



Environmental Consciousness in the Digital Era of Online Shopping: A Systematic and Bibliometric Review

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ABSTRACT

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This research paper explores the intricate relationship between environmental consciousness and online shopping, conducting a comprehensive analysis of the literature landscape. Through a systematic literature review and bibliometric method, the research addresses critical questions, such as the evolution of literature over the past thirteen years, influential authors, key journals, contributing countries, bibliometric coupling, and thematic areas. The study reveals that online shopping, while generally having a lower carbon footprint than traditional shopping, is influenced by various factors, including consumer behavior, transportation, and packaging. Insights from behavioral science are proposed to bridge the gap between positive consumer attitudes towards eco-friendly products and their reluctance to pay more for them. The discussion extends to the broader context of environmental consciousness in business, emphasizing the paradoxical consumer behavior towards sustainable offerings. The study also explores the equivocal role of environmental concern in the decision-making processes surrounding environmental purchasing in online shopping. The methodology employs robust techniques, including VOSviewer software for bibliometric analysis, ensuring a rigorous examination of the literature. The findings contribute to the understanding of the complex interplay between environmental awareness and online consumer behavior, offering valuable insights for scholars, practitioners, and policymakers. However, the study acknowledges limitations, such as potential biases in the selected dataset and the focus on quantitative measures, encouraging future research to adopt a more inclusive, qualitative approach. The research outlines future directions, including the need for deeper qualitative analysis, extending temporal scope, exploring interdisciplinary aspects, conducting case studies, and examining geographical and cultural influences on sustainable purchasing attitudes in online shopping.

1. INTRODUCTION

Environmental consciousness in business encapsulates the critical awareness of the environmental impact arising from business activities and the commitment to adopting sustainable practices to mitigate these effects [1]. This holistic approach involves a careful consideration of the environmental ramifications of business decisions, encompassing the utilization of renewable resources, reduction of energy consumption, active participation in green programs, promotion of recycling efforts, and the integration of eco-friendly production processes.

Central to this consciousness is environmental awareness, a state where individuals grasp the imperatives for the well-being of the environment [2]. This awareness correlates positively with pro-environmental behavior, forming a crucial link between understanding and sustainable actions. However, despite positive consumer attitudes towards eco-friendly products and services, a notable reluctance to pay for them

persists, presenting a paradox for companies promoting sustainability [3]. Bridging this gap requires strategic insights from behavioral science, suggesting approaches such as leveraging social influence, cultivating good habits, and deciding whether to appeal to the heart or the brain [4].

Issues of environmental concern have gained significant traction in both business and academic spheres, reflecting a growing apprehension within the industry, among retailers, and within the consumer base regarding the impacts of modern consumerism on the environment [5]. Motivators such as values, beliefs, and personal ethics play pivotal roles in influencing individuals' actions in response to environmental concerns.

The surge in online shopping, a prominent feature of the modern consumer landscape, has intensified scrutiny on its environmental impact. Studies addressing this concern reveal that while online shopping generally exhibits a lower carbon footprint compared to traditional shopping, the actual environmental impact remains contingent on multiple

variables [6]. Environmental consciousness, shaped by factors such as knowledge, cognitive elements, attitudes, beliefs, social psychology, education, and technological awareness, significantly influences the environmental impact of online shopping [6].

To contribute to sustainability, companies can adopt various measures, including reducing energy waste, incorporating sustainable products, minimizing packaging waste, supporting environmental initiatives, and consciously managing deliveries and returns [7]. Despite a growing consumer interest in sustainability, there exists a reluctance to pay a premium for eco-friendly products. Insights from behavioral science [8] continue to provide valuable guidance, emphasizing the importance of social influence, habit formation, and the choice between appealing to emotions or rationality.

The overarching goal of this article is to unravel the intricate interplay between environmental consciousness and online shopping. This exploration extends to an analysis of the field's representation, considering factors such as journal, publication year, country, and methodological contexts. Moreover, the research seeks to examine the progression of current literature concerning environmental awareness and online shopping, identifying researched topics and highlighting potential directions for future investigation.

The study endeavors to address key research questions, exploring trends in publication over the last thirteen years, identifying influential authors, assessing current publishing tendencies, highlighting crucial journals, determining significant contributing countries and institutions, evaluating the interconnection between environmental consciousness and online shopping, mapping the development of this relationship over time, and unraveling the network of bibliometric coupling of sources, documents, and countries. The study also aims to elucidate the predominant keywords used by authors, employing bibliometric keyword co-occurrence analysis in this field.

This study investigates the environmental consciousness in online shopping research, aiming to uncover trends, key contributors, institutional affiliations, geographical distributions, document types, journal publications, citation patterns, keyword usage, and bibliographic coupling networks through a systematic and bibliometric analysis of existing literature. Hence it addresses the following research questions: RQ1 investigates the trends in this research area based on the year of publication, while RQ2 examines which authors contribute the highest number of articles. RQ3 focuses on identifying the top publications by institutions, and RQ4 explores the distribution of articles by countries. RQ5 delves into the document types across subject areas of research. RQ6 aims to identify the top journal publications and the number of articles they have published. RQ7 investigates the authors of the most cited articles and summarizes their research contributions. RQ8 analyzes the most frequently used keywords in previous articles. Finally, RQ9, RQ10, and RQ11 explore bibliographic coupling networks by authors, sources, and countries, respectively, providing insights into the interconnectedness and collaboration within this research domain.

This paper follows a logical organization. Section 1 initiates with a comprehensive exploration of environmental consciousness in online shopping. Section 2 delves into a detailed review of relevant literature. Section 3 expounds upon the research methodology applied for the metadata analysis. Section 4 synthesizes the results and engages in a nuanced

discussion of metadata analysis and bibliometric insights. Finally, Section 5 concludes the paper, offering insights into future research directions and acknowledging the study's limitations.

2. LITERATURE REVIEW

2.1 Environmental consciousness and online shopping

Environmental concern, defined as "an affective attribute that can present a person's worries, compassion, likes, and dislikes about the environment" [9], plays a pivotal role in consumer decision-making processes. This sentiment is particularly evident in the realm of organic food purchases, where, Grunert [10] identified environmental concern as a key determinant. Moreover, Bang et al. [11] established a positive association between consumers' emotional involvement with environmental issues and their willingness to pay for renewable energy. Lee [12] reinforced this perspective, highlighting environmental concern as a robust determinant of environmentally responsible behavior.

The concept of environmental concern extends beyond a mere affective evaluation, encompassing a consumer's emotional stance on environmental issues [12]. Frequently conceptualized as a precursor to environmental purchase intentions, researchers have explored the relationship between environmental concern and consumers' preparedness to support environmentally friendly firms [13]. However, the magnitude of this relationship remains inconsistent, giving rise to questions about the equivocal role of environmental concern in environmental purchasing decisions [14-16].

In light of these inconsistencies, an emerging issue in the literature is the exploration of whether environmental consciousness plays a significant role in online product purchases or purchase intentions for consumers. This inquiry seeks to unravel the dynamics of environmental concern in the context of the evolving landscape of online shopping.

Online shopping, a broad term encompassing the promotion and purchase of products/services through the internet and digital technology, diverges from traditional marketing approaches [17]. It is characterized by elements of enjoyment, playfulness, and minimal effort, offering competitive prices, time efficiency, and the convenience of browsing a diverse array of products [18]. The utilitarian value of online shopping lies in its facilitation of easy, transparent, and efficient transactions, saving consumers time and effort [19].

Despite these advantages, environmental considerations come into play, especially as online shopping has been found to have a lower carbon footprint than traditional shopping. Research from MIT [20] indicates that traditional shopping incurs a carbon footprint twice as large as that of online shopping. However, the environmental impact of online shopping is contingent on various factors, including consumer behavior, transportation, and packaging. Factors such as the customer's location and choice of transportation significantly influence the carbon footprint of traditional shopping [21]. Moreover, issues like increased returns and additional packaging contribute to the negative environmental impact of e-commerce. While online shopping can be more environmentally friendly than traditional retail, it is crucial to consider the entire buying process and make sustainable choices to minimize its environmental impact [22].

The environmental impact of online shopping has been

explored from various perspectives, revealing both advantages and challenges. Traditional shopping has a carbon footprint twice that of online shopping, indicating a potential environmental benefit of the latter [23]. Rai [7] supported this by estimating and comparing the carbon footprints across different consumer behaviors and supply chain configurations, finding that online shopping is often the most environmentally friendly option. However, Argyridou [23] presented a more nuanced view, noting that online shopping results in five times more product returns and significantly higher emissions from packaging compared to brick-and-mortar stores. These returns, as examined by Tian and Sarkis [24], can contribute to over 30% of carbon emissions in online shopping, complicating the overall environmental assessment. For a further analyze shopping behaviors across demographics, affirming that while online shopping generally has a lower carbon footprint, its environmental impact remains substantial [8]. Lastly, Zafar et al. [25] investigated the role of social media in promoting environmentally conscious consumption, finding that trust in social media and perceived environmental effectiveness significantly influence sustainable purchasing attitudes. Together, these studies provide a comprehensive view of the environmental implications of online shopping, highlighting both its potential benefits and areas needing improvement.

3. METHODOLOGY

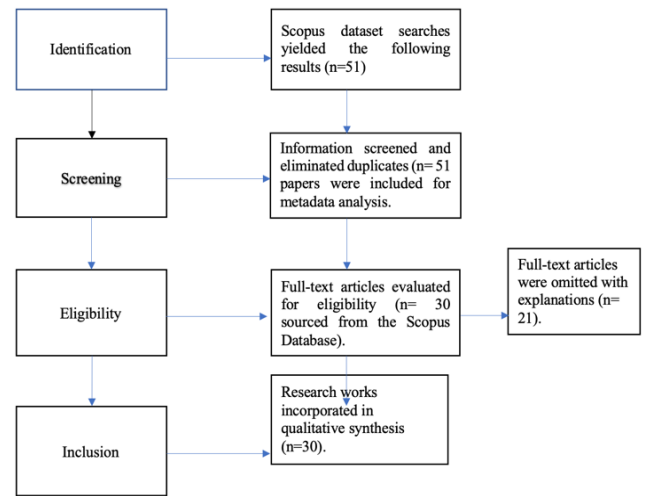
In this study, the selected dataset undergoes analysis using a science mapping method, a technique employed for scrutinizing existing literature that involves the examination of bibliographic data from a designated field of study [25]. Bibliometric analysis is instrumental in mapping extensive scientific literature [26], and it adheres to a systematic approach akin to systematic literature reviews, employing rigorous techniques to ensure the quality of information and output results [27]. VOSviewer version 1.6.20 software is employed by the author to construct and visualize linkages of bibliometric sources, identifying top authors, affiliations, and sources from the Scopus databases to extract refined information.

A second analysis is conducted using a Systematic Literature Review (SLR), which provides an objective, replicable, scientific, comprehensive, and transparent method for empirical research through a search of existing literature on key issues [28]. The study adopts the Preferred Reporting Items for Systematic Review (PRISMA) standard. According to Kitchenham and Charters's study [29], three primary aspects of systematic reviews—planning, conducting, and reporting—are followed in this study, encompassing the identification of resources, study selection, data extraction, data synthesis, and report writing, as recommended by Kitchenham and Charters [29] and Kitchenham [30].

Additionally, through an SLR, researchers and practitioners in the management field can gain further information and knowledge on specific subjects that align with their cognitive, social, and political demands [31]. With these considerations in mind, this research employs a systematic approach to collect data and categorize literary articles based on content analysis and potential research areas. In summary, the Prisma technique is employed in this study (Figure 1), involving the location of data, review of foundational data, addressing eligibility issues, and ultimately incorporating the data.

The search database or data, sourced from the Scopus

database for meta-data evaluation, are considered reliable by many researchers [32]. The purpose of gathering this data is to provide unique knowledge and research ideas for upcoming studies.



Source: Moher et. Al. (2009)

Figure 1. Four steps systematic method used in this study

3.1 Data extraction

Data from major publishers such as Scopus, Wiley, Emerald, Springer, Taylor & Francis were amalgamated using datasets for this study. The search encompassed scientific publications released between 2011 and 2023. The study's introduction emphasized keywords like "environmental consciousness" and "online shopping." The initial search terms comprised the paper's title, abstract, and keywords, chosen to enhance the coherence among articles and facilitate the identification of relevant papers. These keywords were deemed highly appropriate for selecting primary articles for inclusion, aligning with the central theme of environmental concern in this paper. Subsequently, specific criteria were adhered to for a more intuitive and efficient search process, like ((environmental AND consciousness) AND (online AND shopping)) AND (LIMIT TO (EXACTKEYWORD , "Sustainability") OR LIMIT TO (EXACTKEYWORD , "Environmental Concern") OR LIMIT TO (EXACTKEYWORD , "Sustainable Consumption") OR LIMIT-TO (EXACTKEYWORD , "Online Shopping") OR LIMIT TO (EXACTKEYWORD, "Environmental Consciousness") OR LIMIT TO (EXACTKEYWORD, "E-commerce") OR LIMIT TO (EXACTKEYWORD, "Environmental Impact") OR LIMIT TO (EXACTKEYWORD, "Environmental Knowledge") OR LIMIT TO (EXACTKEYWORD, "Green Purchase Intention") OR LIMIT TO (EXACTKEYWORD, "Shopping Activity") OR LIMIT TO (EXACTKEYWORD, "Electronic Commerce")) AND (LIMIT-TO (SUBJAREA, "BUSI")) AND (LIMIT TO (DOCTYPE, "ar")) AND (LIMIT-TO (LANGUAGE, "English")) AND (LIMIT-TO (SRCTYPE, "j")) AND (LIMIT-TO (PUBSTAGE, "final")) AND (LIMIT TO (OA, "all")). The results of the initial Scopus search engine are displayed below (Table 1).

The selection criteria for the included studies, as outlined in the flowchart "Figure 1: Four steps systematic method used in this study," involve a multi-step process. Initially, studies are identified through extensive searches of databases, journals, and other sources. This is followed by a screening phase where

studies are filtered based on predefined inclusion and exclusion criteria, involving a review of titles, abstracts, and keywords. Next, in the eligibility phase, the full texts of the screened studies are thoroughly assessed to ensure they meet the required standards of relevance, methodological soundness, and pertinence to the research question. Finally, only those studies that pass the eligibility criteria which are 30, are included in the systematic review for final analysis and synthesis of findings.

Table 1. Results of the initial Scopus search engine

Keyword	Source	Findings (Article Numbers)	Limitation Up to
"Environmental Consciousness" AND "Online Shopping"	Scopus	51	Title, abstract, keywords

4. RESULTS

The results of the study are discussed below based on the research questions.

4.1 Publications by year

This bibliometric examination, drawn from the Scopus database, delineates in Figure 2, the distribution of publications across various years. The year 2023 stands out with the highest number of publications, totaling 15, followed by 2022 with 12 publications. The years 2021, 2020, and 2019 demonstrate moderate scholarly output with 6, 4, and 5 publications respectively. Moreover, publications from 2018, 2016, 2015, and 2014 are comparatively fewer, each with only one publication, while 2012 contributes two publications. These findings illuminate the temporal trends in scholarly output within the analyzed dataset, shedding light on the evolving landscape of research over time.

4.2 Publication by author

This bibliometric analysis, sourced from the Scopus database, presents the distribution of publications among

various authors. Notably, the authors in Figure 3 such as Dhir, A., Durif, F., Flavián, C., Lombart, C., and Louis, D., each contribute two publications, indicating a significant scholarly output. Additionally, several authors, including Abosag, I., Adams, M., Adıgüzel, F., Afonso, C., and Agag, G., have each contributed one publication to the field. These findings offer insights into the individual research contributions within the scope of the study, demonstrating the diverse participation of authors in generating scholarly content.

4.3 Top publications by the institution

This bibliometric study, based on data extracted from the Scopus database, Figure 4 reveals the distribution of publications among various affiliations. Notably, Audencia Business School leads with three publications, followed by several institutions each contributing two publications, including WU Vienna University of Economics and Business, University of Johannesburg, Nottingham Trent University, Universidad de Zaragoza, North-West University, Nantes Université, Universitetet i Agder, Laboratoire d'Économie et de Management de Nantes-Atlantique, Symbiosis Institute of Business Management, Pune, École des Sciences de la Gestion, Nottingham Business School, Foreign Trade University each with two publications. These findings provide insight into the scholarly output of different affiliations within the context of the study.

4.4 Distribution of articles by countries

This bibliometric analysis in Figure 5, sourced from the Scopus database, delineates the distribution of publications across different countries. The United Kingdom emerges as the leading contributor with ten publications, followed by the United States with seven publications. India and France demonstrate significant scholarly output with six and five publications respectively, while South Africa, China, Germany, and Norway each contribute four publications. Furthermore, Australia and Italy are noted for their scholarly contributions, each with three publications. These findings illuminate the geographic distribution of research output within the analyzed dataset, highlighting the diverse international landscape of scholarly communication.

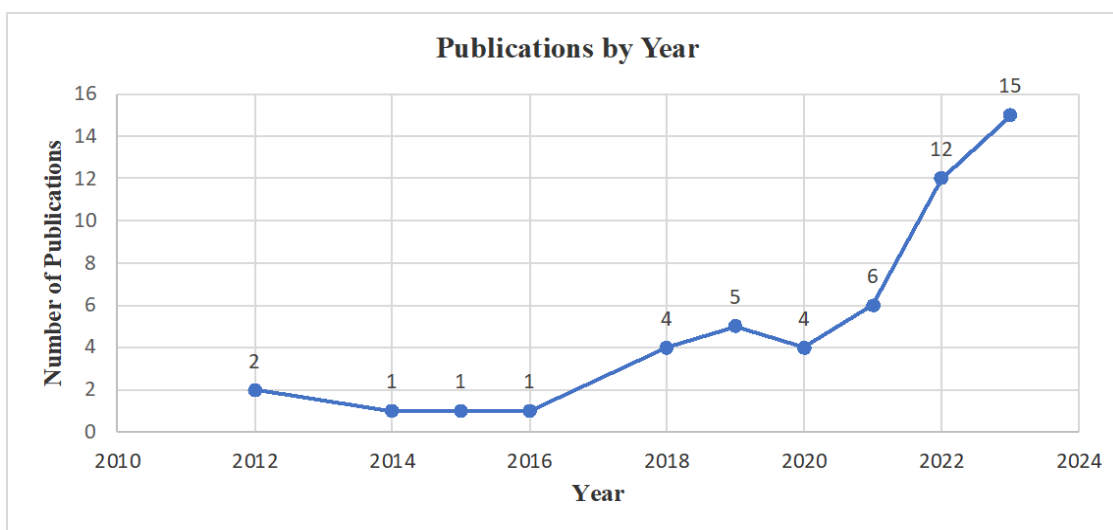


Figure 2. Publication by years

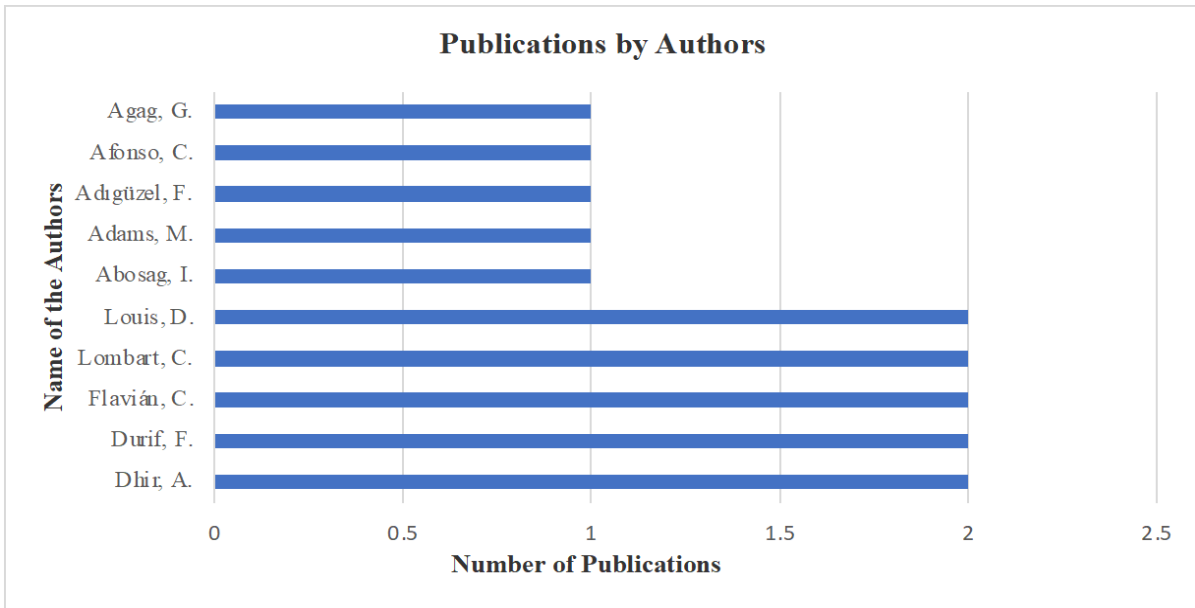


Figure 3. Publication by authors

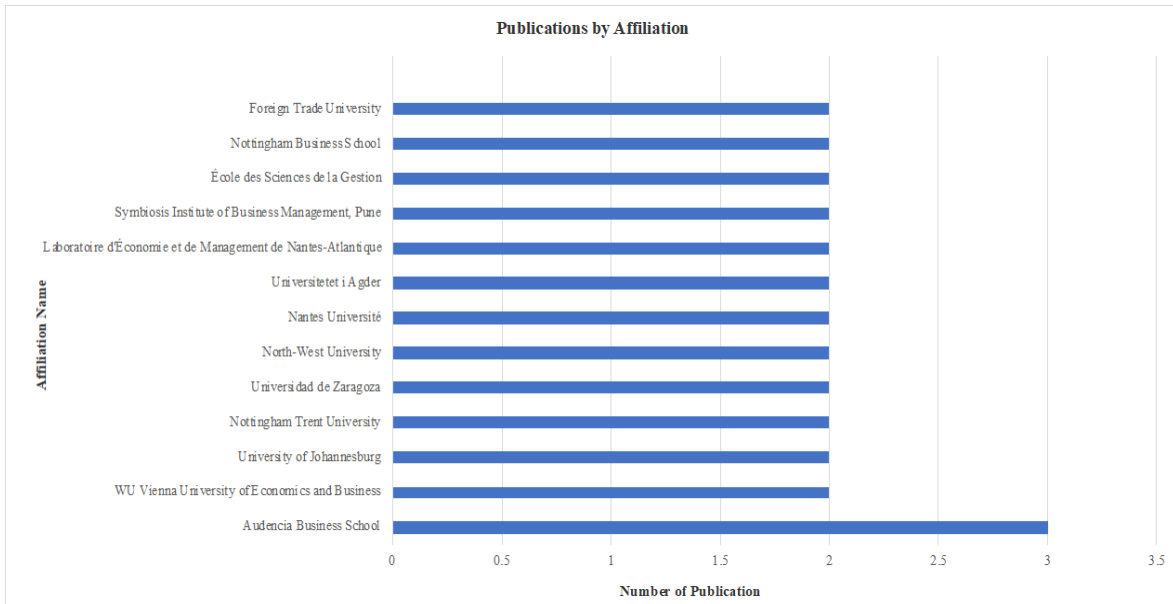


Figure 4. Top publication by the institution

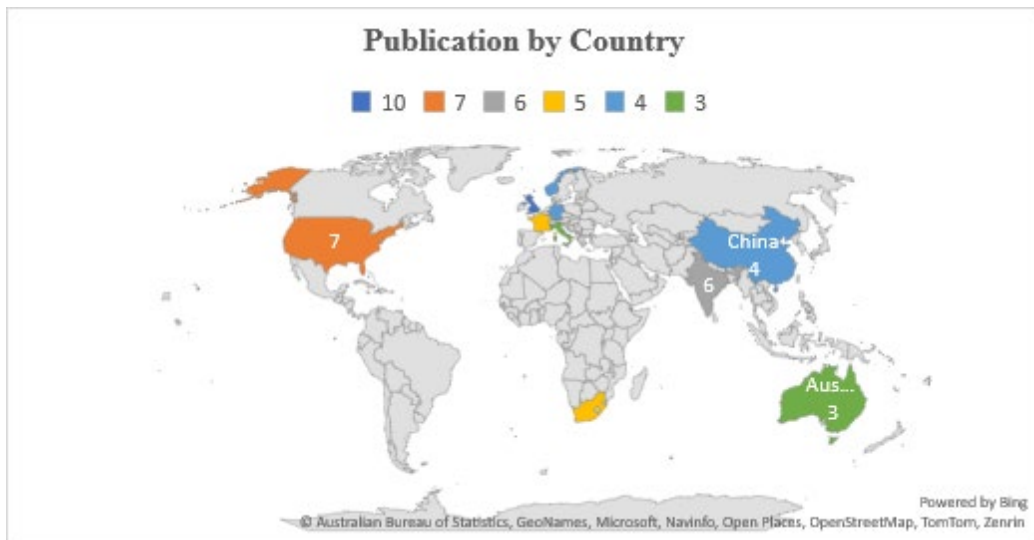


Figure 5. Distribution of articles by countries

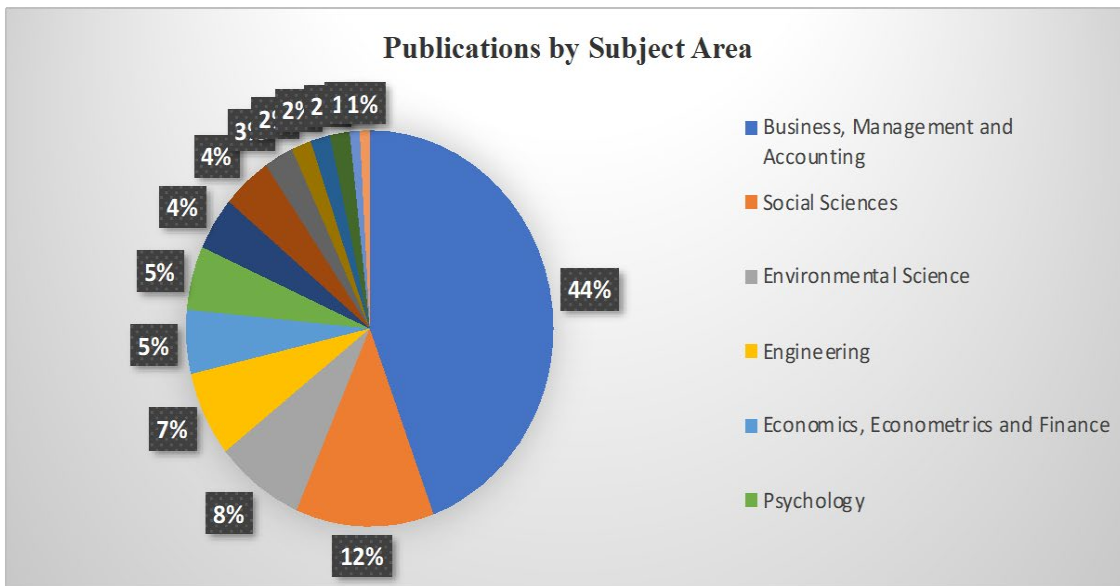


Figure 6. Publications by discipline

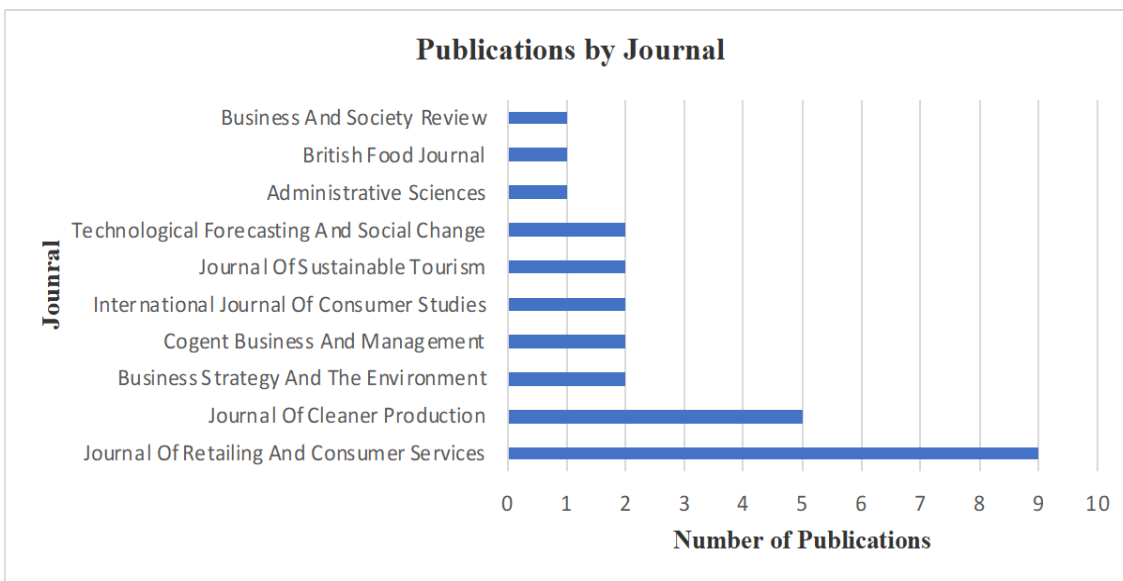


Figure 7. Publications by journals

4.5 Articles and contribution according to discipline

The incorporation of numerous disciplines in the online shopping literature underscores their importance and recognition within the academic realm. Figure 6 illustrates that the fields of business, management, and accountancy contributed the highest number of publications, accounting for 44 percent of the total research focus on environmental concerns in online shopping. Having followed that, social sciences came in second with 12 percent of the vote, following environmental science with 10 percent. Other fields, on the other hand, are becoming more interested in the subject.

4.6 Top 10 journal publications and number of articles published

This bibliometric analysis, Figure 7 outlines the distribution of publications across various journals. Notably, the Journal of Retailing and Consumer Services emerges as the leading source with nine publications, followed by the Journal of Cleaner Production with five publications. Additionally,

Business Strategy and the Environment, Cogent Business and Management, International Journal of Consumer Studies, Journal of Sustainable Tourism, and Technological Forecasting and Social Change each contribute two publications. Furthermore, Administrative Sciences, British Food Journal, and Business and Society Review are noted for their scholarly contributions, with one publication each. These findings provide insights into the dissemination of research output across different journals, indicating the diverse platforms utilized by scholars to communicate their findings within the scope of the study.

4.7 Most frequently used words

Figure 8 presents a word cloud generated by software, showcasing prominent words in larger and bolder fonts, while less frequent and fundamental words were displayed in smaller sizes. The word cloud serves as a straightforward method to identify prevalent terms within a complex context, and it can be employed to identify relevant subjects and keywords in publications [33].

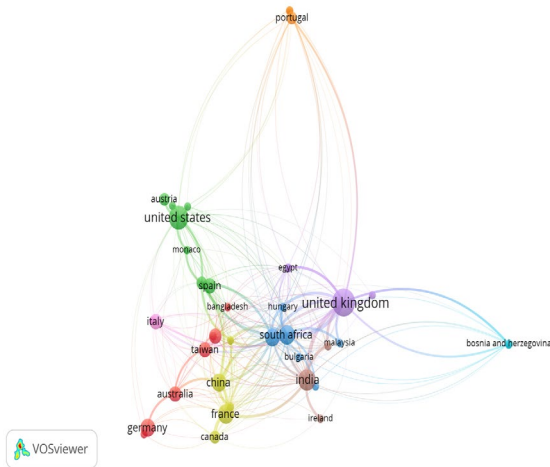


Figure 11. Bibliographic coupling network by countries

5. DISCUSSION

The discussion section of this research paper delves into the multifaceted aspects of environmental consciousness in the context of online shopping. This paper not only focuses on systematic literature review but also included bibliometric review to have a broader aspect of this topic. The overarching goal of the study is to unravel the intricate relationship between environmental awareness and online consumer behavior. The authors undertake a meticulous examination of the field's representation, considering various factors such as journal, publication year, country, and methodological contexts. The study successfully addresses a series of pertinent research questions, shedding light on the trends in publication over the last thirteen years, identifying influential authors, analyzing publishing tendencies, determining key journals, assessing global contributions, and investigating the evolving interconnection between environmental consciousness and online shopping.

The literature review section provides a foundation for understanding the environmental impact of online shopping. From the empirical literature review to this systematic review and bibliometric analysis provide more precise data and visual representation of the review, top authors, countries, sources, keywords, top paper cited and so on. Noteworthy articles such as Argyridou's exploration [23] of the carbon footprint of online shopping compared to traditional shopping, Rai's [7] assessment of the net environmental impact considering various consumer behaviors, and Tian and Sarkis's [24] investigation into the emissions burden of online shopping returns, collectively contribute valuable insights. These studies reveal the complexities of the environmental impact, highlighting that while online shopping generally has a lower carbon footprint, factors such as product returns and packaging must be considered to comprehensively evaluate its ecological footprint [37].

Moreover, the findings extend to the broader context of environmental consciousness in business, emphasizing the significance of companies adopting sustainable practices. The paradox of consumers expressing positive attitudes towards eco-friendly products but hesitating to pay more for them is explored. Insights from behavioral science are proposed as a means to bridge this gap, with a focus on social influence,

habit formation, the domino effect, emotional appeals, and experiential considerations.

The discussion and findings also address the role of environmental concern in online product purchase decisions, drawing attention to the equivocal relationship between environmental consciousness and environmental purchase intentions. This nuanced exploration reflects the need for a deeper understanding of how consumers' attitudes towards environmental issues translate into their actual purchasing behavior in the context of online shopping [38].

The methodological section provides transparency in the research approach, employing a science mapping method and systematic literature review. The integration of bibliometric analysis and systematic review techniques ensures a comprehensive and rigorous examination of the literature, contributing to the reliability of the findings. The use of VOSviewer software aids in visualizing bibliometric connections, highlighting influential authors, affiliations, and sources.

Basically, the overall findings of this research offer valuable insights that align with key theories in consumer behavior and environmental psychology. The study's analysis of online shopping's environmental impact highlights the Theory of Planned Behavior, showing how attitudes and perceived control influence eco-friendly behaviors. It also reflects the Value-Belief-Norm (VBN) theory, illustrating how environmental values shape consumer norms and actions [39]. Despite positive attitudes towards sustainable products, a gap exists between these attitudes and actual purchasing behavior, explained by the Attitude-Behavior Gap theory. The integration of bibliometric analysis with a systematic review reveals trends and key contributions, mapping the intellectual landscape of the field [40]. This research emphasizes the need for sustainable business practices and further studies to bridge gaps, fostering a more environmentally conscious consumer culture.

In summary, this research contributes to the evolving discourse on environmental consciousness and online shopping by providing a comprehensive analysis of the literature landscape. The discussion not only synthesizes key findings from relevant articles but also identifies gaps in existing research, paving the way for future investigations. The integration of behavioral science insights, consideration of global perspectives, and the meticulous methodology enhance the depth and breadth of this study, making it a valuable resource for scholars, practitioners, and policymakers interested in the intersection of environmental awareness and online consumer behavior.

6. CONCLUSION

In conclusion, this research comprehensively explores the interconnection between environmental consciousness and online shopping through a meticulous analysis of literature trends, influential authors, publication tendencies, and bibliometric coupling. The study addresses critical questions related to the progression of research in this field, identifying powerful authors, important journals, contributing countries, and key thematic areas. The findings reveal that online shopping, while generally exhibiting a lower carbon footprint compared to traditional shopping, is influenced by various factors such as consumer behavior, transportation, and packaging.

The research questions in this study have been comprehensively addressed through a systematic and bibliometric review. RQ1 reveals a significant increase in interest in environmental consciousness in online shopping over the past thirteen years. RQ2 and RQ7 highlight the most prolific and influential authors. RQ3 and RQ6 identify leading institutions and journals. RQ4 shows the global distribution of research contributions. RQ5 indicates a diverse range of research outputs, while RQ8 uncovers common themes like sustainability and carbon footprint. Finally, RQ9, RQ10, and RQ11 explore bibliographic coupling networks, showing the interconnectedness among authors, sources, and countries. These findings provide a comprehensive overview of key trends, contributors, and the global nature of this research area.

The analysis also sheds light on the significance of environmental consciousness in shaping consumer preferences and the challenges faced by businesses in promoting sustainable practices. Moreover, the research utilizes rigorous methodologies such as science mapping and systematic literature review to offer a thorough understanding of the present state of research on environmental awareness and online shopping. The identified gaps and future research directions outlined in the study offer valuable insights for scholars and practitioners seeking to further explore this dynamic and critical intersection between environmental awareness and digital commerce.

6.1 Limitations of the study

The research conducted in this article contributes significantly to understanding the interconnection between environmental consciousness and online shopping through a comprehensive analysis of existing literature. However, like any study, it has certain limitations that should be acknowledged.

One notable limitation is the potential bias in the selected dataset. The study relies on a specific timeframe (2011-2023) and specific database which is Scopus and a set of keywords to gather relevant articles, which may inadvertently exclude some valuable contributions outside this scope or those using different terminologies. Consequently, there might be gaps in the coverage of the literature, potentially overlooking crucial insights and perspectives that fall outside the specified criteria.

Another limitation pertains to the reliance on bibliometric analysis. While this method provides valuable insights into trends, influential authors, and publication patterns, it may not capture the depth and nuance of individual research contributions. The bibliometric approach focuses on quantitative measures, and nuances in qualitative aspects of the literature may be overlooked. Additionally, the study does not delve into the quality assessment of the included articles, which could vary in terms of methodology and rigor.

Furthermore, the study primarily focuses on the bibliometric and metadata analysis, potentially neglecting a more in-depth qualitative assessment of the content of the selected articles. While the quantitative analysis provides a broad overview, a more qualitative examination of the literature could offer deeper insights into the nuances and contradictions within the existing body of knowledge on environmental consciousness and online shopping.

In conclusion, while the research successfully achieves its stated objectives and contributes valuable insights to the field, it is essential to recognize these limitations. Future research endeavors could consider addressing these limitations by

adopting a more inclusive approach to literature selection, incorporating a qualitative analysis of the content, and assessing the quality of individual studies to provide a more comprehensive understanding of the interplay between environmental consciousness and online shopping.

6.2 Future research direction

Future research in this field could benefit from a qualitative analysis complementing the current quantitative approach, providing a deeper understanding of individual study nuances. Extending the temporal scope for a more comprehensive longitudinal analysis would offer insights into evolving trends and influential contributors. Exploring interdisciplinary aspects by integrating insights from environmental science, consumer behavior, marketing, and sustainability studies could yield a holistic understanding. In-depth case studies focusing on specific instances of environmental initiatives within online shopping platforms could provide context-rich perspectives.

Future studies can consider other database for example Web of Science and can include more than twenty and thirty years to do comprehensive literature review. Further investigations into psychological and sociological factors influencing consumer behavior, considering trust in e-commerce platforms, social media, and personal values, would enhance the understanding of sustainable purchasing attitudes. Assessing geographical and cultural influences, exploring the role of emerging technologies, examining policy implications, and synthesizing practical recommendations for businesses are all promising avenues for advancing research in the interplay between environmental consciousness and online shopping.

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APPENDIX

Table A1. Topmost cited papers with the summary

Title	Source Title	Year	Authors	Cited by	Publisher	Author Keywords	Summary
Re-examining green purchase behaviour and the green consumer profile: New evidences	Management Decision	2012	Akehurst G.; Afonso C.; Gonçalves H.M.	339	Emerald Group Holdings Ltd.	Demographics; Ecological consciousness; Green consumer behaviour; Green consumer profile; Green marketing; Green purchase behaviour; Green purchase intention; Psychographics	This paper re-examines the determinants of ecologically conscious consumer behaviour (ECCB) and effective green purchase behavior (GPB) using an online survey. The study found that psychographic variables, such as perceived consumer effectiveness and altruism, are more relevant than socio-demographics in explaining ECCB. Consumers with higher ECCB have higher GPI, which in turn mediates the relationship. The study provides a comprehensive understanding of green consumer profiles and behavior, enabling organizations to respond better to new management challenges and coordinate future marketing strategies. The Technology Acceptance Model (TAM) is a useful framework for understanding technology adoption. This study analyzes e-government service adoption and suggests that trust and personal values play a role. Trust is integrated into the TAM due to uncertainty in online contexts. Time consciousness and environmental concern are proposed as moderators. These findings have implications for public administration strategic marketing.
Integrating trust and personal values into the technology acceptance model: The case of e-government services adoption	Cuadernos de Economía y Dirección de la Empresa	2012	Belanche D.; Casalo L.V.; Flavián C.	139	Elsevier Doyma	E-government services; Environmental concern; Technology acceptance model; Time consciousness; Trust	This study analyzes e-government service adoption and suggests that trust and personal values play a role. Trust is integrated into the TAM due to uncertainty in online contexts. Time consciousness and environmental concern are proposed as moderators. These findings have implications for public administration strategic marketing.
Green spirit: Consumer empathies for green apparel	International Journal of Consumer Studies	2014	Cowan K.; Kinley T.	83	Blackwell Publishing Ltd	Apparel; Eco; Environmentally friendly apparel; Green; Sustainability; Theory of planned behaviour	This study explores factors influencing environmentally friendly apparel purchase intentions using the theory of planned behavior. Factors include environmental

Powering Sustainable Consumption: The Roles of Green Consumption Values and Power Distance Belief	Journal of Business Ethics	2021	Yan L.; Keh H.T.; Wang X.	48	Springer Science and Business Media B.V.	Green products; Power distance belief; Social power; Sustainable consumption	<p>knowledge, concern, attitudes, social pressure, environmental guilt, and normative influence. Data from 220 American adults showed that individual attitudes, environmental knowledge, social pressure, environmental guilt, perceived environmental impact, past purchases, accessibility, and cost all impact purchase intentions. Previous purchases, attitudes, and social pressure are the strongest indicators of future environmentally friendly behavior.</p> <p>This research explores how power affects consumers' preference for green products, revealing that low power increases green consumption compared to high power. The main effect of power on green consumption is more significant among those with high green consumption values. The effects of power are dynamic and influenced by power distance belief (PDB). These findings offer insights into green consumption from social power, green values, and PDB, influencing marketers and policy-makers.</p> <p>This study explores tourists' sustainable consumption values and choices regarding green products in Europe, integrating Theory of Planned Behavior and Consumption Values. Using 720 questionnaires from two European tourist groups, the study found that environmental attitudes, knowledge, subjective norms, perceived behavioral control, conditional value, and emotional value significantly influence green purchase intentions. This is the first empirical study to provide a theoretical framework for green purchase choices.</p> <p>This paper investigates the impact of mandatory eco-labels on consumer behavior, focusing on two quasi-experimental studies. The studies used a traffic light-shaped eco-label to manipulate environmental information, focusing on respondents' purchasing intentions, perceptions of environmental harmfulness,</p>
Green purchase and sustainable consumption: A comparative study between European and non-European tourists	Tourism Management Perspectives	2022	Nekmahmud M.; Ramkissoon H.; Fekete-Farkas M.	45	Elsevier B.V.	Green products; Multi-group analysis (MGA); Sustainable consumption; Sustainable tourism; Theory of consumption values; Theory of planned behaviour	<p>environmental attitudes, knowledge, subjective norms, perceived behavioral control, conditional value, and emotional value significantly influence green purchase intentions. This is the first empirical study to provide a theoretical framework for green purchase choices.</p> <p>This paper investigates the impact of mandatory eco-labels on consumer behavior, focusing on two quasi-experimental studies. The studies used a traffic light-shaped eco-label to manipulate environmental information, focusing on respondents' purchasing intentions, perceptions of environmental harmfulness,</p>
Shoppers' grocery choices in the presence of generalized eco-labelling	International Journal of Retail and Distribution Management	2015	Bernard Y.; Bertrandias L.; Elgaaied-Gambier L.	40	Emerald Group Holdings Ltd.	Environmental concern; Environmental labelling; Familiarity; Perceived harmfulness; Price sensitivity; Pro-environmental consumer behaviour	<p>environmental attitudes, knowledge, subjective norms, perceived behavioral control, conditional value, and emotional value significantly influence green purchase intentions. This is the first empirical study to provide a theoretical framework for green purchase choices.</p> <p>This paper investigates the impact of mandatory eco-labels on consumer behavior, focusing on two quasi-experimental studies. The studies used a traffic light-shaped eco-label to manipulate environmental information, focusing on respondents' purchasing intentions, perceptions of environmental harmfulness,</p>

Factors affecting green purchase behavior: A systematic literature review	Business Strategy and the Environment	2023	Sharma K.; Aswal C.; Paul J.	22	John Wiley and Sons Ltd	attitude; environmental consumption behavior; green purchase behavior; green purchase intention	and individual characteristics. Results showed that the presence of an eco-label influences consumers' beliefs about products' environmental harm and choice. The study also confirmed the influence of familiarity with environmental information on product categories like dish soap and paper towels. The research highlights the need for careful interpretation due to the use of fictive eco-labels. The increasing global consumption of goods and services is causing environmental damage. As people's preference for green products increases, a systematic literature review of 151 studies on green purchase intention and behavior was conducted. This study provides strategic insights for marketers to create better marketing opportunities for green products. This study explores the motivation and intent of male consumers in South Africa to acquire eco-friendly apparel. Based on the Norm-Activation Theory and Theory of Planned Behaviour, the research reveals that awareness of environmental consequences influences their behavior. Social and moral norms did not significantly influence their decisions. Attitudes and self-efficacy contributed to their pro-environmental intent, but controllability was not a significant predictor. The findings suggest the need for intervention strategies to promote pro-environmental apparel behavior in emerging markets. This paper proposes that the assessment of sustainable products by consumers is enhanced when online stores offer zoom-in features and eco-labels possess high design quality but low feature complexity. Design intricacy enhances perceptual fluency, whereas feature complexity heightens conceptual fluency. Consequently, eco-labels should be visually appealing, easy to comprehend, and prominently displayed.
Factors motivating male consumers' eco-friendly apparel acquisition in the South African emerging market	International Journal of Consumer Studies	2018	Taljaard H.; Sonnenberg N.C.; Jacobs B.M.	22	Blackwell Publishing Ltd	eco-friendly apparel/clothing; norm-activation theory; pro-environmental intent; sustainability; theory of planned behaviour	
Visual complexity of eco-labels and product evaluations in online setting: Is simple always better?	Journal of Retailing and Consumer Services	2022	Donato C.; Adigüzel F	18	Elsevier Ltd	Design and feature complexity; Eco-label; Processing fluency; Sustainable products; Zoom-in feature	

Packaging-free products: A lever of proximity and loyalty between consumers and grocery stores	Journal of Retailing and Consumer Services	2021	Louis D.; Lombart C.; Durif F.	18	Elsevier Ltd	Food waste; Loyalty; Packaging-free products; Plastic waste; Proximity; Satisfaction; Trust	The study explores the impact of bulk product purchases on retailers and stores, focusing on perceived proximity, transactional loyalty, and relational loyalty. A total of 1407 buyers and consumers from a convenience store were surveyed. The research found that unpacked products are a strategic tool for retailers to strengthen relationships with customers, with the consumer's purchase process directly impacting the established relationship.
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