

Mapping the Landscape of Green Marketing: A Systematic and Bibliometric Approach (2004 – 2023)

Nowshath Bee A, Muthumeenakshi M*

Department of Commerce School of Social Sciences and Languages Vellore Institute of Technology, Vellore, India. *Corresponding Author's Email: muthumeenakshi.m@vit.ac.in

Abstract

This research presents a comprehensive bibliometric and systematic analysis of the green marketing literature published between 2004 and 2023, focusing on the evolution of green marketing strategies over time while also examining cultural trends and significant issues within both research and industry literature. By conducting an extensive review of relevant articles, the study underscores the increasing significance of sustainability and environmental responsibility in contemporary marketing strategies. Our objective is to analyze current publishing trends, citation patterns, and leading sources related to green marketing over the past two decades. The findings offer a detailed overview of previous authors' evaluations of publications on green marketing, while also identifying the most frequently referenced articles on the subject. These articles cover a range of critical topics, including enhanced brand reputation, sustainability, sustainable development, green products, long-term profitability, and consumer loyalty. The analysis reveals that green marketing is not merely a passing trend but rather an essential strategy for companies aiming to succeed in a marketplace where consumers are increasingly environmentally conscious. This study contributes to a deeper understanding of green marketing techniques and provides valuable insights for future research, addressing existing gaps in the literature and offering practical guidance for the implementation of sustainable marketing strategies in real-world contexts. By highlighting the importance of integrating sustainability into marketing practices, this research aims to inspire both academics and practitioners to further explore the dynamic field of green marketing.

Keywords: Ecological Marketing, Environmental Marketing, Green Marketing, Sustainability.

Introduction

In recent times, Pollution of the environment and its habitat has been one of the problems that society has been facing. Concern over the environment has increased in response to current environmental issues, particularly in developing countries. Among these issues are the loss of natural resources and global warming, which have an impact on consumer decisions both directly and indirectly. People might have wanted to do everything possible to protect the environment and encourage sustainability by purchasing green (1). To establish a sustainable future, the manner in which society produces and consumes are becoming more and more crucial. Consumers are growing increasingly interested in eco-friendly lives because they expect personal benefits from eco-friendly items in addition to being ecologically conscientious (2). Consumers adopt green marketing criteria to assess offers and place demands for new eco-value market products.

These criteria may include product features, quality, origin, taste, pricing, packaging, labeling, performance, durability, service, or other environmental qualities that they find appealing (3). A rapid rise in the number of studies on green marketing has become essential to the analysis of the study content and its historical development. It requires a clear and current knowledge of the tactics and resources for managers to develop and market green products successfully (4). Certain companies allocate resources towards environmentally conscious and socially conscious marketing communications (5). Green marketing focuses on promoting eco-friendly products; sustainability marketing, on the other hand, adopts a wider view and incorporates the community as a whole, along with its social goals and environmental preservation activities. It involves organizations, consumers, and both national and local governments to actively participate. It also

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requires the provision of vital resources such as infrastructure, investment, and knowledge about humans (6). Cleaner production and a reduction in the environmental impact of industrial operations require the successful creation and manufacture of environmentally sustainable products and services. This strategy relies significantly on marketing since it provides the inputs for establishing product concepts and design. In addition, unless green products and services become increasingly utilized by consumers, producing them would be worthless when it comes to environmental sustainability. Marketing is crucial to this process as well as it assists in creating a green market (7). Marketing is therefore essential to encouraging sustainable consumption as well as greener production.

A significant increase in the usage of technology in business and homes. This has been a long-standing tendency. The COVID-19 pandemic, which began in 2019 and reached its peak in 2020, drastically changed how businesses operated, making them rely more on technology (8) Even though the majority of people are concerned about environmental protection, developing country governments have either no green rules or very weak ones. In developed nations, recycling through waste sorting and collection appears to be a normal activity for millennials; but, in developing nations, it is considered an expense (9). Stakeholder pressure on companies in the energy sector to produce clean energy and sustainable products is increasing (10). Many stakeholders are more conscious of environmental considerations as a result of the development

of environmental issues and awareness among the public (11). For businesses to integrate social and environmental issues into their operations, they must be socially and sustainably responsible in addition to being profitable. The three bottom lines, or people, planet, and profit, are what they must prioritize. These are economic, environmental, and social performance (12, 13).

This paper tries to fill the gap of earlier literature. First, using a systematic review approach and an analysis grounded in both quantitative and qualitative approaches, it presents an outline of the step-by-step research path of green marketing (Table 1). Furthermore, by employing bibliometric analysis, it offers a foundation of knowledge for Green Marketing for the years 2004–2023. This approach increased the study's credibility and objectivity because the cited papers were selected objectively, without any of the input of experts. The study employed a range of bibliometric techniques from reputable journals and pertinent publications to map the literature on green marketing and make insightful findings about the key themes in the investigation. Next, the effectiveness of different models for measuring green marketing is assessed, and the most effective model is recommended. This was accomplished by careful reviews and in-depth study of the work on highly cited research articles. Acquiring a thorough understanding of the most widely used models, the primary research domains, and the best models recommended by prominent researchers are systematically examined. The theoretical framework is represented in Figure 1.

Table 1: Evolution of Green Marketing

S.No.	Year	Evolution	Impact of Green Marketing
1	2004 – 2008	Early growth	Increased consumer awareness Concerns over "greenwashing" are growing. Eco-labels and certifications were introduced. Early adopters and innovators.
2	2009-2013	Mainstreaming	Economic context. The creation of advanced green marketing analytics. Social media's expansion and openness. Sustainability as the main business plan.
3	2014-2018	Integration and Innovation	The development of sustainable goods and services. A stronger emphasis on supply chain sustainability.

			<p>Ideas related to the circular economy gain traction.</p> <p>The emergence of brands with a purpose.</p> <p>COVID-19 impact.</p> <p>Climate change urgency drives aggressive commitments.</p> <p>Technology and data-driven solutions.</p> <p>Growing emphasis on measurable impact and science-based targets.</p> <p>Shift towards regenerative business models.</p> <p>Increased regulation and standardization.</p>
4	2019-2023	Transformation and Accountability	

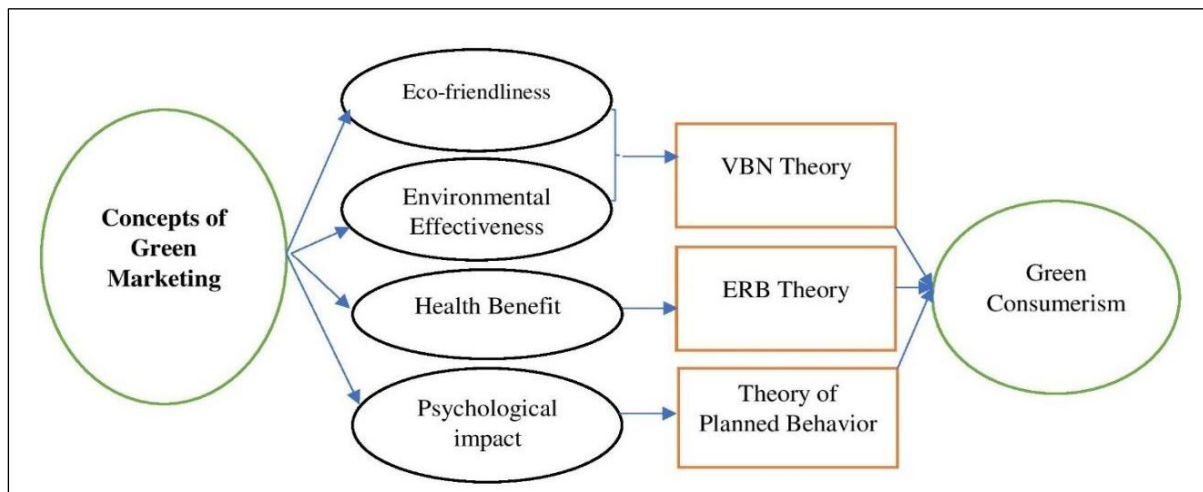


Figure 1: Theoretical Framework

The Concept of green marketing evolved when the universe moved towards global warming. The theory of environmentally responsible behaviour and the Value belief-norm theories support green marketing and insight into ecological, health, and environmental benefits. These provoke green consumerism which is studied in the Theory of Plant Behaviour and has a good impact on green marketing.

Methodology

There are three phases in the sample selection process. The first phase comprises selecting a database for the collection of articles. For this study, one of the most reliable Scopus databases was utilized. The required source material is found in the second phase using appropriate keywords. Reviewing each article extensively for relevancy is the third and last phase. The complete PRISMA flow diagram is shown in Figure 2. The Researcher has removed articles that are not focused on green marketing. For the study, a systematic and bibliometric review was employed. Using R studio and VOSviewer, the current paper aims to comprehend the use of green marketing and assess

its performance from 2004 to 2023 using bibliometric analysis. Highly cited publications have been found by citation analysis. The development and patterns in green marketing research have been examined using publication trends methodologies. The Publication Trends approach has been used to investigate the conceptual structure of keywords associated with green marketing. Countries Collaboration Network techniques to investigate the composition and trends of global cooperation in the field of green marketing studies. Citation analysis for highly cited articles and co-occurrence analysis for keywords.

To get precise and valid data the study considered the Scopus database. The selection of the Scopus database takes the extensive coverage of peer-reviewed research linked to marketing, its timely update cycle, and its capacity for data processing and refining (14). The present study examines the overall trend of green marketing from 2004 – 2005 to 2022 - 2023. To find relevant content, the search term "green marketing"/"environmental marketing"/"ecological marketing" was

incorporated. Bibliometric analysis functions as a useful tool for examining and mapping the body of scientific knowledge as well as the subtle developments within well-established domains. Employing methodical analysis of large-scale datasets, bibliometric research can lay the basis for further expanding the field's limits (15).

A Systematic Literature Review involves identifying, gathering and closely assessing the research to provide a clear solution to a certain

topic (16). According to predefined criteria and study questions, this approach enables researchers to compile pertinent data on a particular subject (17). Systematic reviews are regarded as the most trustworthy type of medical evidence and are highly appreciated in research. They offer substantial advantages to medical practitioners by giving a thorough picture of the body of research that is relevant to a particular subject.

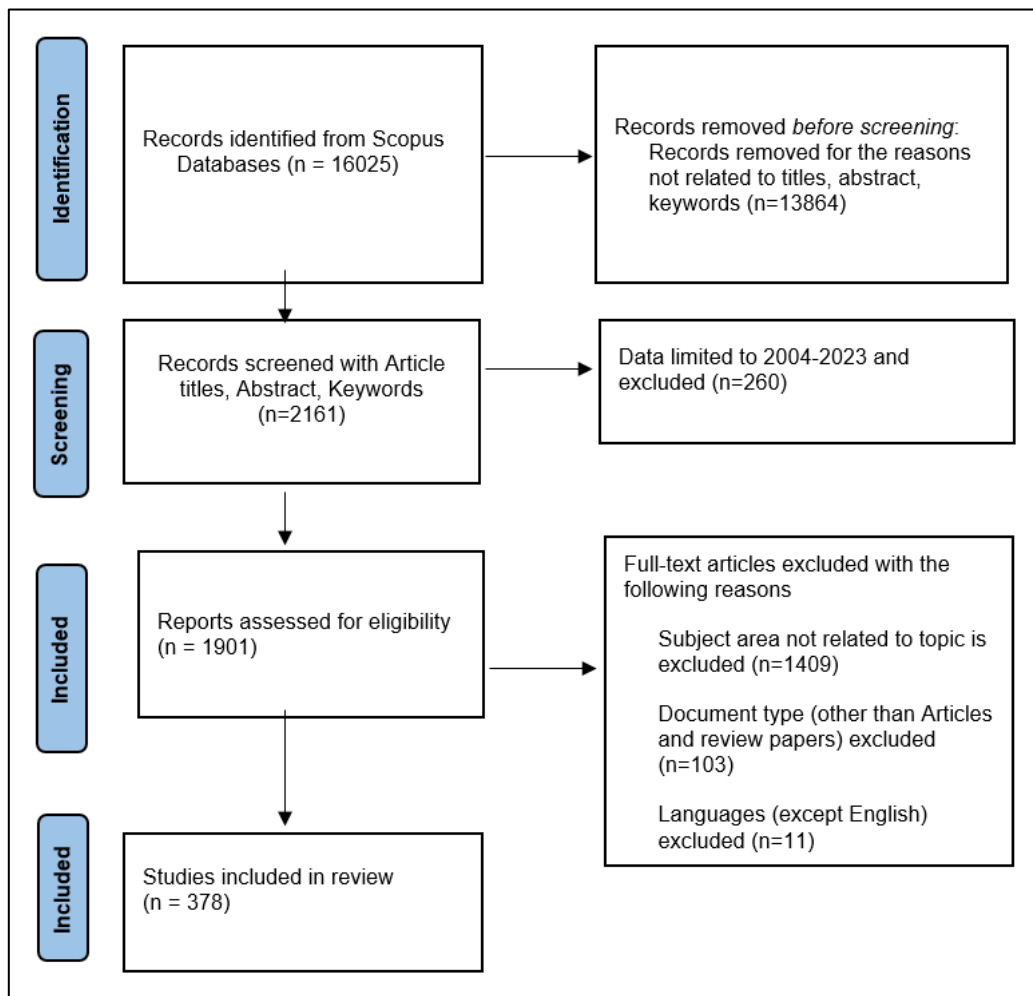


Figure 2: PRISMA Flow Diagram

The initial search employed a string of keywords identified in the Scopus database: “green marketing” or “environmental marketing” or “ecological marketing”. With this string, the search produced 2161 articles as preliminary results, after applying the period (2004 to 2023) the documents were generated to 1901 and implemented subject area filters to encompass papers from “environmental studies” This search yielded 492 articles. Further refining the results, we narrowed down it to 389 articles, exclusively limited to articles and review papers. Further

screening process by reviewing the titles and abstracts of the studies. Articles were limited with language English resulting in 378. Ultimately, the selected 378 articles were taken for our ‘review of literature and Bibliometric Analysis.’ The provided data offers a comprehensive overview of bibliometric information spanning from 2004 to 2023. During these 17 years, 378 documents were sourced from 107 different journals and books, demonstrating an impressive annual growth rate of 18.14%. The average age of these documents is 5.1 years, with each document receiving an

average of 37.24 citations. A total of 23,384 references were utilized across all documents. The corpus includes 1,366 Keywords Plus (ID) and 1,215 Author's Keywords (DE). In terms of authorship, 1,107 authors contributed to these works, with 39 of them producing single-authored documents. The collaboration metrics show that there were 42 single-authored documents, an

average of 3.16 co-authors per document, and 22.75% of the publications involved international co-authorships. The document types are predominantly 344 articles with a smaller number of 34 reviews, indicating a strong focus on original research in this collection. Overall summary of the most cited 30 articles on green marketing (2004 o 2023) are represented in Table 2.

Results

Table 2: A Systematic Review of the Most Cited 30 Articles on Green Marketing (2004 o 2023)

S. No.	Title	Authors	Major Findings	Sources	Cite
1	"The effects of customer benefit and regulation on environmental product innovation - empirical evidence from appliance manufacturers in Germany"	Kammerer D. 2009 (18)	The findings indicated that regulatory demands and customer atdvantages can be significant motivators for environmental product improvements, while they may have distinct effects on different process stages. To encourage environmental innovations in the business, regulations, and strategies must take these variables into account, as the report emphasizes.	Ecological Economics	454
2	"Avoiding green marketing myopia: Ways to improve consumer appeal for environmentally preferable products"	Ottman JA <i>et al.</i> 2006 (19)	The findings recognized a long-standing conflict between conventional marketing objectives and environmental ideals. Despite these historical problems, it ends by arguing that sustainability is set to become a major economic consideration in the twenty-first century, indicating that green marketing will probably grow more significant and effective in the future.	Environment	440
3	"Green Marketing: An analysis of definitions, strategy steps, and tools through a systematic review of the literature"	Dangelico <i>et al.</i> 2017 (20)	They demonstrated the complexity of green marketing and its increasing significance when considering customer behaviour and environmental sustainability. The study highlights the necessity of a strategic approach to green marketing that takes changing customer preferences and market dynamics into account and incorporates all facets of the marketing mix.	Journal of Cleaner Production,	394
4	"Beyond ecolabels: what green marketing can learn from conventional marketing"	Rex and Baumann 2007 (7)	In an attempt promote sustainable production and consumption patterns, the essay makes the case for a more thorough strategy to green marketing that goes beyond ecolabels, targets a wider consumer base, and combines a variety of marketing techniques and research. With emphasis on consumer-	Journal of Cleaner Production	374

			business communication in the green market, more research is required. It is insufficient to focus only on enhancing current ecolabels to bring about significant improvements to production and consumption systems.		
5	“Concepts and forms of greenwashing: a systematic review”	de Freitas Netto <i>et al.</i> 2020 (5)	This study investigated the issues of “greenwashing” by conducting a thorough literature review to identify key ideas and trends related to it during the last ten years. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) were the basis for the systematic review of the literature that this study adhered to. Four main categories of greenwashing were identified: product-level execution, product-level claim, from-level execution, and firm-level execution. The literature has documented a structure based on this kind.	Environmental Sciences Europe	329
6	“Characterization of households and its implications for the vegetation of urban ecosystems”	Grove <i>et al.</i> 2006 (21)	The findings shed doubt on a few widely held beliefs regarding the variables affecting the amount of vegetation in metropolitan areas and indicate that lifestyle choices, especially in public areas, may matter more than previously believed. Additionally, the findings highlight the necessity of more sophisticated methods for researching and overseeing urban ecosystems.	Ecosystems	329
7	“Green marketing consumer-level theory review: A compendium of applied theories and further research directions”	Groening <i>et al.</i> 2018 (22)	These results showed the intricacy of environmentally conscious customer behavior and the difficulties encountered in green marketing, while also offering a methodical framework for comprehending and tackling these difficulties via a range of theoretical perspectives.	Journal of Cleaner Production	317
8	“A fresh look at understanding Green consumer behavior among young urban Indian consumers through the lens of Theory of Planned Behavior”	Taufique and Vaithianathan 2018 (23)	These findings shed light on the elements influencing the environmentally conscious behavior of young Indian consumers in metropolitan locations and point out areas that, given shifting consumer trends in emerging markets, may require reevaluating long-held beliefs about collective societies.	Journal of Cleaner Production	282

9	“The influence of greenwashing perception on green purchasing intentions: The mediating role of green word-of-mouth and moderating role of green concern”	Zhang <i>et al.</i> 2018 (24)	The results highlighted the significance of genuine green marketing strategies and the possible adverse effects of perceived greenwashing on customer conduct and intentions.	Journal of Cleaner Production	264
10	“A taxonomy of green supply chain management capability among electronics-related manufacturing firms in Taiwan”	Shang <i>et al.</i> 2010 (25)	These results emphasized the importance of building strong green marketing competencies for Taiwanese electronics firms within the larger framework of green supply chain management. The study indicated that concentrating on green marketing might result in enhanced company performance and a competitive edge in the industry.	Journal of Environmental Management	261
11	“The moderating influence of environmental consciousness and recycling intentions on green purchase behavior”	Kautish <i>et al.</i> 2019 (26)	These results implied that the degree of environmental consciousness and the intentions of customers to recycle are significant factors in determining their green purchasing behavior, especially their willingness to be environmentally conscious and their perception of their efficacy. Companies and marketers wishing to promote eco-friendly products in developing nations like India may find this information useful.	Journal of Cleaner Production	259
12	“Green consumer behaviour: An experimental analysis of willingness to pay for remanufactured products”	Michaud and Llerena 2011 (27)	These results indicated that although consumers might not be prepared to pay extra for remanufactured goods, environmental knowledge might affect their decision to buy by making them less inclined to pay for conventional products that are more environmentally harmful.	Business Strategy and the Environment	252
13	“Linking green skepticism to green purchase behavior”	Goh and Balaji 2016 (28)	In an emerging economy, the impact of green skepticism on consumers' green purchasing decisions was studied. Skeptical customers are less knowledgeable and concerned about the environment, which in turn makes them less likely to purchase green items. To enhance green performance communication and lessen green skepticism, regulatory legislation is required	Journal of Cleaner Production	251

14	“A new model for testing green consumer behaviour”	Paço <i>et al.</i> 2019 (29)	The results of this study will also be helpful to professionals who work with the production of green products, especially marketers. some customers will displayed the characteristics and viewpoints taken into account in this study (prosocial values, for instance); marketing campaigns should target the market by taking into account all the factors influencing purchasing behavior and by creating communications that are most likely to be appealing.	Journal of Cleaner Production	215
15	“A framework identifying the gaps between customers' expectations and their perceptions in green products”	Tseng and Hung 2013 (30)	Highlights An eco-friendly product tool is created. Basic environmental characteristics and eco-certification form its foundation. It is employed to quantify the discrepancies between the expectations and perceptions of consumers. The outcome demonstrates the gaps in the available green information offerings.	Journal of Cleaner Production	198
16	“Why eco-labels can be effective marketing tools: Evidence from a study on italian consumers”	Testa <i>et al.</i> 2015 (31)	These results implied that, at least in the Italian market, eco-labels are a useful tool for encouraging customers to make more ecologically friendly purchase decisions. It is especially significant because eco-labels boost perceived behavioral control, suggesting that consumers feel more empowered to choose environmentally friendly products when they have access to this information.	Business Strategy and the Environment,	193
17	“Investigating factors influencing consumer decision-making while choosing green products”	Maniatis 2016 (32)	This study presented a framework for comprehending the intricate relationships between consumer awareness, knowledge, dedication, and many facets of green consciousness. It also offers insightful information about the factors influencing customers' decisions to purchase green products.	Journal of Cleaner Production	192
18	“Impact of consumer environmental responsibility on green consumption behavior in China: The role of environmental concern and price sensitivity”	Yue <i>et al.</i> 2020 (33)	The findings have managerial and theoretical ramifications for encouraging sustainable consumer behavior and offer insights into the variables influencing green consumption behavior, particularly in the Chinese environment.	Sustainability (Switzerland)	188
19	“Organic food purchases in an emerging market:	Nguyen <i>et al.</i> 2019 (34)	These results demonstrated the intricate interactions that exist between individual characteristics and	International Journal of Environmental	172

	The influence of consumers' personal factors and green marketing practices of food stores"		real purchasing patterns in the organic meat industry. They contend that although a variety of worries and information may lead to customers' favourable opinions toward organic meat, this doesn't necessarily translate into actual sales. While expensive pricing may deter consumers from making purchases, outside variables like green marketing might stimulate them.	Research and Public Health	
20	"The more I care, the less I will listen to you: How information, environmental concern and ethical production influence consumers' attitudes and the purchasing of sustainable products"	Cerri <i>et al.</i> 2018 (35)	These results highlighted that information—especially ecolabels—interplays intricately with consumers' attitudes toward green products, preexisting environmental knowledge and concern, and information. Enhancing green marketing techniques may be affected by the study's emphasis on the significance of comprehending how consumers obtain and incorporate information when making decisions about sustainable items.	Journal of Cleaner Production	167
21	"Why determinants of green purchase cannot be treated equally? The case of green cosmetics: Literature review"	Liobikiene and Bernatoniene 2017 (36)	These findings revealed that the product category, it's crucial to take purchasing trends for green items into account. Internal, societal, and external elements must all be included in the analysis. Examining purchases of eco-friendly cosmetics is crucial for this particular product category. A model for the buying of green personal care items has been presented.	Journal of Cleaner Production	155
22	"U.S. sustainable food market generation Z consumer segments"	Su <i>et al.</i> 2019 (37)	These results offer insightful information for academics studying marketing segmentation as well as business executives trying to draw in young, environmentally conscious customers in the sustainable food sector.	Sustainability (Switzerland)	150
23	"Household willingness to pay for green electricity in Slovenia"	Zorić, and Hrovatin 2012 (38)	These results shed light on Slovenian consumers' attitudes toward renewable energy and assist policymakers and marketers with ideas for promoting green electricity initiatives.	Energy Policy	150
24	"Green initiatives: A step towards sustainable development and firm's performance"	Kushwaha and Sharma 2016 (39)	Data and examples from the comprehensive literature review stated would probably corroborate these conclusions. The report can also offer suggestions for automakers on how to	Journal of Cleaner Production	149

	in the automobile industry”			successfully integrate green projects without sacrificing their competitiveness.		
25	“Investigating the Antecedents of Green Brand Equity: A Sustainable Development Perspective”	Kang and Hur 2012 (40)		The aforementioned results indicate a series of connections among the innovative concepts put out in the research, underscoring the significance of green satisfaction, trust, and affect in cultivating brand equity and loyalty for eco-friendly electronics items in South Korea.	Corporate Social Responsibility and Environmental Management	143
26	“Characteristics of research on green marketing”	Chamorro <i>et al.</i> 2009 (4)		The study concluded the important facets of the analysis of articles published between 1993 and 2003 on green marketing. The study appears to offer a thorough summary of green marketing research conducted over the designated time frame, which may help recognize patterns and suggest future lines of inquiry for this area of study.	Business Strategy and the Environment,	172
27	“Environmental awareness, firm sustainability exposure and green consumption behaviors”	Rustam <i>et al.</i> 2020 (41)		The research endeavors to examine the relationship between green consumerism and corporate environmental sustainability reporting. The Global Reporting Initiative database and corporate annual reports provided the primary and secondary data for the study, which were gathered through surveys. Behavioral and non-behavioral aspects that influence eco-friendly consumption are identified, which expands on the idea of planned behavior, the study adds to the body of knowledge on sustainability.	Journal of Cleaner Production	140
28	“Assessing the Effects of Perceived Value and Satisfaction on Customer Loyalty: A 'Green' Perspective”	Hur <i>et al.</i> 2013 (42)		The findings of the study implied that in order to boost consumer happiness and foster stronger loyalty and less price sensitivity, marketers and policymakers should concentrate on enhancing consumers' perceived social, emotional, and functional qualities connected with green products. The adoption of environmentally friendly products and technologies may be accelerated by this strategy.	Corporate Social Responsibility and Environmental Management	138
29	“Greenwash and green purchase intention: The mediating role of green skepticism”	Nguyen <i>et al.</i> 2019 (34)		The findings, especially in light of the Vietnamese market for green veggies, add to the body of knowledge already available on greenwashing, green skepticism, and green purchase intentions. The findings imply that rather than engaging in greenwashing tactics, businesses looking to promote environmentally friendly items should concentrate on raising customer awareness of these products and decreasing consumer mistrust.	Sustainability (Switzerland)	137

30	<p>“Why not green marketing? Determinates of consumers’ intention to green purchase decision in a new developing nation”</p>	<p>Nekmahmud and Fekete-Farkas 2020 (43)</p>	<p>The findings served regulators, businesses, and marketers in Bangladesh with useful information for creating eco-labels, eco-branding, and other successful green marketing campaign designs. The findings emphasize that when addressing young, educated consumers in Bangladesh, it is critical to concentrate on environmental concerns, perceived benefits, pricing knowledge, and future estimates of green marketing.</p>	<p>Sustainability (Switzerland)</p>	<p>123</p>
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Bibliometric Analysis

Annual Scientific Production: The annual scientific publication of research articles in the marketing sector that concentrate on green marketing provides a thorough analysis of the evolution, growth, and current patterns in the studies. The number of papers from 2004 to 2023 is presented in Figure 3. Generally speaking, the movement towards green marketing has grown over time. Nothing was published in the field of green marketing in 2004 or 2005. Just 42

publications were published over seven years, from 2006 to 2012. Still, the pattern of publications wasn't all that noteworthy before 2012. Following that, there were twice as many articles about green marketing. The trend of publications has had a significant increase since 2016. According to this situation, researchers have been more interested in green marketing recently, particularly after 2015. In contrast, there will be a slight decrease in publishing patterns in 2023, indicating the need for more research on green marketing.

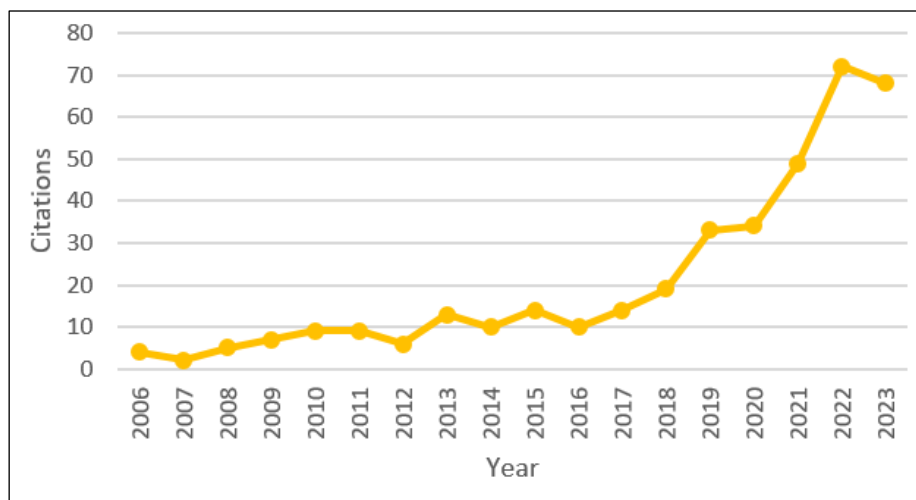


Figure 3: Annual Scientific Production (2004–2023)

Leading Countries with Total Publications: From 2004 to 2023 with 271 publications, China conducted the majority of the studies on green marketing (Figure 4). Brazil was the second-highest contributor with 84 papers, followed by the United States of America with 82 scientific publications and India with 68.

Influential Authors – Top Authors: This might indicate who in the field of marketing has contributed most significantly to the research on green marketing (Table 3). With five publications

overall, IRALDO F and TESTA F. took first place, followed by LIU H, SUN Y, WANG L, and ZHENG Q with four research articles. Followed by eleven authors in order, each of them published three articles. Other researchers published two articles each.

Leading Countries with Article Citation: Between 2004 and 2023, China contributed 2977 articles in the field of green marketing research. With 1925 papers, the USA is the second largest contributor, followed by Brazil (831 articles), Italy

(749 articles), Spain (708 articles), and India (470 articles). Figure 5 displays the leading countries that have contributed to green marketing.

Leading Journals: Table 4 reveals the top research journals with the highest influence from sources based on citations, articles published, h-index, g-index, and m-index.

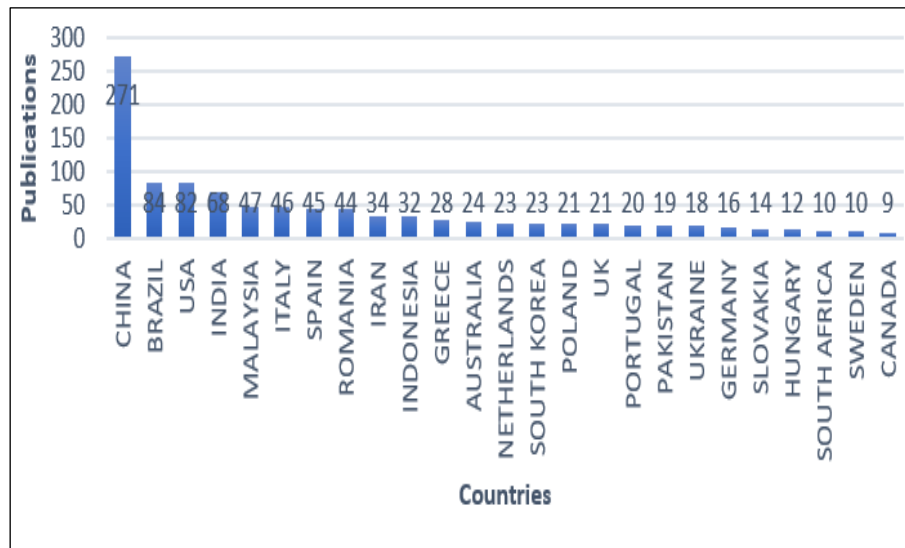


Figure 4: Leading Countries with Total Publications (2004–2023)

Table 3: Influential Authors

S.No	Authors	Articles
1	IRALDO F	5
2	TESTA F	5
3	LIU H	4
4	SUN Y	4
5	WANG L	4
6	ZHENG Q	4
7	ALVES H	3
8	BERGESON LL	3
9	DO PAÇO A	3
10	JR	3
11	NEKMAHMUD M	3
12	SHIEL C	3
13	WANG Y	3
14	XU A	3
15	XU J	3
16	ZHANG X	3
17	ZHANG Z	3
18	BORCHARDT M	2
19	CHAMORRO A	2
20	CHANG T-W	2
21	CHEN Y	2
22	CHEN Y-S	2
23	DASH G	2
24	FEKETE-FARKAS M	2
25	FILHO WL	2

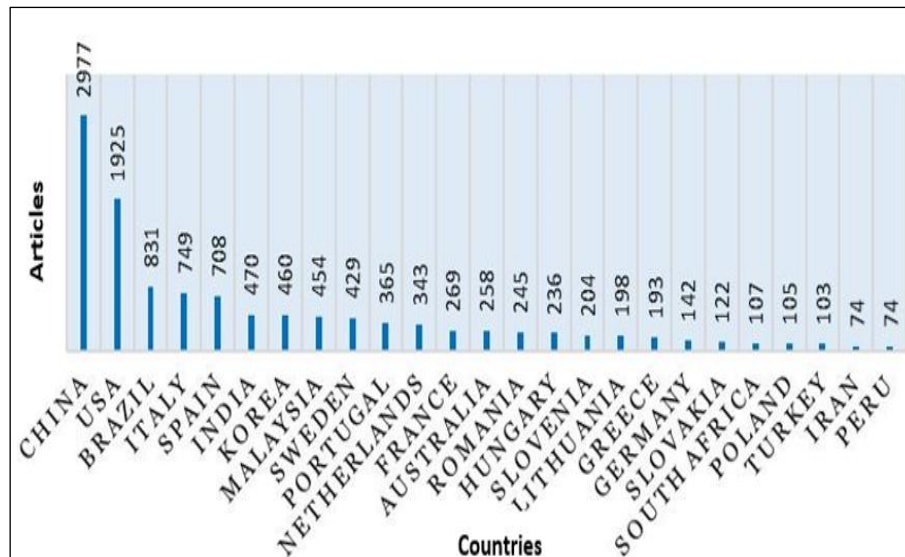


Figure 5: Leading Countries with Total Citations

Table 4: Leading Journals with the Source Impact

Element	h_index	g_index	m_index	TC	NP	PY_start
Journal Of Cleaner Production	32	57	1.684	4824	57	2006
Sustainability (Switzerland)	30	49	3	2835	106	2015
Business Strategy and The Environment	16	19	0.941	1463	19	2008
International Journal Of Environmental Research and Public Health	8	8	1.333	407	8	2019
Environment, Development and Sustainability	6	9	1.5	121	9	2021
Environmental Science and Pollution Research	6	11	0.75	196	11	2017
Management Of Environmental Quality: An International Journal	6	7	0.375	210	7	2009
Corporate Social Responsibility and Environmental Management	4	4	0.211	440	4	2006
Energy Policy	4	4	0.308	254	4	2012
Environmental Engineering and Management Journal	3	5	0.214	97	5	2011

Table 5: Bradford Law

Column1	Rank	Freq	cumFreq	Zone
Sustainability (Switzerland)	1	106	106	Zone 1
Journal of Cleaner Production	2	57	163	Zone 1
Business Strategy and the Environment	3	19	182	Zone 2
Journal of Environmental Protection and Ecology	4	14	196	Zone 2
Environmental Science and Pollution Research	5	11	207	Zone 2
Environment, Development and Sustainability	6	9	216	Zone 2
International Journal of Environmental Research And Public Health	7	8	224	Zone 2
Management of Environmental Quality: An International Journal	8	7	231	Zone 2
Environmental Engineering and Management Journal	9	5	236	Zone 2
Corporate Social Responsibility and Environmental Management	10	4	240	Zone 2
Ekoloji	11	4	244	Zone 2

Energy Policy	12	4	248	Zone 2
Journal of Environmental Management and Tourism	13	4	252	Zone 2
Environmental Communication	14	3	255	Zone 2
Environmental Quality Management	15	3	258	Zone 3
Frontiers in Environmental Science	16	3	261	Zone 3
International Journal of Sustainable Development and Planning	17	3	264	Zone 3
Journal of Environmental Planning and Management	18	3	267	Zone 3
Problemy Ekorozwoju	19	3	270	Zone 3
Revista De Gestao Social E Ambiental	20	3	273	Zone 3
Sustainable Production and Consumption	21	3	276	Zone 3
Advances in Environmental Biology	22	2	278	Zone 3
Ecology, Environment and Conservation	23	2	280	Zone 3
Em: Air and Waste Management Association's Magazine for Environmental Managers	24	2	282	Zone 3
Environmental and Resource Economics	25	2	284	Zone 3
Indian Journal of Ecology	26	2	286	Zone 3
International Journal of Environment and Sustainable Development	27	2	288	Zone 3
International Journal of Sustainable Development and World Ecology	28	2	290	Zone 3
International Journal of Sustainable Society	29	2	292	Zone 3
International Journal of Tourism Cities	30	2	294	Zone 3
Journal of Environmental Management	31	2	296	Zone 3
Journal of Sustainability Science and Management	32	2	298	Zone 3
Polish Journal of Environmental Studies	33	2	300	Zone 3
Resources Policy	34	2	302	Zone 3
Revista Em Agronegocio E Meio Ambiente	35	2	304	Zone 3
Rivista Di Studi Sulla Sostenibilita	36	2	306	Zone 3
Transportation Research Part D: Transport and Environment	37	2	308	Zone 3
Acta Innovations	38	1	309	Zone 3
Advanced Science Letters	39	1	310	Zone 3
Advances in Sustainability and Environmental Justice	40	1	311	Zone 3
Agriculture and Forestry	41	1	312	Zone 3
Ambiente E Sociedade	42	1	313	Zone 3
Anthropogenic Pollution	43	1	314	Zone 3
Asia-Pacific Journal Of Innovation in Hospitality and Tourism	44	1	315	Zone 3
Biocycle	45	1	316	Zone 3
Business Ethics, Environment and Responsibility	46	1	317	Zone 3
Cleaner and Responsible Consumption	47	1	318	Zone 3
Cleaner Logistics and Supply Chain	48	1	319	Zone 3
Climatic Change	49	1	320	Zone 3
Compost Science and Utilization	50	1	321	Zone 3

Bradford Law: Following Bradford Law's classification approach, which divides research publications into three zones, the prestigious research journals are listed in Table 5. Zone 1 includes journals that publish articles about green marketing. A "nuclear zone" is another name for this region due of its significant scientific

achievements. Zone 1 contains two research journals, Zone 2 contains twelve journals, and Zone 3 contains ninety-three journals. The majority of studies focus on consumer intention, sustainable development, and green marketing.

Three Field Plots: To enhance the analysis, we look at the main areas of research, countries, and

major publications. Based on a Sankey diagram, a three-field map displays relationships between countries, authors' keywords, and journals (as shown in Figure 6). The height of the rectangle nodes changes in direct proportion to their frequency of appearance. The triple analysis of the effects of green marketing is depicted in Figure 6, where countries are on the right, research journal

names are on the left, and keywords are in the middle. The graph indicates that green marketing, sustainability, and sustainability development are the main study fields, with China, Brazil, and India contributing the majority of the research in these areas. It is inferred that these countries are moving towards sustainable development which in turn safeguard the entire universe.

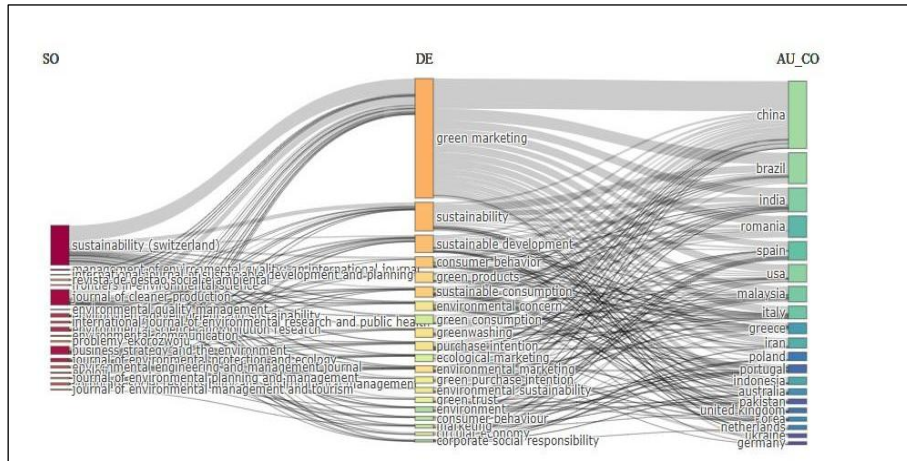


Figure 6: Three Fields Plots (SO- Source, DE- Keywords, AU_CO- Author Country)

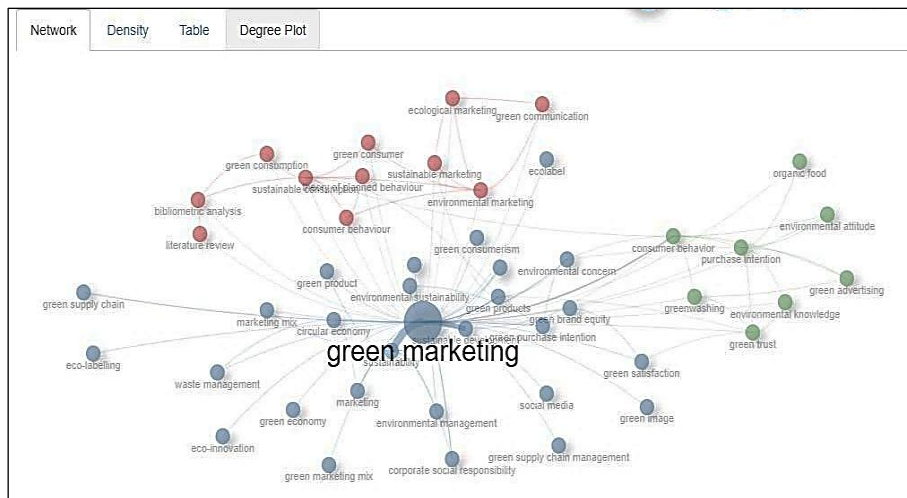


Figure 7: Co-Occurrence of Network

Co-Occurrence of Network: The co-occurrence of words network map displays the keywords that are most frequently found in the titles, abstracts, or keywords of articles within a specific set. These networks show the connections and points of overlap between seemingly unrelated academic disciplines. The terms "green marketing," "sustainability," "greenwashing," "environmental knowledge," "consumer behaviour," and "ecological marketing" are the most frequently utilised ones, as Figure 7 shows.

World Collaboration: Co-authorship data was used to construct a global collaboration map that

helps explain how different countries contribute to the field of green marketing research. Based on co-authorship with Malaysia, Pakistan, the United States, and the United Kingdom, Figure 8 shows the top collaborating countries. China is placed first in terms of international collaboration. Academics gained a clearer grasp of how various nations contributed to and collaborated on the related subject using co-authorship analysis by nation (44). This analysis assessed the extent to which different nations worked together. The United States of America has the second-highest level of collaboration with Korea, followed by India with

Malaysia and Saudi Arabia, Malaysia with Indonesia, and the Netherlands with Germany. International collaboration for green marketing

research is more prevalent in developed countries than in underdeveloped ones.

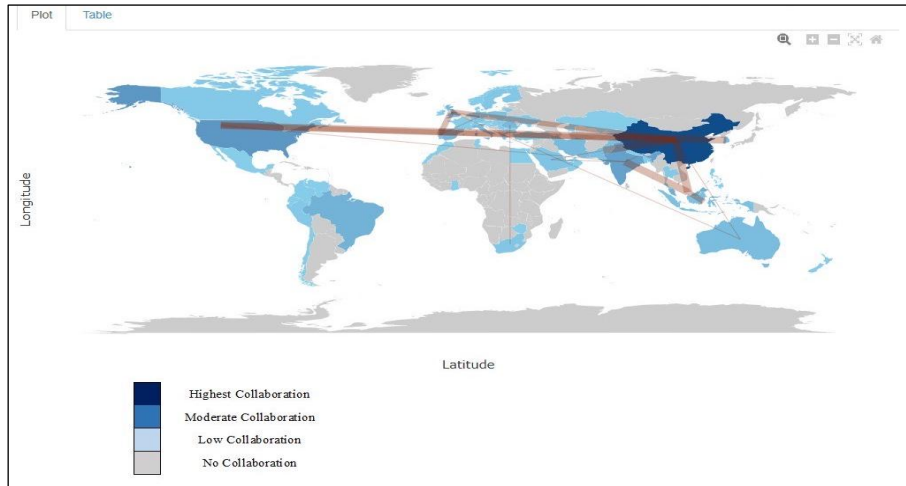


Figure 8: World Collaboration

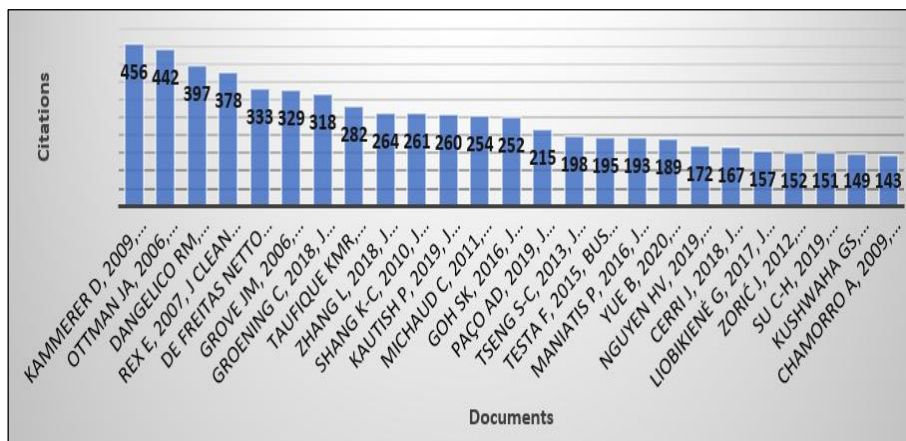


Figure 9: The Most Global Cited Articles

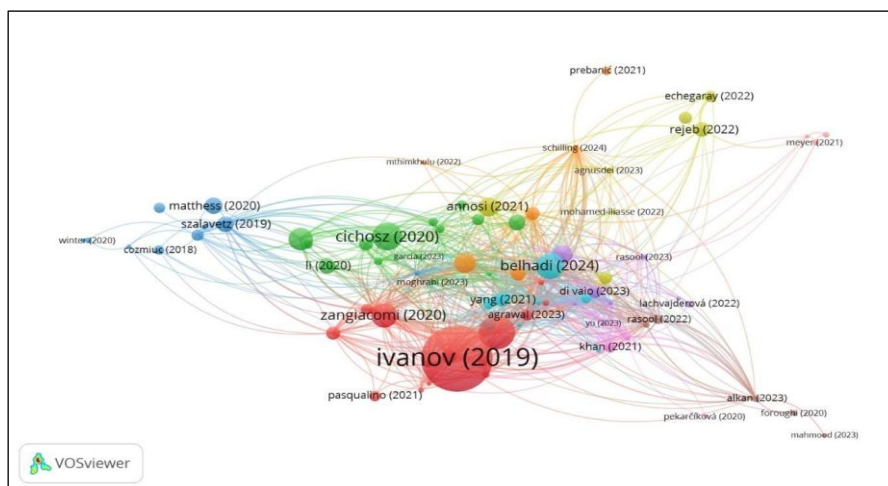


Figure 10: Bibliographic Coupling

Most Globally Cited Documents: The articles on green marketing that have received the most citations globally are Kammerer D, (2009) with 456 citations, Ottman JA, (2006) with 442

citations, Dangelico RM (2017) with 397 citations, Rex E, (2007) with 378 Citations, De Freitas SV (2020) with 333 citations and Grove JM (2006) with 329 citations (Figure 9).

Bibliographic Coupling: Bibliographic coupling (Figure 10) is a method that counts the number of documents that two texts cite to determine how similar they are. Bibliographic coupling is a technique that compares two texts according to the references they have in common. The bibliographic connection between two documents is stronger when they share more references. The structure of a body of literature may be understood, groupings of connected documents can be found, and users can be recommended related or comparable documents using this technique. The 136 publications' bibliographic relationship is shown in Figure 10 along with a network visualisation. The total link strengths and the number of citations for each publication were computed. The documents chosen were those having the strongest overall link. Deepu (2023) had 170 total links and 7 citations, making it the strongest. Despite being the most cited article in this field with 929 citations, Ivanov (2019) was ranked lower due to its lower total link strength is 60.

Co-Citation Analysis: Research elements' structural interconnections and intellectual

linkages are mapped utilising various analysis approaches. Citation analysis is one of them in which the frequency of citations provided for an article is examined; the more citations, the more popular the study is also thought to be (45). Co-citation analysis is a technique that tracks how frequently research items and publications are mentioned together to examine the relationships between them. Research cannot be regarded as pioneering when citation counts treat all citations equally, regardless of the source from which the papers were cited (46, 47). The associated cited articles are visualized as an overlay in Figure 11. Ivanov D. has the most connected items with 129 citations and a total link strength of 10114. Gunasekaran A. has 121 citations and a total link strength of 6693, while Dolgui A. has 70 citations and a link strength of 5835. By classifying objects according to the time scale, overlay visualization supports the most current trends in the topic of study (48). The period is indicated by colour coding, which is explained in the corner. VOS viewer, a tool for visualizing citations, is used to display the figure.

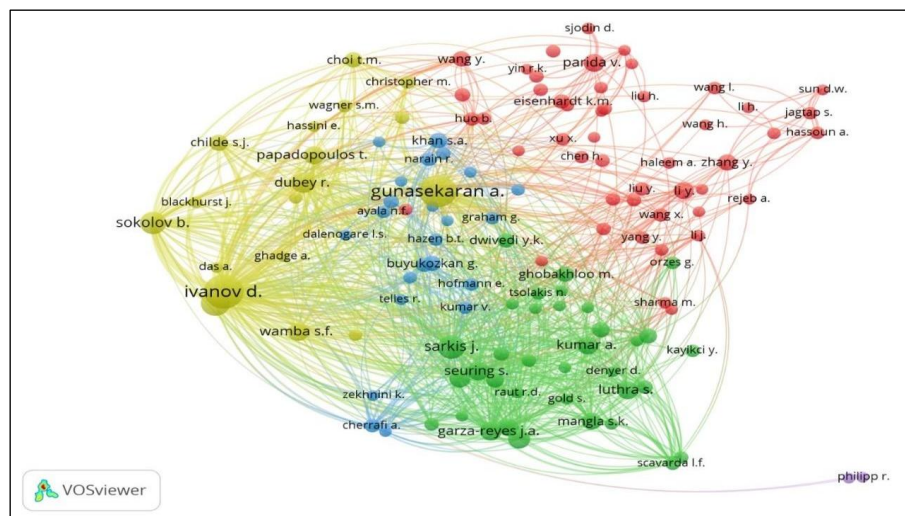


Figure 11: Co-Citation Analysis

Discussion

Bibliometric analysis serves as a powerful lens for scrutinizing research dynamics in specific domains this review analysis gives the bird's eye view of green marketing. Through the implementation of bibliometric analysis, researchers can acquire valuable insights into the field's development, recognize important research issues, and comprehend the impact of various scholars and publications in the field of green marketing. This

article examined the research trends, relevance, and potential future research areas of work on green marketing in the marketing industry using bibliometric analysis and a systematic review. Using bibliometric analysis, 378 papers that highlight the growth and achievements in this field of research were gathered from the Scopus database. The research collected the data from 2004 to 2023. In recent years, researchers have become more interested in the marketing

industry's green marketing phenomenon. The marketing industry's annual scientific output of green marketing has developed over many years into a clear and recognizable trend.

China has been identified as the primary country participating to the field of green marketing in the marketing literature. China was found to have made a significant contribution of 2977 papers between 2004 and 2023, with the highest amount of citations. Iraldo F. and Testa F. have published 5 articles with 106 citations related to green marketing, in the journal *Sustainability* (Switzerland) in China, followed by *Business Strategy and Environment*, and *Journal of Cleaner Production*. According to Bradford Law divides journals into three categories: journals in Zone 1 are the most influential and of the highest quality; journals in Zone 2 are of a moderate effect and quality; and journals in Zone 3 have little to no influence in literary circles. 107 research articles in the marketing industry discussed green marketing between 2004 and 2023. Out of the 107 research journals, 2 are in Zone 1, 12 are located in Zone 2, and 93 are in Zone 3. The *Worldwide Journals of Sustainable Development and Planning*, as well as the *management of Environmental Quality: an International Journal*, came next in the three-field plot analysis of the top journals on sustainability (Switzerland). The terms "green marketing," "sustainability," and "sustainable development" are the main keywords of these publications. The majority of the keywords and contributions to this publication come from Brazil, China, and India. The network map determined the most commonly used keywords as "green marketing," "sustainability," and "greenwashing" based on the co-occurrence of words. To learn more about how countries work together to support research on green marketing in the marketing industry, a global cooperation analysis based on coauthorship was carried out. China ranks first in terms of international collaboration based on co-authorship with Malaysia, Pakistan, the United States, and the United Kingdom, according to the review's findings. Academics gained a better understanding of how various countries contributed to and collaborated on the related subject using co-authorship analysis by country (44). This analysis assessed the extent to which various countries worked together. India with Malaysia and Saudi Arabia, followed by Malaysia

with Indonesia and followed by the Netherlands with Germany.

The most cited and relevant articles in the topic of green marketing within the marketing industry were found through a systematic review. Finally, the researcher identified a few significant study gaps and provide recommendations for further studies. Our research has significant business and industry implications. This study focuses illumination on important research, influential publications, productive authors, and the constant development of green marketing. Furthermore, in the field of marketing, green marketing may encourage multidisciplinary research. Researchers in the fields of economics, environmental science, and marketing can work together to explore the complex issues of green marketing deals in the marketing industry. The purpose of the study is to provide a comprehensive understanding of the concept of green marketing from an environmental science perspective within the marketing industry. Academics, investors, customers, regulators, marketing executives, and stakeholders are all expected to find this information beneficial. In the marketing industry, studying green marketing is often crucial to understanding its effects on the environment, the economy, and strategic implications.

Research Gap

The lack of studies specifically focusing on the integration of sustainability concepts within marketing literature could be one potential research gap in the field of bibliometric and systematic analysis of green marketing. Even though studies on green marketing have been conducted utilizing bibliometric analysis, there is still a gap in terms of a thorough understanding of green marketing. The limited consideration of green marketing's contribution to bibliometric analysis and systematic literature evaluation, including the worldwide citation patterns, author influence, and overall publication counts of the top countries in terms of green marketing techniques. Consumer perception, purchasing behavior, purchase intention, lifestyle choice, customer behavior, customer satisfaction, and perceived value are the main subjects of research. Apart from the fact that a company's perspective requires this in-depth understanding, green marketing strategies, implementation planning, benefits, and drawbacks must all be considered. Additionally,

green products and services must be prioritized over company interests.

Despite the amount of research on green marketing is increasing, deeper evaluations that examine current research trends in comparison to past years may be necessary. Consumer perception, purchasing behavior, purchase intention, lifestyle choice, customer behavior, customer satisfaction, and perceived value are the main subjects of research. Apart from the fact that a company's perspective also requires an in-depth understanding of green marketing strategies, implementation planning, benefits, and drawbacks. Additionally, green products and services must be prioritized over company interests.

Collectively, to address these research gaps and advance theory and practice in this crucial area, a deeper comprehension of green marketing trends, barriers, and possibilities may result from thorough bibliometric and systematic studies.

Researchers and practitioners may find useful insights by looking into how these analyses affect the efficiency and implementation of green marketing strategies. Our study examines twenty years of data on green marketing, from 2004 to 2023, to analyse trends, publications, citations, and collaboration in the field of green marketing. By filling in these research gaps, scholars and practitioners can enhance our knowledge of green marketing and help create practical tactics for promoting environmental sustainability in the marketplace.

Future Research Scope

Future study on green marketing offers a wide range of opportunities, especially as consumer knowledge of environmental issues keeps rising. Analysing consumer perception more especially, how people distinguish between genuine green marketing initiatives and greenwashing schemes and the variables influencing their trust and purchase decisions are important areas of research. To ascertain how well environmental certifications and labels contribute to boosting customer confidence and reducing scepticism, further research is necessary. It is also crucial to investigate how social media influences consumer views and raises awareness of greenwashing, particularly in light of the quickly changing digital landscape. Furthermore, researching how greenwashing affects brand loyalty over the long

run might reveal information on consumer behaviour and reputation management. Research might concentrate on how regulations affect green marketing strategies in different industries because regulatory frameworks are also important. While the creation of tools for identifying greenwashing could enable customers to make educated decisions, cross-cultural perspectives on green marketing may highlight notable variations in consumer reactions. In the end, studying these subjects will help us better grasp the relationship between sincere sustainability initiatives and deceptive marketing techniques, which will direct companies toward more ethical and successful green marketing communication tactics. The study focuses on key areas of Green Marketing such as Green Brand Equity, Green Products & Services, Ecofriendly products, Green Consumerism, and greenwashing & Sheen. This majorly supports the current area of green marketing research.

Conclusion

Green marketing has emerged as a crucial strategy for businesses in response to growing environmental concerns and consumer demand for sustainable products and practices. The research emphasizes that in more environmentally sensitive markets, green marketing can result in competitive advantages, improve company reputation, and cultivate consumer loyalty. According to Dangelico and Vocalelli (20), the genuine application of green marketing methods can have a favorable effect on brand image, consumer loyalty, and market share. However, their effectiveness varies across industries and consumer segments (49). Eco-awareness among consumers is on the rise, yet there's often an absence between intentions and actual consumption patterns (50). Factors influencing this gap include price sensitivity, product availability, and perceived quality (45).

Some important research findings and analyses are pointed out using the extensive literature review and using bibliometric analysis. First, the present study has made theoretical contributions to the field of green marketing by reviewing the top 30 cited articles from the Scopus database which is limited to the year from 2004 to 2023. The review emphasizes the risks related to greenwashing, underlining the significance of transparency and sincere dedication to sustainability to preserve

customer confidence. We also highlighted the overview of extensive review articles published between (2004 to 2023) on green marketing by previous authors. The study has clearly defined the research articles selected through the Scopus database using the Prisma protocol.

Based on an analysis of articles published between 2004 and 2023 on green marketing, It is clear that marketing strategies have undergone a substantial change in favor of sustainability and environmental responsibility. Businesses are realizing more and more how crucial it is to include green initiatives in their plans to satisfy customer needs and help create a more sustainable future. The study emphasizes the advantages of green marketing for long-term profitability, consumer loyalty, and brand reputation. All things considered, the findings point to the necessity of green marketing for companies to prosper in a world that is changing quickly, rather than merely being a trend.

To conclude, the bibliometric analysis of the literature on green marketing offers important insights into the development, significance, and networks of collaboration within the area. Through an analysis of publication outputs and distribution patterns, evaluation of the impact of publications and authors, examination of important research subjects and trends, and analysis of publication outputs, researchers can develop a thorough grasp of the present state of knowledge in green marketing. The publication trends on green marketing are used to demonstrate the number of papers from 2004 to 2023. In general, there has been a gradual increase in the movement towards green marketing. In this domain, India places the third position and needs to improvise in green marketing research to achieve sustainable goals

Although green marketing has the potential to meet customer demands and address environmental issues, its successful implementation necessitates meticulous execution, strategic planning, and sincere dedication. Intention-behaviour discrepancies should be closed, unified standards for green marketing efficacy should be developed, and the long-term effects of these strategies on environmental sustainability and company performance should be investigated in future studies.

The field is evolving towards more holistic approaches, integrating green marketing with broader corporate social responsibility and sustainability strategies. Finding new areas of interest and emphasizing gaps in the literature are two ways that this kind of analysis can guide future research directions. Additionally, it can support evidence-based practice and decision-making by assisting stakeholders including practitioners, policymakers, and educators in understanding the significance and visibility of green marketing research. Future studies ought to quantify how green marketing campaigns affect consumer behavior and business performance over the long run. By comprehending these processes, companies can improve their tactics and optimize financial gains and benefits for the environment.

Abbreviation

Nil.

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Author Contributions

Nowshath Bee: Conceptualization, Methodology, Data collection, Analysis, Writing, Original draft preparation, Muthumeenakshi M: Writing, Review, Editing, and Supervision.

Conflict of Interest

The authors declare no conflict of interest.

Ethics Approval

Not Applicable.

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