

# Three Decades (1992-2021) Of Green Consumer Behaviour: A Bibliometric Analysis Its Publication, Year And Percentage

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## Abstract

Since consumers are focusing more on environmental sustainability, researchers are also becoming interested in studying the behaviour of such consumers. This study carried out a bibliometric analysis of green product and the purchase behavior of consumers starting from 1992 to 2021. The Scopus database was searched to find the most cited papers, prolific authors, countries, and institutions related to green product purchase behaviour. The purpose of this study is to provide a bibliometric analysis of green product related literature. The study utilized the Boolean search technique to retrieve the publications from 1992 to 2021 related to perception, awareness, attitude, and purchase intention of consumers towards green products. Number of 764 research paper studies were extracted to give instructive and delegate points of view of the information. The outcomes of the bibliometric analysis shown that most publications on green branding were published in 2018. The most recognised study is titled 'Pro-environmental products: marketing influence on consumer buying decision.' Chung-Shing Chan of The Chinese University of Hong Kong is recognised the most popular writer on green branding. Journal of Cleaner Production and Sustainability have published the most literature on green products. Moreover, this study provides information on significant journals, authors, institutions, and countries on the topic of environmental sustainability and green research. Further, this study documented that developing countries dominated the publication of research on green products. In terms of higher education institutions, Malaysia and China took the lead in publishing of green product related research.

**Keywords:** Perception, Attitude, Purchase Intention, Green Products, Bibliometric Analysis

## 1. Introduction

Green marketing is the means of all advertising efforts designed to satisfy consumers in ways that they no longer have a poor influence on the environment. Marketing is not a sales or advertisement activity, rather it consists of a variety in the form of product ideation, industrial production, bundling, promoting, and distribution. On the same lines, green advertising and marketing comprises a large variety of marketing operations that may encompass product redesigning and advertising communication. Green advertising and marketing has been additionally termed as environmental marketing, sustainable marketing, and eco-marketing. Sustainable and environmental advertising include three essential elements: environmental, social, and economical. Green marketing evolved with the consumers and has a prolonged approach consisting of utilisation of a company's sources for innovation.

The present study is designed to synthesize different themes related to green purchase studies with a focus to have an academic integrated view. Although prior researches have explored the green purchase behaviour of consumers in their own way, but no study has presented an integrated overview. According to Foroudi et al. (2020), the literature related to green consumer behaviour lacks rigour and does not offer an integrated grasp of the related research.

Subsequent growth over a study domain can be predicated based on the existing knowledge on various aspects of a domain (Kuhn, 1996). Both, past and contemporary studies, have sought to offer an integrated research direction and ideas for future scholars, but their suggestions are dependent on their subject and do not offer an integrated recommendations for the future academics.

A variety of keywords (described in detail in the methodology section) were incorporated into the bibliometric analysis to meet the demand for a complete bibliometric analysis on green marketing. All academic materials and resources published in any language (articles, conference papers, books, book chapters, etc.) during the study period have been included in this bibliometric study. Quantitative and qualitative aspects of green consumer research are taken into account, including the number of publications, statistics on citations, and an examination of many factors, such as authors, organisations, nations, keywords, sources, and annual output of the papers. This study aims to evaluate and identify publishing trends and patterns in green marketing from the period 1992 to 2021 by assessing the most productive countries, organisations, authors, the most popular journal titles, authors' collaborative networks, and global collaboration patterns. Also, this study uncovers emerging trends in articles and performance of journals, and further explores the intellectual structure of a specific domain in the extant literature.

## 2. Literature Review

In social sciences, literature survey is a frequently used tool to analyze the written communication (Weismayer and Pezenka, 2018). For instance, Hubbard et al. (2012) investigated the influence of awarded marketing articles using citation analysis. Samiee and Chabowski (2012) studied the knowledge structure of international marketing by applying hierarchical cluster analysis (HCA) and multidimensional scaling (MDS). Wiid et al. (2012) tried to illuminate the key contributions and values in the evolution of Marketing Intelligence and Planning by employing citation analysis. Francisco et al. (2017) used bibliometric analysis to study the trends of the European Journal of Marketing in last fifty years (1967 to 2017). Sheoran et al. (2020) applied the co-citation and citation analysis to find the trends and future direction of marketing literature. In general, bibliometric analysis plays an important role in answering the questions of conceptual structure of the complicated fields of studies (Oliver and Ebers, 1998). Additionally, bibliometric analysis has been used to compare and evaluate the research outcomes of different institutions, fields of study, researchers, and geographical regions (Moed et al., 1995; Van Raan, 2005).

There are variety of bibliometric studies in many areas, including management studies (Podsakoff et al., 2008), economics (Bonilla et al., 2015), innovation (Fagerberg et al., 2012), and entrepreneurship (Landstrom et al., 2012). Many studies have been conducted in the areas of marketing also and some of these include; study related to diversity of different marketing journals (Tellis et al., 1999), analysis of perceptions of leading marketing journals (Theoharakis and Hirst, 2002), and leading scholars and institutions in marketing journals by Bakir et al. (2000) and Chan et al. (2012). Ranking of marketing journals was developed by Moussa and Touzani (2010) using Google Scholar and Svensson and Wood (2008) worked for developing the criteria for differentiating the leading journals in the field of marketing.

The present work uses bibliometric indicators (Garfield, 1955) to represent volumes, types, growth of publications, top authors in the area of green marketing, top journals publishing papers in the field of green consumer behaviour, and others. Between the year 1995 and 2012, numerous journals published papers with high citation counts, including the Journal of Marketing, Advertisement Research, Ethics in Business and Management Research, Journal of Operations and Production Management, and California Management Review. All these journals had high citation counts. There was a lot of groundbreaking work done on green marketing during this time. An increasing number of people are citing Henion's "Ecological Marketing" book. Similarly, Peattie's book "Environmental Marketing Management: Meeting the Green Challenge" received the most citations between 2003 and 2013. The citation bursts began in 2000 and lasted until 2015. Despite the fact that green marketing research has been published since 1990s, these citation busts show its relevance in the 2020s.

Journal of Business Research, Journal of Cleaner Production, Journal of Business Ethics, and the Journal of Business Strategy and the Environment are among the ISI impact factor journals in which authors from the United States and China have published extensively using the keywords green marketing and sustainable marketing. In the subject of

sustainability and green research, all of these journals are well-known for their high standards of quality and integrity. Authors and editors of prestigious journals are paying more attention to the growing field of green marketing. Future green marketing researchers may consider these journals as prospective outlets for their quality and unique work. Greenwashing, ecological marketing, and sustainable consumerism were also identified as prospective new research fields by our analysis.

There are numerous authoritative guides on systematic literature reviews, but they do not adequately cover the bibliometric methodology (e.g. Palmatier et al., 2018; Snyder, 2019). The objective of this study is to fill-in the aforementioned gaps of bibliometric methodology and the steps involved in conducting business research using bibliometric analysis. Further, this paper explains the basics of bibliometric analysis to business researchers, with examples and rationale.

This paper makes numerous contributions. The overview of conducting bibliometric analysis could help the business scholars to learn about bibliometric methodology and can utilize that learning to evaluate specific fields of literature in the extant literature. This study also provides a wide range of options and rationale for usage of bibliometric analysis, and can help the scholars to better understand how to use various techniques for such analysis. To sum up, this paper provides an in-depth understanding of bibliometric methodology for business research that is both clear and rigorous, paving the way for future business researchers for effective usage of bibliometric analysis. The paper has been organised as follows; introduction to literature of green research using bibliometric analysis, methods used in this study, and the results of analysis. In the last section, the conclusion has been presented followed by some future directions.

### 3. Bibliometric Methodology

Review articles can be of different types such as; Theory Based (Gilal et al., 2019; Hassan et al., 2016), Theme Based (Mishra et al., 2020; Hao et al., 2019; Dhaliwal et.al, 2020; Rana & Paul, 2017; Rosado-Serrano et al., 2018), Framework-Based (Paul & Benito, 2018; Lim et al., 2020; Sodergren, 2021), Hybrid Reviews (Dabic et al., 2020), Bibliometric Analysis (Ruggeri et al., 2019; Randhawa, Goel & Kumar, 2021; Paul & Bhukya, 2021), and Meta-Analysis (Rana & Paul, 2020; Barrari et .al, 2020). Bibliometric reviews can be domain-based or Journal Based (Bhukya et.al, 2021). It can be further classified as basic descriptive statistical, citation analysis, and conceptual modelling analysis. Basic descriptive analysis helps in learning about the research field's structure (e.g. geographical area of publications), content (e.g. authorship), and the most active research institutes. Citation analysis relates to the study of the literature that is referenced in a given piece of writing (Ratnatunga & Romano, 1997; Usdiken & Pasadeos, 1995; Bhukya, Paul, Katanikas & Robinson, 2021). Also the citation analysis plays a significant role in determining the intellectual foundation of a given body of research and identifying the knowledge structure that underlies it. On the other hand, a temporal citation can reveal how the literature has changed over a period of time. Co-coupling also has been identified as one of the most common forms of citation analysis (Chabowski et al., 2016). Lastly, the conceptual modelling analysis reveals that the articles under investigation are read and their properties of interest are manually coded by the researcher. This paper followed domain-based review set by Paul et al., (2021).

Going further, bibliometric analysis is a statistical evaluation of published scientific articles, books, or book chapters and has gained popularity among the researchers in last few years (Donthu, Kumar, Pattnaik, & Lim, 2021; Khan et al., 2021). Osareh (1996) has referred the bibliometric analysis as the quantification of written texts. It is an effective way to measure the impact of publications in the scientific community (Metzger and Coustan, 1998, Eshraghi et al., 2013). Since it is a method to evaluate the benefits of a given subject area (Shang et al., 2015), the literature has recorded a number of bibliometric based analysis across the disciplines (Sweileh, 2020). Ellegaard and Wallin (2015) stated that “bibliometric analysis is a form of quantitative evaluation that defines the quality and impact of scientific papers in a specific area”. In addition to this, Pritchard and Broadus argued that bibliometric analysis highlights the academic features of the articles such as “keywords”, “authors”, “countries” and “publication trends” and provides a complete picture of the performance of the journal or the domain in a given time frame. The same argument has been supported by Aydin and Senel (2019).

The underlying stage in any bibliometric research study is to pick the reasonable data set to be used to recuperate the huge records (Wang et al., 2020). Scopus is the most utilized information base in the social sciences research (Falagas et al., 2008), therefore this base has been used to recover the archives and objectives of the investigation. Boolean search technique has been employed to retrieve the information related to consumer behaviour towards green product. Three decades of search period has been selected from 1992 to 2021. Since consumer behaviour is a wide area of study, therefore other terms such as awareness, attitude, perception, and purchase intention have been focused while extracting the information related to green product consumption.

### 3.1 Database Selection

There are number of databases for indexing and abstracting, but Scopus and WoS are two most preferred multidisciplinary databases. Other databases are subject-specific (e.g. MEDLINE, PubMed, AGRICOLA, ERIC, etc.). In this study, Scopus database has been chosen because it is widely regarded as the most reliable and trustworthy collection of articles containing high-quality academic materials. The current study covers both qualitative and quantitative articles. Since only Scopus database has been used in this study, it is quite possible that some articles, which were indexed in other multidisciplinary and subject-specific libraries, might have been missed out during extraction process.

### 3.2 Search Mechanism

Boolean search has been used by using ‘or’ and ‘and’ (‘awareness’ or ‘attitude’ or ‘purchase intention’ or ‘perception’) and (‘green products’ or ‘eco-friendly goods’). Searches were conducted through Scopus database for each article’s reference id, author keywords, publication title, and document title. The main emphasis has been given on the green purchase and consumer behaviour related articles published in peer reviewed journals, therefore, books, opinion papers, editorial notes, and other sources have been excluded during extraction process.

For the 30-years period (1992-2021), approx. 106 articles with a total of 764 citations were found related to green product and green purchase behaviour. Applying the bibliometric technique, the performance of various studies have been analysed based on many dimensions. Firstly, types and number of articles published during the period of 1992 to 2021 have been analysed. Then, we examined the number of articles published year wise with their contribution in percentage, followed by the most active authors in the field of green product and green consumer related publications, and the top 20 journals published the green product related literature. Finally, the top 20 countries and institutions contributing in publishing the green related literature has been examined. All the related results have been provided in the subsequent pages.

## 4. Results

### 4.1 Types of Publications

Table 1 depicts the types of various publications appeared between the year 1992 to 2021 on green product and green consumer behaviour. Details of the publications show that a large number of studies related to green product and their consumption have been published (n=617; 80.76 percent) followed by conference papers (n= 89; 11.65 percent), review articles (n= 31; 4.06 percent), book chapters (n=24; 3.14 percent), conference review articles (n=2; 0.26 percent), and other publications (n=1; 0.13 percent).

**Table 1: Types of Publications on Green Products (1992-2021)**

Type of document	Frequency	%
Article	617	80.76
Book Chapter	24	3.14
Conference Paper	89	11.65
Review	31	4.06

Conference Review	2	0.26
Other	1	0.13

Notes: N=764.

Table 2 presents the number of publications related to green products from 1993 to 2021. While analysing the year wise publications, it is observed that very less literature related to green products and green behaviour has been published from the year 1992 to 2008. From 2009 onwards, a sharp rise is seen in the publication related to green products. The year 2019 and 2020 have recorded the largest number of publications related to green products. In the year 2021, 37 research studies have been published on green products which were included in Scopus database. Therefore, it can be concluded that the orientation of researchers towards green marketing and green products has increased in the recent past.

**Table 2: Year Wise Publications on Green Products (1992 and 2021)**

YEAR	Total Publications	%
2021	37	4.84
2020	124	16.23
2019	120	15.71
2018	95	12.43
2017	74	9.69
2016	54	7.07
2015	45	5.89
2014	37	4.84
2013	39	5.10
2012	29	3.80
2011	15	1.96
2010	16	2.09
2009	16	2.09
2008	7	0.92
2007	5	0.65
2006	7	0.92
2005	6	0.79
2004	2	0.26
2003	4	0.52
2002	2	0.26
2001	2	0.26
2000	7	0.92
1999	4	0.52
1998	2	0.26
1997	3	0.39
1996	3	0.39
1995	2	0.26
1994	6	0.79
1993	1	0.13

Notes: N=764. Source: Scopus database

#### 4.2 Active Authors

The contribution of top twenty authors (1992-2021) in the area of green marketing and green products has been depicted in Table 3. The analysis reveals that Suki, from Malaysia, contributed the most (12) publications on green products followed by Suki and Norbayah, from Malaysia, with 6 publications, and many other authors (Chin, Harun, Ogiemwonyi, Taghian and Zhandwith) with 5 articles each to their credit on green products. Moreover, the results reveal that authors from Australia, China, India, United States, Brazil, France, Taiwan and South Korea have also contributed to literature of green products.

**Table 3: Top Twenty Authors on Green Products (1992-2021)**

Rank	Author	Country	N	%
1 <sup>st</sup>	Suki, N.M.	Malaysia	12	1.57
2 <sup>nd</sup>	Mohd Suki, Norbayah	Malaysia	6	0.79
3 <sup>rd</sup>	Chin, T.A.	Malaysia	5	0.65
4 <sup>th</sup>	Harun, A.B.	Malaysia	5	0.65
5 <sup>th</sup>	Ogiemwonyi, O.	Malaysia	5	0.65
6 <sup>th</sup>	Taghian, M.	Australia	5	0.65
7 <sup>th</sup>	Zhang, L.	China	5	0.65
8 <sup>th</sup>	Hong, Z.	China	4	0.52
9 <sup>th</sup>	Khan, M.N.	India	4	0.52
10 <sup>th</sup>	Barber, N.	USA	3	0.39
11 <sup>th</sup>	Biswas, A.	India	3	0.39
12 <sup>th</sup>	Braga Junior, S.S.	Brazil	3	0.39
13 <sup>th</sup>	Brécard, D.	France	3	0.39
14 <sup>th</sup>	Chekima, S.	USA	3	0.39
15 <sup>th</sup>	Chen, C.N.	Taiwan	3	0.39
16 <sup>th</sup>	Correa, C.M.	Brazil	3	0.39
17 <sup>th</sup>	D'Souza, C.	Australia	3	0.39
18 <sup>th</sup>	Han, H.	South Korea	3	0.39
19 <sup>th</sup>	Jaiswal, D.	India	3	0.39
20 <sup>th</sup>	Khare, A.	India	3	0.39

Notes: N=764

#### 4.3 Active Journals

Further, the literature was analysed to identify the journals contributing in the field of green products. The details of too twenty journals (1992-2021) has been exhibited in Table 4. The Journal of Cleaner Production has taken the lead in publishing the research articles on green products with 37 articles from 1992 to 2021. Second place has been secured by the journal Sustainability with a contribution of 35 research studies. Furthermore, Journal of Consumer Marketing, Business Strategy and the Environment, Conference Series Earth and Environmental Science, and Advanced Science Letters published 13, 12, 12, and 10 articles, respectively. Environmental Science and Pollution Research and International Journal of Environmental Research and Public Health contributed 8 articles each. Asia Pacific Journal of Marketing and Logistics, International Journal of Consumer Studies, International Journal of Innovation Creativity and Change, and International Journal of Environmental Research and Public Health contributed 7 articles each on green products.

**Table 4: Top Twenty Active Journals Publishing Green Products Literature (1992-2021)**

Rank	Name of Journal	Total Publications	%
1 <sup>st</sup>	Journal of Cleaner Production	37	4.84
2 <sup>nd</sup>	Sustainability	35	4.58
3 <sup>rd</sup>	Journal of Consumer Marketing	13	1.70
4 <sup>th</sup>	Business Strategy and The Environment	12	1.57
5 <sup>th</sup>	Iop Conference Series Earth and Environmental Science	12	1.57
6 <sup>th</sup>	Advanced Science Letters	10	1.31
7 <sup>th</sup>	Environmental Science and Pollution Research	8	1.05
8 <sup>th</sup>	International Journal of Environmental Research and Public Health	8	1.05
9 <sup>th</sup>	Asia Pacific Journal of Marketing and Logistics	7	0.92
10 <sup>th</sup>	International Journal of Consumer Studies	7	0.92
11 <sup>th</sup>	International Journal of Innovation Creativity and Change	7	0.92
12 <sup>th</sup>	Journal of Retailing and Consumer Services	7	0.92
13 <sup>th</sup>	International Journal of Production Research	6	0.79
14 <sup>th</sup>	Journal of Business Ethics	6	0.79
15 <sup>th</sup>	Social Responsibility Journal	6	0.79
16 <sup>th</sup>	Young Consumers	6	0.79
17 <sup>th</sup>	Environment Development and Sustainability	5	0.65
18 <sup>th</sup>	IEEE Access	5	0.65
19 <sup>th</sup>	International Journal of Green Economics	5	0.65
20 <sup>th</sup>	International Journal of Production Economics	5	0.65

Notes: N=764

#### 4.4 Active Countries

Table 5 highlights the contribution of top 20 countries on green products peer-reviewed literature from 1992 to 2021. The results show that China (n=119; 15.58 percent) is the leading country in carrying out research and publishing literature on green products from 1992 to 2021 followed by India (n=104; 13.61 percent), United States (n=101; 13.22 percent), Malaysia (n=91; 11.91 percent), Taiwan (n=50; 6.54 percent), Indonesia (n=47; 6.15 percent), Australia (n=29; 3.80 percent), Brazil (n=24; 3.14 percent), United Kingdom (n=23; 3.01 percent) and Hong Kong (n=18; 2.36 percent). The results reveal that developing countries are dominating in publishing of research articles on green products. In this race, developed nations seem lacking. It is interesting to note that India is second largest country which contributed to the green literature from the year 1992 to 2021.

**Table 5: Contribution of Top 20 Countries on Green Products Literature (1992- 2021)**

Rank	Country	Total Publications	%
1 <sup>st</sup>	China	119	15.58
2 <sup>nd</sup>	India	104	13.61
3 <sup>rd</sup>	United States	101	13.22
4 <sup>th</sup>	Malaysia	91	11.91
5 <sup>th</sup>	Taiwan	50	6.54
6 <sup>th</sup>	Indonesia	47	6.15
7 <sup>th</sup>	Australia	29	3.80
8 <sup>th</sup>	Brazil	24	3.14
9 <sup>th</sup>	United Kingdom	23	3.01
10 <sup>th</sup>	Hong Kong	18	2.36
11 <sup>th</sup>	Iran	17	2.23
12 <sup>th</sup>	Thailand	16	2.09
13 <sup>th</sup>	France	15	1.96
14 <sup>th</sup>	South Korea	15	1.96
15 <sup>th</sup>	Germany	14	1.83
16 <sup>th</sup>	Italy	14	1.83
17 <sup>th</sup>	Pakistan	14	1.83
18 <sup>th</sup>	Romania	14	1.83
19 <sup>th</sup>	Turkey	14	1.83
20 <sup>th</sup>	Canada	12	1.57

Notes: N=764

#### 4.5 Active Institutions

Contribution of top twenty academic institutions in the green product related literature from 1992 to 2021 has been presented in Table 6. University Malaysia Sabah from Malaysia (n=15; 1.96 percent) is the leading contributor followed by University of Malaysia from Malaysia (n=10; 1.31 percent), University of Science and Technology of China from China (n=10; 1.31 percent), University Utara Malaysia from Malaysia (n=8; 1.05 percent), University Tun Hussein Onn Malaysia from Malaysia (n=8; 1.05 percent), UNESP-University Estadual Paulista from Brazil (n=7; 0.92 percent), University Teknologi Malaysia from Malaysia (n=7; 0.92 percent), University of Malaya from Malaysia (n=07; 0.92 percent), Shandong Normal University from China (n=6; 0.79 percent), and University de Sao Paulo - USP from Brazil (n=6; 0.79 percent). The results reveal that higher education institutions from Malaysia and China dominated in publications of research studies on green products.

**Table 6: Top Twenty University Published Green Products Literature (1992-2021)**

Rank	Institute	Country	Total Publications	%
1 <sup>st</sup>	University Malaysia Sabah	Malaysia	15	1.96
2 <sup>nd</sup>	University Sains Malaysia	Malaysia	10	1.31
3 <sup>rd</sup>	University of Science and Technology of China	China	10	1.31
4 <sup>th</sup>	University Utara Malaysia	Malaysia	8	1.05
5 <sup>th</sup>	University Tun Hussein Onn Malaysia	Malaysia	8	1.05

6 <sup>th</sup>	UNESP-Universidade Estadual Paulista	Brazil	7	0.92
7 <sup>th</sup>	University Teknologi Malaysia	Malaysia	7	0.92
8 <sup>th</sup>	University of Malaya	Malaysia	7	0.92
9 <sup>th</sup>	Shandong Normal University	China	6	0.79
10 <sup>th</sup>	Universidade de Sao Paulo - USP	Brazil	6	0.79
11 <sup>th</sup>	Hong Kong Polytechnic University	Hong Kong	6	0.79
12 <sup>th</sup>	Tianjin University	China	6	0.79
13 <sup>th</sup>	Lanzhou University	China	6	0.79
14 <sup>th</sup>	Aligarh Muslim University	India	6	0.79
15 <sup>th</sup>	University Teknikal Malaysia Melaka	Malaysia	6	0.79
16 <sup>th</sup>	Universidade Nove de Julho	Brazil	6	0.79
17 <sup>th</sup>	University Kebangsaan Malaysia	Malaysia	5	0.65
18 <sup>th</sup>	Tsinghua University	China	5	0.65
19 <sup>th</sup>	Chulalongkorn University	Thailand	5	0.65
20 <sup>th</sup>	Universitas Diponegoro	Indonesia	5	0.65

Notes: N=764

## New Aspects of This Study

In this study, peer reviewed work related to green products has been examined. Green purchasing strategy and green purchase positioning were analysed in order to identify the most important subjects for future purchase intention research. This group illustrates that environmental concern, demographic aspects of sustainable products customers, and the behavioral profile of green product customers are essential for proposing future green purchase research, as indicated in green purchase motives. Customers prepared to pay more for environmentally friendly products are being sought out by this group. Chekima et al. (2019), for example, found that customers' economic status had a significant impact on their green purchasing intentions.

As a precursor to green purchase behaviour, environmental, social, and PCS factors are examined. Customers that are concerned about the environment do not buy green products, according to the findings of Wei et al. (2018). According to their findings, customers' attitudes toward green products are positively influenced by environmental participation, information usefulness, green advertising scepticism, and green trust. Green purchasing and environmental concerns, on the other hand, focus on the demographic and attitudinal characteristics of green goods buyers. Sustainable consumption also looks at how culture influences green buying habits. Lastly, the demographic and attitudinal study of green consumption behaviour examines the influence of media in the consumer's green purchasing behaviour. Trivedi et al. (2020) found that media has a beneficial impact on the purchasing intention of Indian sustainable products buyers. 23.5 percent were written only by one person, accounting for 81.25% of the publications. An interesting factoid is that three of the most significant pieces were written by a single person, three were written by two people, and two had four people involved. Interestingly, the United States and China were one of the most important countries in green marketing research when it came to cooperation. The United States was the driving force behind every significant collaboration with a developing country, including China, India, Cyprus, and Korea. For everyone involved, international green marketing research collaborations are critical. These collaborations allow the collaborators to get access to technology, expertise, and resources that would otherwise be unavailable to them through these collaborations. Additionally, they're both time and money-saving options. Researchers that collaborate with colleagues around the world are more likely to get cited. It was shown that articles with international co-authors earned twice the number of citations as articles without international co-authors. These conclusions are also corroborated by the findings of our investigation.

'Green Marketing', 'Sustainability,' 'Sustainable Development,' 'Environment,' and 'Sustainable Marketing' were found to be the top five most searched terms. 'Green Marketing Research' is best described by these keywords. Consumption of green products, green marketing mix, consumer attitudes, and green competitive advantage were all under-researched terms in the green marketing field. There is evidence to suggest that consumers' interest in green shopping, green contentment, and green attitudes will only grow in the future. Researchers also found that greater research is needed into environmental issues, green products, and customer behaviour.

## 5. Limitations and Future Research Directions

Researchers in the field of green marketing might utilise this study to construct strategies that focus on subjects that are developing and have received less attention in prior studies. The most influential articles, authors, and journals can also be located, allowing researchers and scholars to discover study gaps and new insights in the field at hand. Multiple avenues for future research exist, such as a focus on more narrowed areas such as green consumerism and 4Ps (products/price/place/promotion) of green marketing; a comparison of green consumerism from developed countries to developing countries; and the use of more thorough and broader demographical variables to better understand green consumers in both developed and developing countries. Among the findings of this study are five: research from emerging and developing economies; greenwashing; green shopping; reduced economy; and eco-innovation.

## 6. Conclusion

Like all the researches, there are barriers in this research. First of all, the term inexperienced purchase was used to locate and pick out the green buy articles. Given the nature of the research, exceptional key phrases can reveal special articles which can have effect on the research. Additionally, although consequences are extensively used in the bibliometric research, different types of analysis can divulge different groups. Future research can look at the green purchase by the usage of extraordinary bibliometric analyses. Using other techniques such as EFA and community visualization can identify distinct groups. Consequently, the future study's findings can prove extra complete perception and improvement to the consequences of the following study. In this study, we highlight the bibliometric analysis of green products literature from 1992 to 2021. This study, like any other, has its limitations. In order to identify and locate the green purchases, the term "green purchase" was adopted. In the context of the study, different key phrases may lead to different publications, which may affect the findings. Bibliometric analysis can be used in future studies to analyse the buying of green products. EFA and network visualisation, for example, could be used to separate data into different categories. As a result, the findings of the subsequent study will be better understood and developed as a result of the findings of the future study. The bibliometric analysis of sustainable products literature from 1993 to 2021 is the focus of this study. We used the Scopus database's Boolean search to find the relevant articles. Research on green goods literature has been increasing in prominence in recent years, according to a new study. In this study, we highlight the bibliometric analysis of green products literature from this periods. We extracted the relevant publications from using the Boolean research from Scopus database. In context of growth of publications on green products literature, we found that researchers are giving more importance to green products literature in recent years. We extracted the relevant publications from using the Boolean research from Scopus database. In context of growth of publications on green products literature, we found that researchers are giving more importance to green products literature in recent years. Further, the results reveal that authors from Malaysia, Australia, China, India, United States, Brazil, France, and Taiwan are working in the field of green products literature. In addition, the Journal of Cleaner Production has published largest research studies on green products literature from three decades and secured 1st rank followed by Sustainability Switzerland with 35 research studies. Our results reveal that developing countries are dominated in publishing of research studies on green products literature from three decades followed by developed nations. It is interesting to note that India is second largest country which published largest research studies on green products literature. The results reveal that higher education institutions from Malaysia, and China dominated in publications of research studies on green products. Our article provides practical implications for upcoming researchers, policy makers, companies who producing green products. Finally, bibliometric evaluation tends to be

more centered on backward looking, with a heavy emphasis on the most-cited articles. Thus, the evaluation of this area is mainly based totally on the precise of most co-cited articles. Although the most closely referred to articles can be extensively influential, they don't signify the whole area of the research.

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