, respectively, while the mean total citations per year during the same period are 2.27, 16.67, 11, 7.58, 5.60, and 0.37, respectively. Similarly, the mean citation per article from the year 2010 to 2020 depicted 165.22, 273.75, 104.27, 105.17, 108.06, 76.53, 149.95, 82.84, 65.71, 115.68, 58.07, respectively, and the mean total citation per year during the same period are 10.33, 18.25, 7.45, 8.09, 9.01, 6.96, 14.99, 9.20, 8.21, 16.53, and 9.68 respectively. Finally, the mean total citation per article from 2021 to 2024 is 48.36, 25.55, 16.70, and 8.98, respectively. Next, the mean total citations per year during the same period were 9.68, 9.67, 6.39, 5.57, and 4.49, respectively.

Three-Field Plot

The three-field plot in this study contains information on the sources of scientific production, the authors' countries, and the main keywords adopted in the study, especially in the field of green marketing and sustainability. The following figure shows the three-field plot:

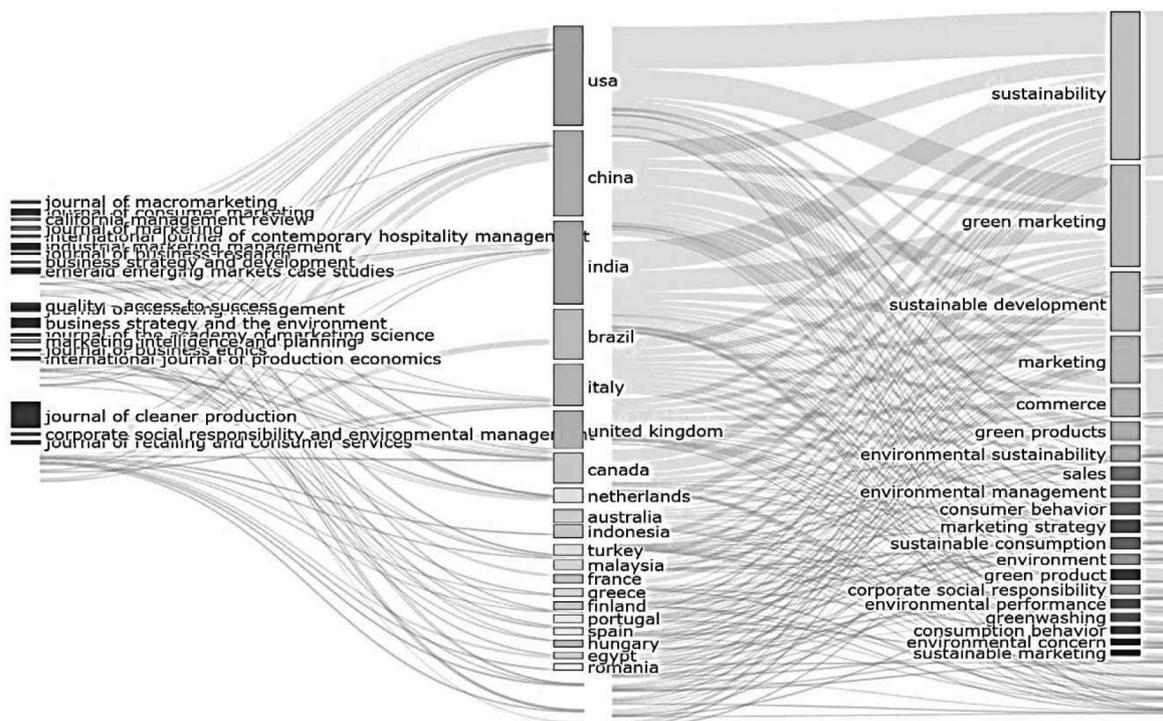


Figure 2: Three-field plot

Source: Scopus Database

Figure 2 shows the three-field plot consisting of three core areas of the study representing sources, authors' countries, and keywords. The main keywords involved in the study are sustainability, which occupies the highest position based on the three-field plot, and green marketing in the second rank. Similarly, the remaining keywords were sustainable development, marketing, commerce, green product, environmental sustainability, sales, environmental management, consumer behavior, marketing strategy, sustainable consumption, environment, corporate social responsibility, greenwashing, consumption behavior, environmental concern, and sustainable marketing. The leading countries in the research are the United States of America (USA) and China, holding the first and second positions, respectively. The remaining countries listed in the three-field plots are India, Brazil, Italy, the United Kingdom, Canada, the Netherlands, Australia, Indonesia, Turkey, Malaysia, France, Greece, Finland, Portugal, Spain, Hungary, Egypt, and Romania. The leading source was the Journal of Cleaner Production, followed by Business Strategy and the Environment.

Most Relevant Source

The most relevant sources represent the number of research documents and published articles. Thus, these results consist of the leading sources of academic works published during the study period in the fields of green marketing and sustainability. Figure 3 represents the most relevant sources.

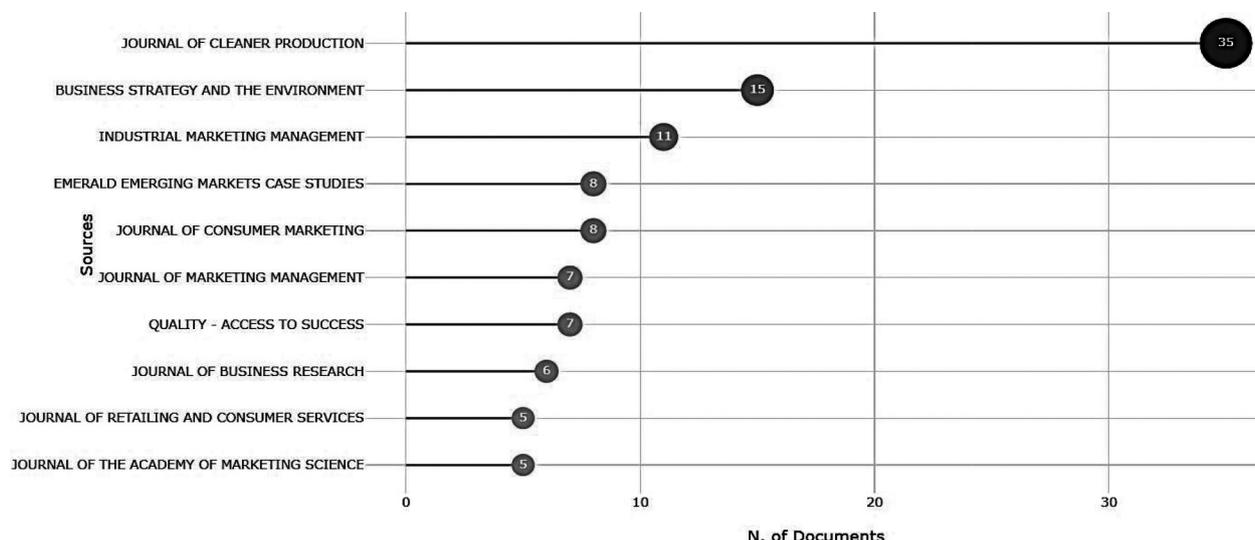


Figure 3. Most relevant source

Source: Scopus Database

Figure 3 shows the most relevant sources in the field of green marketing and sustainability. This result manifests the number of documents in the horizontal form and contains the leading sources in the vertical form. Further, the top ten leading sources are integrated in the graph, with the Journal of Cleaner Production as the top leading source of scientific production with 35 published documents, followed by Business Strategy and the Environment with 15 research documents. Similarly, Industrial Marketing Management ranked third, with 11 published documents. Furthermore, the Emerald Emerging Markets Case Studies contains eight published research manuscripts, the Journal of Consumer Marketing contains eight published documents, and the Journal of Marketing Management and Quality Access to Success source contains seven for each source. The Journal of Business Research has six documents. Finally, the Journal of Retailing and Consumer Services and the Journal of the Academy of Marketing Science contain five published scientific works for each source.

Core Sources by Bradford’s Law

The core sources by Bradford’s Law represent the sources of scientific publications, the number of academic research manuscripts, the rank of the sources in the field of green marketing and sustainability areas, and the zone it contains. Further, it exhibits the position of academic manuscript publications, consistent with its sources. Table 3 below contains the core sources according to Bradford’s Law:

Table 3 Core sources by Bradford’s Law

S.N.	Sources	Number of Articles	Bradford’s Law	
			Rank	Zone
1	Journal of Cleaner Production	35	1	Zone 1
2	Business Strategy and the Environment	15	2	Zone 1
3	Industrial Marketing Management	11	3	Zone 1
4	Emerald Emerging Markets Case Studies	8	4	Zone 1
5	Journal of Consumer Marketing	8	5	Zone 1
6	Journal of Marketing Management	7	6	Zone 1
7	Quality - Access to Success	7	7	Zone 1
8	Journal of Business Research	6	8	Zone 1
9	Journal of Retailing and Consumer Services	5	9	Zone 1
10	Journal of the Academy of Marketing Science	5	10	Zone 1

Source: Scopus Database

Table 3 presents the core sources by Bradford’s Law, consisting of the top ten sources in the fields of green marketing and sustainability. The outcomes based on Bradford’s Law demonstrate that the Journal of Cleaner Production ranked in the first position with 35 scientific publications during the study period from 2004 to 2024, followed by Business Strategy and the Environment with 15 academic research publications. Similarly, Industrial Marketing Management ranked third with 11 documents, and Emerald Emerging Markets Case Studies and Journal of Consumer Marketing ranked in 4th and 5th with eight publications each. Journal of Marketing Management and Quality - Access to Success ranked 6th and 7th with seven published manuscripts each. The Journal of Business Research stood in 8th rank with six published scientific papers. Finally, the Journal of Retailing and Consumer Services and the Journal of the Academy of Marketing Science rank in 9th and 10th positions, respectively, with five publications each.

Most Relevant Authors

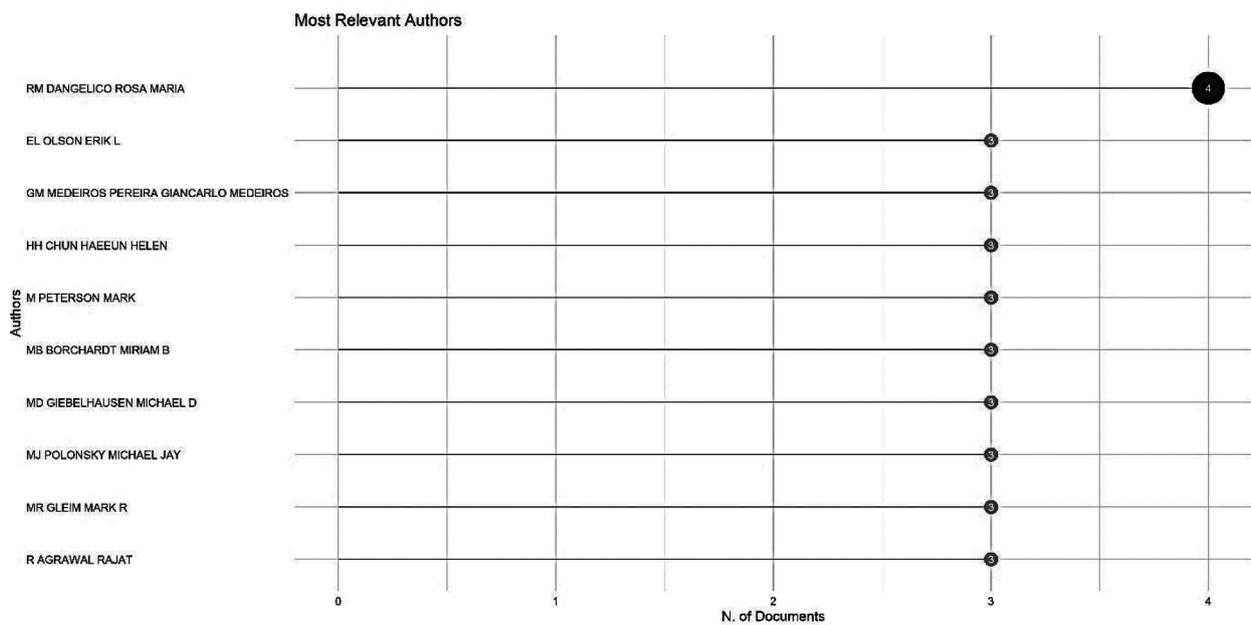


Figure 4. Most relevant source

Source: Scopus Database

Table 4 :Most relevant authors

Author	Articles	Articles Fractionalized
Rosa Maria Dangelico	4	1.50
Erik L. Olson	3	3.00
Giancarlo Medeiros Pereira	3	0.50
Hae Eun Helen Chun	3	1.25
Mark Peterson	3	1.50
Miriam Borchardt	3	0.50
Michael Giebelhausen	3	1.25
Michael Jay Polonsky	3	1.70
Mark R. Gleim	3	1.08
Rajat Agrawal	3	0.73

Figure 4 and Table 4 show the most relevant authors published in the field of green marketing and sustainability. These results contain the top ten contributing authors during the publication period. Dangelico R M published four research articles as a highly contributing author in the field of study. Other most relevant authors are Olson E L., Pereira G M, Helen Chun H E, Peterson M, Borchardt M, Giebelhausen M, Polonsky M J, Gleim M R, and Agrawal R, with three research articles from each author.

Most Global Cited Documents

Most globally cited documents indicate the total citation graph of the research publications in the field of green marketing and sustainability during the time frame from 2004 to 2024. This graphical presentation encompasses the top ten authors, scientific papers, year of publication, and sources of the publication. Figure 4 exhibits some of the most globally cited documents.

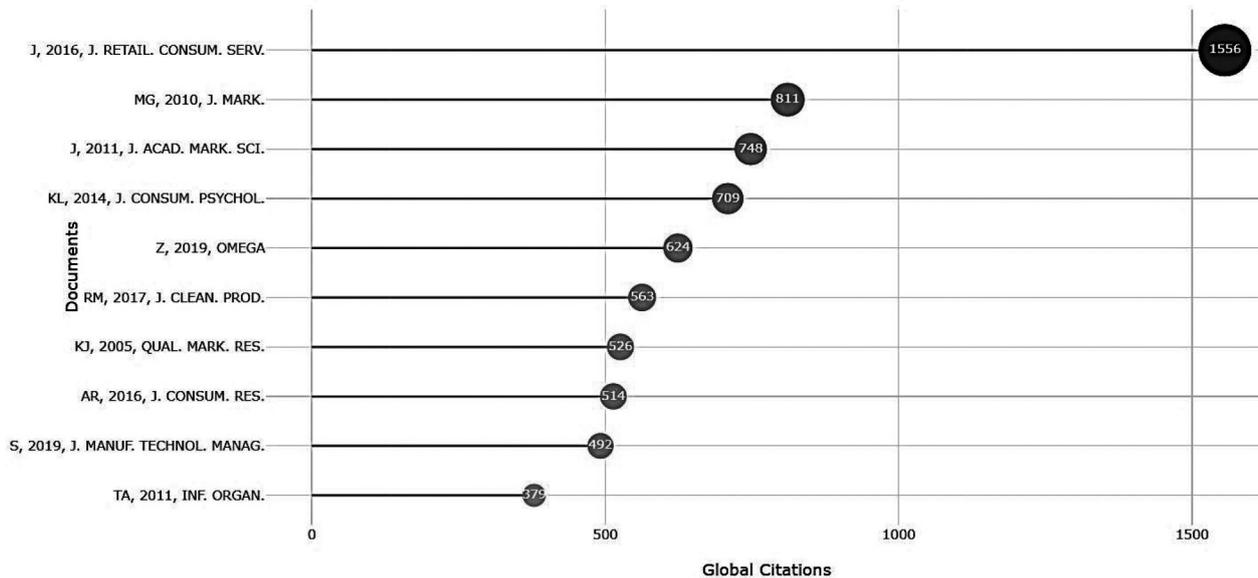


Figure 5: Most global cited documents

Figure 5 reveals the most globally cited documents, the top ten research publications, the authors with their year of publication, and the sources of scientific production. The graph shows the number of global citations on the horizontal axis and the number of documents on the vertical axis, representing academic publications in the field of green marketing and sustainability. The research work by Paul et al. (2016) on predicting green product consumption using the theory of planned behavior and reasoned action, published in the Journal of Retailing and Consumer Services, found the highest citation, 1556, during the period from 2004 to 2024. Similarly, the scientific paper by Luchs et al. (2010) on the sustainability liability: Potential negative effects of ethicality on product preference, published in the Journal of Marketing, was found to be the second-highest cited document with 811 global citations. Further, a research publication by Pelozo and Shang (2010) on How can corporate social responsibility activities create value for stakeholders? A systematic review published in the Journal of the Academy of Marketing Science found 748 global citations; Haws et al. (2013), in seeing the world through GREEN-tinted glasses: Green consumption values and responses to environmentally friendly products, published in the Journal of Consumer Psychology found 709 citations; Hong and Guo (2019) on green product supply chain contracts considering environmental responsibilities published in Omega found 624 global citations, and Dangelico and Vocalelli (2017) on Green marketing”: An analysis of definitions, strategy steps, and tools through a systematic review of the literature published in Journal of Cleaner Production found 563 global citations. Moreover, the publication by Peattie and Crane (2005) on green marketing: legend, myth, farce, or prophecy? Qualitative market research published in An International Journal found 526 global citations, including Brough et al. (2016) publication on Is eco-friendly unmanly? The green-feminine stereotype and its effect on sustainable consumption, published in the Journal of Consumer Research, found 514 global citations; Yildiz Cankaya and Sezen (2019), with scientific work on the effects of green supply chain management practices on sustainability performance published in the Journal of Manufacturing Technology Management, found 492 global citations; and Jenkin et al. (2011), on an agenda for ‘green’ information technology and systems research published in Information and Organization, found 379 global citations.

Most Local Cited Reference

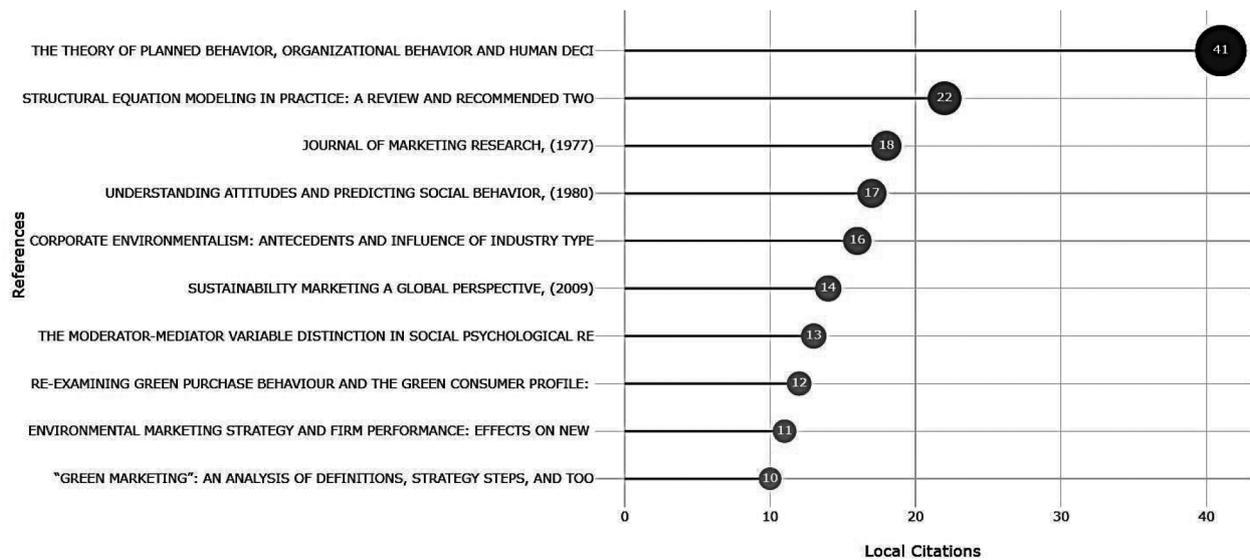


Figure 6: Most local cited reference

Source: Scopus Database

Figure 6 demonstrates the most locally cited reference in the graph, indicating local citations in the horizontal axis and references in the vertical axis. The reference work by Ajzen (1991) on the theory of planned behavior was the most locally cited reference, with 41 local citations. Similarly, reference work by Anderson and Gerbing (1988) on Structural equation modeling in practice: A review and recommended two-step approach published in Psychological Bulletin found 22 local citations, and Carrol and Green (1995) on Psychometric methods in marketing research: Part I, conjoint analysis published in Journal of Marketing Research found 18 local citations. Next, the reference work by Heilbroner et al. (1990) on Understanding attitudes and predicting social behavior published in Prentice Hall found 17 local citations; Banerjee et al. (2003) on Corporate environmentalism: Antecedents and influence of industry type published in Journal of Marketing found 16 local citations; and Belz et al. (2025) on Sustainability marketing: A global perspective published in John Wiley & Sons with 14 local citations. Further, reference work by Baron and Kenny (1986) on the moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations, published in the Journal of Personality and Social Psychology found 13 local citations; Akehurst et al. (2012) on Re-examining green purchase behavior and the green consumer profile: new evidences published in Management Decision found with 12 local citations, Baker and Sinkula (2005) on Environmental Marketing Strategy and Firm Performance: Effects on New Product Performance and Market Share published in Journal of the Academy of Marketing Science found with 11 local citations, and reference work by Dangelico and Vocalelli (2017) on Green Marketing”: An analysis of definitions, strategy steps, and tools through a systematic review of the literature published in Journal of Cleaner Production found 10 local citations.

Most Relevant Affiliation

Most relevant affiliation represents the institutional contributors in the field of green marketing and the sustainability field of study. These results comprise the top highly contributing institutions. Table 4 below shows the most relevant affiliation.

Table 5 : Most relevant affiliation

S.N.	Affiliation	Articles
1	Universidade Do Vale Do Rio Dos Sinos	13
2	Indian Institute of Technology Roorkee	12
3	Amity University	10
4	Amirkabir University of Technology	8
5	Faculty of Economics And Business	8
6	Florida State University	7
7	National Kaohsiung University Of Science And Technology	7
8	Notreported	7
9	Symbiosis Centre for Management and Human Resource Development	7
10	Bucharest University of Economic Studies	6

Source: Scopus Database

Table 5 shows the most relevant affiliations promoting and publishing research work in the green marketing and sustainability theme. The highly contributing affiliation found Universidade Do Vale Do Rio Dos Sinos with 13 publications, followed by Indian Institute of Technology Roorkee with 12 scientific research publications. Similarly, the contribution of Amity University for green marketing and sustainability publication found with 10 articles, Amirkabir University of Technology, and the Faculty of Economics and Business represent eight publications for each affiliation. Similarly, Florida State University, National Kaohsiung University of Science and Technology, Notreported, and Symbiosis Centre for Management and Human Resource Development represent seven research articles for each affiliation. Finally, Bucharest University of Economic Studies contributed with six articles during the study period in the green marketing and sustainability areas.

Sources' Local Impact

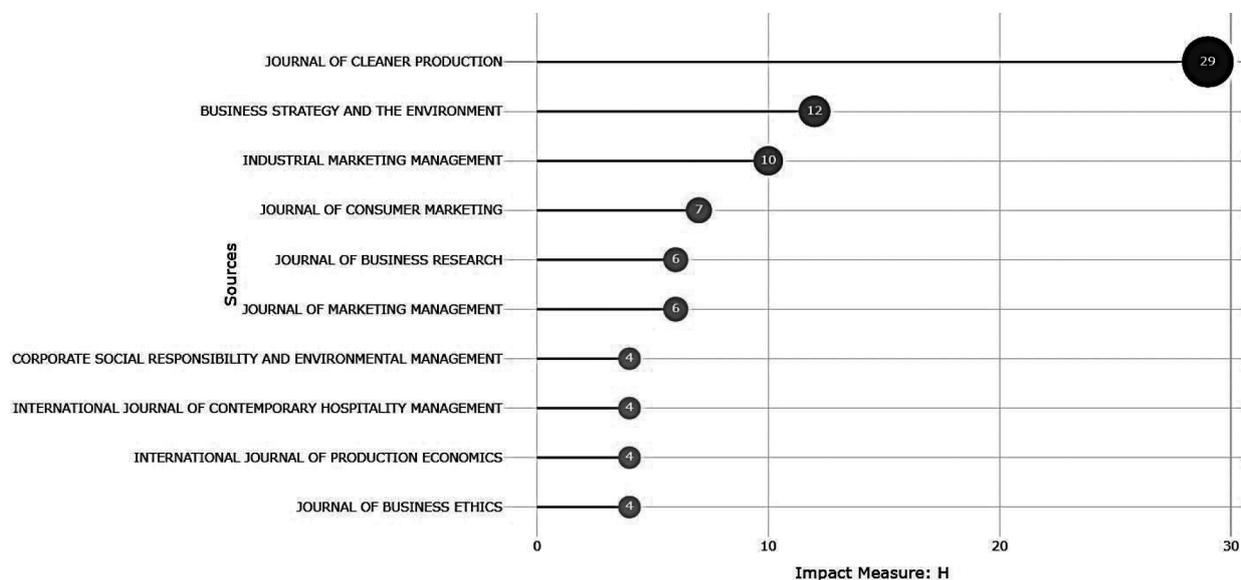


Figure 7: Sources' local impact

Source: Scopus Database

Figure 7 represents the local impact of the sources of documents published in the field of green marketing and sustainability during the study period. The horizontal axis represents impact measured by H-index, and sources are placed on the vertical axis. The graph comprises the high-impact top ten sources. As the impact of sources of documents is measured by H-index Sahabuddin et al., (2023), sources are reflected in hierarchical form based on the H-index score. Journal of Cleaner Production found the highest local impact as indicated by H-index 29, Business Strategy and the Environment with H-index 12, Industrial Marketing Management contains H-index

10, Journal of Consumer Marketing with H-index seven, Journal of Business Research, and Journal of Marketing Management depict H-index 6 for each source. Next, Corporate Social Responsibility and Environmental Management, International Journal of Contemporary Hospitality Management, International Journal of Production Economics, and Journal of Business Ethics have an H-index of 4 for each source.

Table 6: Countries' scientific production

S.N.	Country	Frequency	S.N.	Country	Frequency
1	USA	187	16	Greece	12
2	India	124	17	Egypt	11
3	China	97	18	Finland	11
4	UK	70	19	France	11
5	Italy	44	20	Hungary	10
6	Brazil	39	21	Pakistan	10
7	Indonesia	33	22	South Korea	10
8	Canada	32	23	Iran	9
9	Australia	25	24	Sweden	9
10	Malaysia	24	25	Germany	8
11	Netherlands	21	26	Ghana	7
12	Romania	16	27	Lithuania	7
13	Portugal	13	28	New Zealand	7
14	Spain	13	29	Norway	7
15	Turkey	13	30	Saudi Arabia	7

Source: Scopus Database

Table 6 exhibits the countries' scientific production comprising the thirty top contributing countries in the field of green marketing and sustainability research during the study period from 2004 to 2024. The United States of America is a highly contributing country for the scientific publication, with one hundred eighty-seven publications, India with 124 publications, China with 97, the United Kingdom with 70, Italy with 44, Brazil with 39, Indonesia with 33, Canada with 32, Australia with 25, and Malaysia with 24 remaining within the top ten contributing countries. Remaining contributing countries within the category of top twenty publishers are Netherlands, Romania, Portugal, Spain, Turkey, Greece, Egypt, Finland,

Trend Topics :

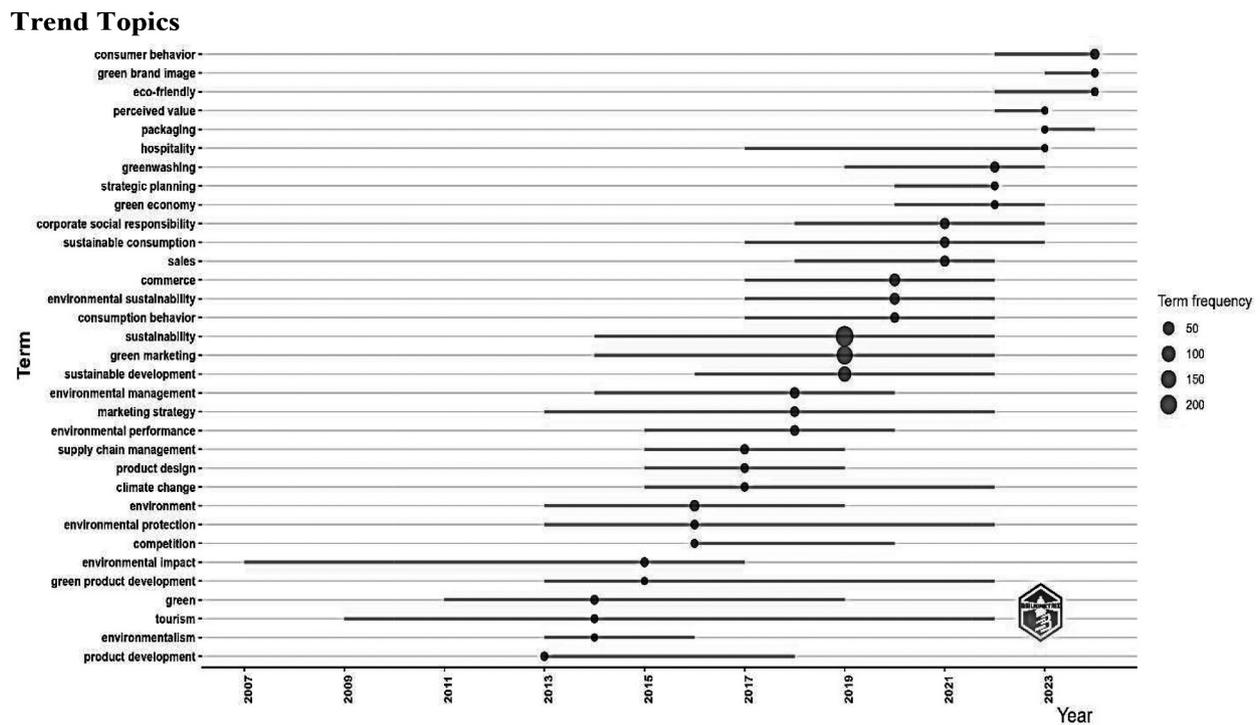


Figure 8. Trend topics

Source: Scopus Database

Figure 8 depicts the trend topics revealing the trending keywords frequently embraced by the research covering the study period until 2024. The graph of trend topics exhibits the year in the horizontal line and the terms of occurrence in the vertical line. The term frequency is stated with a circle of distinct sizes, ranging from a small size with 50 occurrences to 200 occurrences with large size. The term “sustainability” gained popularity in 2019 onward followed by “green marketing” in the same year and “sustainable development” remained in the same direction. Similarly, the terms “product development”, “environmentalism”, “corporate social responsibility”, “sustainable consumption”, and consumption behaviors gained popularity during the study period.

Most Frequent Words

Most frequent words depict the occurrence of keywords adopted by the researchers during the study period. This section comprises ten frequently used keywords having most occurrences in the field of green marketing and sustainability. Figure 9 represents the most frequent words.

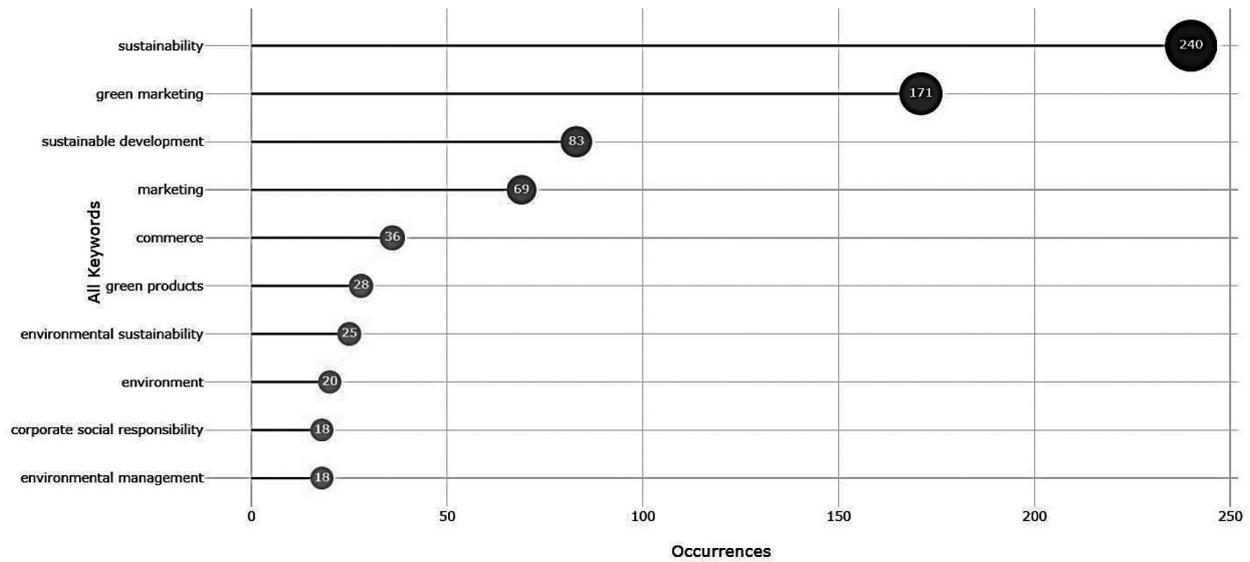


Figure 9. Most frequent words

Source: Scopus Database

Figure 9 demonstrates the most frequent words in the field of green marketing and sustainability. This graph represents the ten most commonly occurring and leading keywords. The horizontal line contains occurrences, and the vertical line of the graph represents all keywords that mostly occurred in the related theme. The keyword sustainability reveals 240 occurrences, followed by sustainable development with 83 occurrences. The marketing keyword manifests 69 occurrences, commerce 36, green product 28, environmental sustainability 25, environment 20, corporate social responsibility 18, and environmental management with 18 occurrences.

Thematic Map

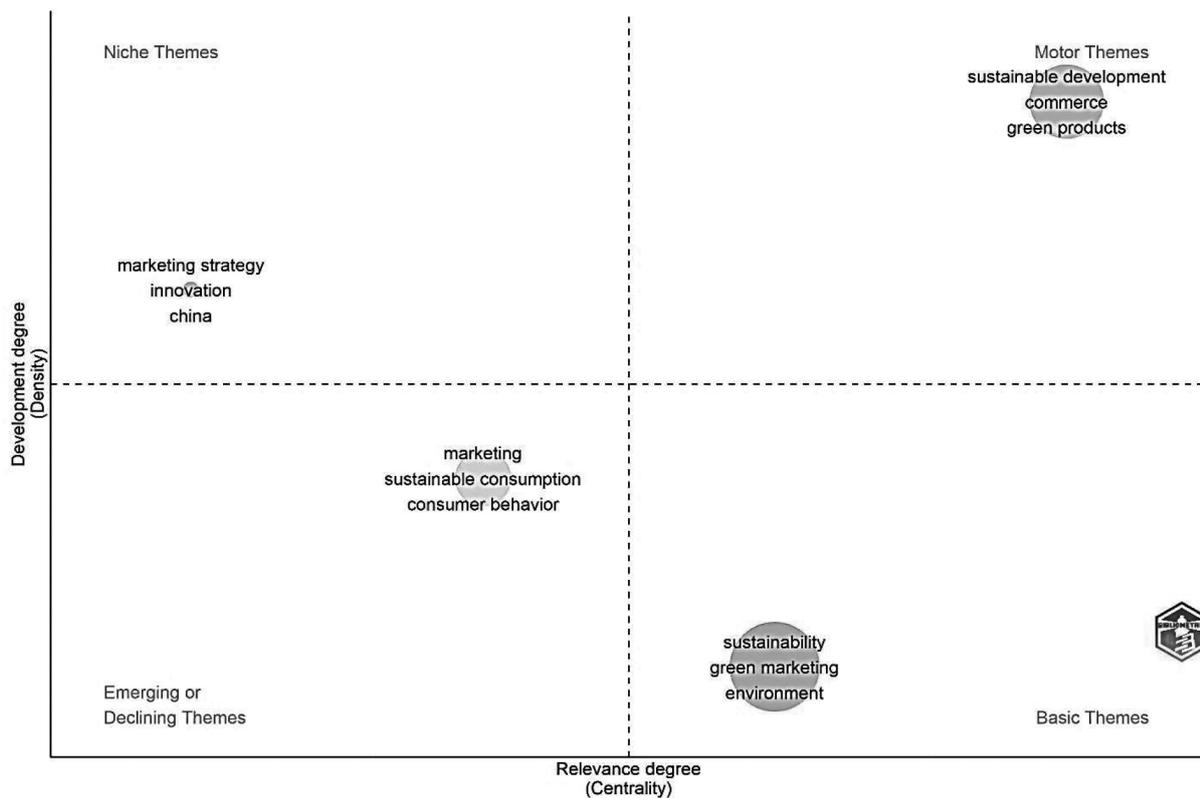


Figure 10. Thematic map

Source: Scopus Database

Figure 10 represents the thematic map representing four different clusters with motor theme, niche, emerging or declining theme, and basic themes. Similarly, the horizontal line represents relevance degree (centrality) and the vertical line depicts the development degree (density). Moreover, the motor theme, as one important quadrant, represents the high centrality and high density, the niche theme represents high development and low relevance degree, the emerging or declining theme manifests low density and low relevance degree, and the basic theme reflects high relevance degree and low density. The motor theme contains sustainable development, commerce, and green marketing, indicating the keywords as highly relevant and high density, gaining high preferences in the study field. Similarly, the sustainability, green marketing, and environment-related keywords remained in the basic themes, depicting high centrality and low density, reflecting the high degree of relevance with green marketing and sustainability. Moreover, marketing strategy and innovation depict high centrality but low relevance. Finally, marketing, sustainable consumption, and consumer behavior are inclined to low relevance and low development in the study.

Co-occurrence Network

The co-occurrence network demonstrates the frequently occurring keywords in the field of green marketing and sustainability. A distinct thematic group represents the trends of scientific production in the field of study. Figure 11 comprises the co-occurrence of the network.

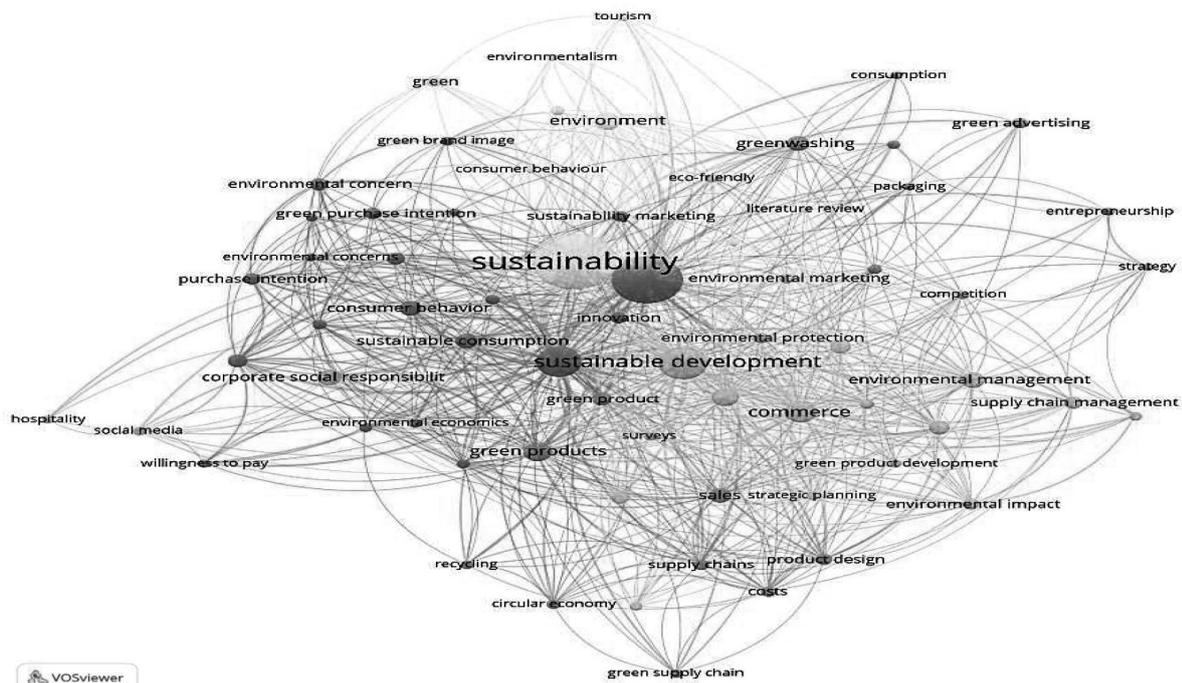


Figure 11. Co-occurrence network

Source: Scopus Database

Figure 11 shows the co-occurrence network of all the keywords linking to the green marketing and sustainability field. These results contain the minimum number of occurrences of the keyword five. Out of the 1528 keywords, 70 met the threshold and were thus selected 70 keywords in the study. The yellow colored circle represents the key theme of sustainability, depicting high co-occurrence in the network that is mostly connected with the environment keyword. Similarly, the second highly occurring keyword in the network is green marketing with purple color that shows the high relevance of the theme and another highly occurring theme of the study that is highly linked with sustainable development, sustainable marketing, greenwashing, Eco-friendly, green product development, environmental impact, supply chain management, and green supply chain. Similarly, the red colored circle represents the key theme of marketing, showing the next highly occurring keywords used in the research. This keyword is linked with sustainable consumption, consumption behavior, environmental economics, purchase intention, green brand image, corporate social responsibility, and sustainable marketing.

Bibliographic coupling of authors

Bibliographic coupling of the authors represents the clusters and interlinked group of authors, revealing the common foundation of a network among the authors that contributed in the field of green marketing and sustainability. Figure 11 shows the bibliographic coupling of authors.

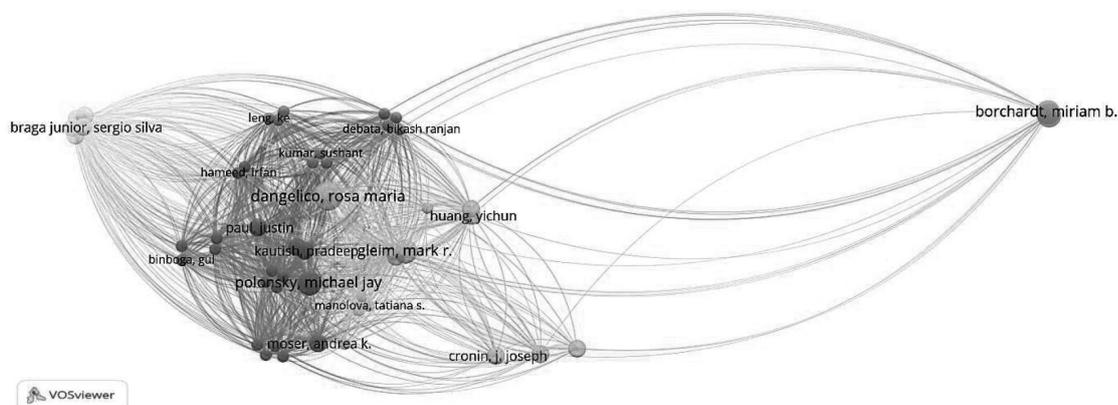


Figure 12. Bibliographic coupling of authors

Source: Scopus Database

Figure 12 shows the bibliographic coupling of authors representing the field of green marketing and sustainability. The maximum number of authors per document is 25, the minimum number of documents per author is one, and the minimum number of citations per author is one. Similarly, out of 928 authors, 896 meet the threshold, and the number of authors selected for the analysis is 50. The authors exhibit in distinct clusters representing the common citation form, demonstrating thematic and conceptual alignment among the works of authors. The authors revealed that the red and green colors remained in the center of the network concerning with Dangelico, Rosa Maria, Gleim, Mark R, Huang, Yichun, Hmeed, Irfan, Paul, Justin, Polonsky, Michael Jay, Moser, Andrea K., Binboga, and Gul. Similarly, the strong coupling shows the higher strength of the common theoretical foundation and shows the frequent referencing occurrence of the study framework among the authors. Other authors interlinking to each other are represented in yellow, with Braga Junior and Sergio Silva. The purple color cluster represents of the group of authors Debata, Bikash Ranjan, Ting, and Hiram, and the orange color cluster comprises the group of authors Borchardt, and Miriam B.

Bibliographic Coupling of the Country

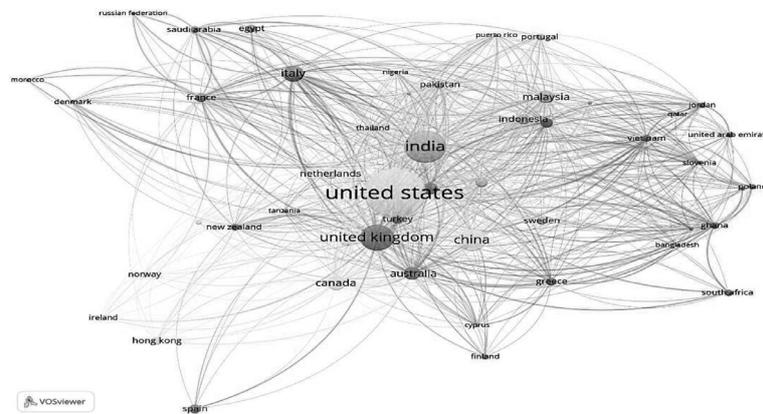


Figure 13. Bibliographic coupling of the country

Source: Scopus Database

Figure 13 represents the bibliographic coupling of the country. This result contains minimum number of documents of a country one, and the minimum number of citations of a country one. Out of 66 countries, 66 meet the thresholds; however, the countries selected for the analysis are 50. Countries included in the bibliographic reflects the contribution to the scientific production in the field of green marketing and sustainability themes. The United State America depicting in the center, is a highly contributing country to the publication, followed by India. Similarly, the United Kingdom and China are depicted as further contributing countries for publication in green marketing and sustainability. Similarly, other remaining contributing countries within the top ten contributing countries contain Italy, Brazil, Indonesia, Canada, Australia, and Malaysia.

Discussion

The green marketing and sustainability issues exist in the global context, being conscious of preventing ecological degradation by embracing the green marketing practice for environmental sustainability. This study focused on the global scenario of green marketing and sustainability through the analysis of the landscape of academic concentration and an investigation conducted with scientific production. The findings of this study depicted a growing trend of interest and publication covering the theme of green marketing and sustainability, comprising 370 Scopus database entries covering the period from 2004 to 2024. Initial stage of scientific production found fluctuation in the production and rapid growth depicted since 2019 in the field of green marketing and sustainability until 2024. The mean total citation per article was found to be highest in 2011, revealing the same trend in mean total citation per year. The findings from the three-field plot depicted sustainability keyword as a highly occurring keyword and highly contributing countries, including the United State America, China, India, and Brazil. Therefore, the most relevant sources represent Journal of Cleaner Production, followed by Business Strategy and the Environment, Industrial Marketing Case Studies, Emerald Emerging Marketing Case Studies, Journal of Consumer Marketing, Journal of Marketing Management, Quality-Access to Success, and Journal of Business Research. Further, the core source by Bradford's Law represents the rank of sources in which Journal of Cleaner Production ranked in the first position with highest publication of scientific papers followed by Business Strategy and the Environment. Further, the most relevant author with the highest contribution in the green mar-

keting and sustainability field was Rosa Maria Dangelico, followed by Erik L. Olson. Results on most globally cited documents found by Paul et al. (2016), followed by Luchs et al. (2010). Similarly, other highly global cited documents found by Peloza and Shang (2010), Haws et al. (2013), Hong and Guo (2019), and Dangelico and Vocalelli (2017). In addition, the most locally cited reference found by Ajzen (1991), Anderson and Gerbing (1988), Carrol and Green (1995), Heilbroner et al. (1990), Banerjee et al. (2003), and Belz et al. (2025). Moreover, the most relevant affiliation found was Universidade Do Vale Do Rio Dos Sinos with the highest contribution in the field of green marketing and sustainability, followed by Indian Institute of Technology Roorkee. Similarly, the sources' local impact found with Journal of Cleaner Production, with a high H-index followed by Business Strategy and the Environment. United State of America found as highly contributing country followed by India. The results on trend topics showed that sustainability and green marketing gained popularity in 2019 onwards. The most frequently occurring keywords found sustainability followed by green marketing. Similarly, the thematic cluster in the study depicted that sustainability and green marketing depicted as highly used keywords in the research and basic theme showed sustainability and green marketing as potential research areas.

Conclusion

The bibliometric analysis provides insight into the scientific investigation trend in green marketing and the sustainability research field from 2004 to 2024. The main purpose of the study is to assess the trend and annual scientific production, average citation, three-field plot, most relevant sources, relevant authors, global cited document, local cited reference, relevant affiliation, local impact on sources, and contributing countries, and to reflect the intellectual framework of investigation in green marketing and sustainability. The findings of this study reveal that scientific production gained a rising trend during the study period as awareness of environmental preservation increased, reform in the regulatory framework compliance policy, and the initiation of the sustainable entrepreneurial trend. Therefore, deriving the conclusion from this study the scientific investigation in the field of green marketing and sustainability gains research attention during the study period and exhibits significant influence of authors contribution, three-field plot, most relevant source, core sources by Bradford's law, most global cited document, references, relevant affiliation, sources' local impact on study domain green marketing and sustainability. The finding from the bibliographic coupling further shows global collaboration, showing an increasing integration network. Therefore, it can be concluded that the discovery of the scientific investigation manifests the growing concern of scholars and reveals increasing interest and ultimately contributes to developing sustainable green marketing behavior among business practitioners. However, this study has limitation as this study fundamental accomplished on quantitative assessment of the data through bibliometric analysis with R Biblioshiny and VOS viewer. Further, this study included only the Scopus database and excluded other important sources of data from Web of Science. The study covered the dataset from 2004 to 2024, which excluded the contribution of other periods in the field of green marketing and sustainability. In addition, only research articles published in the English language are included in the research, excluding other significant publication of other languages covering the business and management areas of the subject area. These data selection criteria excluded other documents and sources, limiting the study to bibliometric analysis. Therefore, the future study can address this gap by conducting the qualitative analysis method with a case study or content analysis to explore the foundation of deeper conceptual development and to reflect the application of green marketing and sustainability concept. The case study analysis could link the root concept of green marketing and its practical application in the marketing activities of an organization. Further, inclusion of important databases from Web of Science may portray the entire scenario and entire ground of literature.

REFERENCES

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-t](https://doi.org/10.1016/0749-5978(91)90020-t)
- Akehurst, G., Afonso, C., & Martins Gonçalves, H. (2012). Re-examining green purchase behavior and the green consumer profile: new evidences. *Management Decision*, 50(5), 972–988. <https://doi.org/10.1108/00251741211227726>
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411–423. <https://doi.org/10.1037//0033-2909.103.3.411>
- Aria, M. & Cuccurullo, C. (2017). Bibliometrix: An R-tool for comprehensive science mapping analysis, *Journal of Informetrics*, 11(4), pp 959-975.
- Baker, W. E., & Sinkula, J. M. (2005). Environmental Marketing Strategy and Firm Performance: Effects on New Product Performance and Market Share. *Journal of the Academy of Marketing Science*, 33(4), 461-475. <https://doi.org/10.1177/0092070305276119>

- Bala, R. (2024). Achieving sustainable development goals by sustainable marketing practices: An integrated approach to environmental, social, and economic sustainability. *Sustainable development goals: The impact of sustainability measures on wellbeing*, 147–165. <https://doi.org/10.1108/s1569-37592024000113a009>
- Banerjee, S. B., Iyer, E. S., & Kashyap, R. K. (2003). Corporate environmentalism: Antecedents and influence of industry type. *Journal of Marketing*, 67(2), 106–122. <https://doi.org/10.1509/jmkg.67.2.106.18604>
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173–1182. <https://doi.org/10.1037//0022-3514.51.6.1173>
- Belz, F. M., Peattie, K., & Onel, N. (2025). *Sustainability marketing: A global perspective*. John Wiley & Sons. <https://tinyurl.com/3pzc5hs8>
- Bhardwaj, S., Thomas, A., Rastogi, S., & Rao, P. (2025). Evolution of environmental policy and sustainable marketing research using bibliometric methods. *Discover Global Society*, 3(1). <https://doi.org/10.1007/s44282-025-00307-0>
- Brough, A. R., Wilkie, J. E. B., Ma, J., Isaac, M. S., & Gal, D. (2016). Is eco-friendly unmanly? The green-feminine stereotype and its effect on sustainable consumption. *Journal of Consumer Research*, 43(4), 567–582. <https://doi.org/10.1093/jcr/ucw044>
- Carroll, J. D., & Green, P. E. (1995). Psychometric methods in marketing research: Part I, conjoint analysis. *Journal of Marketing Research*, 32(4), 385–391. <https://doi.org/10.1177/002224379503200401>
- Chalissery, N., Tabash, M. I., Nishad T, M., & Saleh Al-Faryan, M. A. (2023). A bibliometric analysis of socially responsible investment based on thematic clustering. *Cogent Business & Management*, 10(1). https://login.research4life.org/tacsgr1doi_org/10.1080/23311975.2022.2154057
- Chaudhary, K., & Agarwal, A. (2024). Analysis of barriers for green marketing using interpretive structure modelling. *International Journal of Business and Globalisation*, 37(1), 33–46. <https://doi.org/10.1504/ijbg.2024.10063931>
- Dangelico, R. M., & Vocalelli, D. (2017). “Green marketing”: An analysis of definitions, strategy steps, and tools through a systematic review of the literature. *Journal of Cleaner Production*, 165, 1263–1279. <https://doi.org/10.1016/j.jclepro.2017.07.184>
- Dube, K. (2024). A comprehensive review of climatic threats and adaptation of marine biodiversity. *Journal of Marine Science and Engineering*, 12(2), 344. <https://doi.org/10.3390/jmse12020344>
- Ezeh, P. C., & Dube, K. (2025). Trends and development in green and sustainability marketing: a bibliometrics analysis using VOS viewer. *Discover Sustainability*, 6(1). <https://doi.org/10.1007/s43621-025-01159-z>
- Haws, K. L., Winterich, K. P., & Naylor, R. W. (2013). Seeing the world through GREEN-tinted glasses: Green consumption values and responses to environmentally friendly products. *Journal of Consumer Psychology*, 24(3), 336–354. Portico. <https://doi.org/10.1016/j.jcps.2013.11.002>
- Heilbroner, R. L., Ajzen, I., Fishbein, M., & Thurrow, L. C. (1980). *Understanding attitudes and predicting social behavior*. Prentice Hall. <https://tinyurl.com/36e879a8>
- Hong, Z., & Guo, X. (2019). Green product supply chain contracts considering environmental responsibilities. *Omega*, 83, 155–166. <https://doi.org/10.1016/j.omega.2018.02.010>
- Jenkin, T. A., Webster, J., & McShane, L. (2011). An agenda for ‘Green’ information technology and systems research. *Information and Organization*, 21(1), 17–40. <https://doi.org/10.1016/j.infoandorg.2010.09.003>
- Kumar Kar, S., & Harichandan, S. (2022). Green marketing innovation and sustainable consumption: A bibliometric analysis. *Journal of Cleaner Production*, 361, 132290. <https://doi.org/10.1016/j.jclepro.2022.132290>
- Leyva-Hernández, S. N., Toledo-López, A., & Hernández-Lara, A. B. (2021). Purchase Intention for Organic Food Products in Mexico: The Mediation of Consumer Desire. *Foods*, 10(2), 245. <https://doi.org/10.3390/foods10020245>
- Lima, L. A. de O., Santos, A. F. dos, Nunes, M. M., Silva, I. B. da, Gomes, V. M. M. da S., Busto, M. de O., Oliveira, M. A. M. L. de, & João, B. do N. (2024). Sustainable management practices: Green marketing as a source for organizational competitive advantage. *Revista De Gestão Social E Ambiental*, 18(4). <https://doi.org/10.24857/rgsa.v18n4-087>
- Luchs, M. G., Naylor, R. W., Irwin, J. R., & Raghunathan, R. (2010). The sustainability liability: Potential negative effects of ethicality on product preference. *Journal of Marketing*, 74(5), 18–31. <https://doi.org/10.1509/jmkg.74.5.018>
- Maduwinarti, A., Maruta, I. A., & Mahendra, I. A. (2025). The intersection of green marketing and social media in Southeast Asia: a bibliometric analysis and research agenda. *Cogent Business & Management*, 12(1). https://login.research4life.org/tacsgr1doi_org/10.1080/23311975.2025.2525499
- Mandal, P. C. (2024). Sustainable marketing and its promotion. *International Journal of Social Ecology and*

- Sustainable Development*, 15(1), 1–14. <https://doi.org/10.4018/ijssed.343788>
- Mohanan, A., & Rangaswamy, G. (2025). Mapping the research landscape: a bibliometric study on green entrepreneurship and sustainability. *Discover Sustainability*, 6(1). <https://doi.org/10.1007/s43621-025-02044-5>
- Mohanan, A., & Rangaswamy, G. (2025). Mapping the research landscape: a bibliometric study on green entrepreneurship and sustainability. *Discover Sustainability*, 6(1). <https://doi.org/10.1007/s43621-025-02044-5>
- Nguyen, H. V., Nguyen, N., Nguyen, B. K., Lobo, A., & Vu, P. A. (2019). Organic food purchases in an emerging market: The influence of consumers' personal factors and green marketing practices of food stores. *International Journal of Environmental Research and Public Health*, 16(6), 1037. <https://doi.org/10.3390/ijerph16061037>
- Nozari, H., Rahmaty, M., & Szmelter-Jarosz, A. (2024). A Framework for AIoT-Based Smart Sustainable Marketing System. Artificial intelligence of things for achieving sustainable development goals, 255–271. https://doi.org/10.1007/978-3-031-53433-1_13
- Paul, J., Modi, A., & Patel, J. (2016). Predicting green product consumption using theory of planned behavior and reasoned action. *Journal of Retailing and Consumer Services*, 29, 123–134. <https://doi.org/10.1016/j.jretconser.2015.11.006>
- Peattie, K., & Crane, A. (2005). Green marketing: legend, myth, farce or prophesy? Qualitative market research: *An International Journal*, 8(4), 357–370. <https://doi.org/10.1108/13522750510619733>
- Peloza, J., & Shang, J. (2010). How can corporate social responsibility activities create value for stakeholders? A systematic review. *Journal of the Academy of Marketing Science*, 39(1), 117–135. <https://doi.org/10.1007/s11747-010-0213-6>
- Pranckutė, R. (2021). Web of Science (WoS) and Scopus: The titans of bibliographic information in today's academic world. *Publications*, 9(1), 12. <https://doi.org/10.3390/publications9010012>
- Sahabuddin, M., Sakib, Md. N., Rahman, Md. M., Jibir, A., Fahlevi, M., Aljuaid, M., & Grabowska, S. (2023). The evolution of fintech in scientific research: A bibliometric analysis. *Sustainability*, 15(9), 7176. <https://doi.org/10.3390/su1509717>
- United Nations (UN). (2015). Sustainable development goals [WWW Document]. URL <https://sdgs.un.org/goals>
- Yanah, Y., & Tjahjadi, B. (2025). Mapping green banking research: a bibliometric and thematic review (2000–2025). *Cogent Business & Management*, 12(1). https://login.research4life.org/tacsgr1doi_org/10.1080/23311975.2025.2551810
- Yildiz Çankaya, S., & Sezen, B. (2019). Effects of green supply chain management practices on sustainability performance. *Journal of Manufacturing Technology Management*, 30(1), 98–121. <https://doi.org/10.1108/jmtm-03-2018-0099>