

# Exploring Trends in Greenwashing Research Through Bibliometric Analysis

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## Abstract:

This paper conducts a comprehensive bibliometric analysis focusing on greenwashing, the deceptive practice of conveying misleading environmental claims. We meticulously extracted data from Scopus, examining scholarly works published between 2010 and 2023. Employing specific search criteria, including English-language articles of various types, we aimed to capture a holistic view of the scholarly landscape surrounding this critical environmental issue. Our investigation utilized a Title-Abstract-Keyword search strategy, targeting publications with keywords such as "Greenwashing," "Green Advertising," "Greenwashing Impact," and "Greenwashing Perception." Through this approach, we sought to identify trends in publication output, citation patterns, author affiliations, keyword analysis, and thematic clusters. Our findings shed light on the evolution of research on greenwashing, highlighting its interdisciplinary nature and revealing emerging areas of inquiry. Notably, we observed a gradual increase in publication output over the years, indicating a growing interest in this subject among researchers. Citation patterns uncovered influential works and authors in the field, while keyword analysis identified key themes and concepts driving research on greenwashing. This paper contributes significantly to scholarly discourse by consolidating existing knowledge, identifying research gaps, and providing valuable insights for future investigations aimed at addressing deceptive environmental practices within corporate environments. By synthesizing the available literature and offering directions for further inquiry, we aim to advance understanding and ultimately combat greenwashing for the betterment of society and the environment.

**Keywords:** Greenwashing, Bibliometric analysis, Trend analysis, Green advertising, Greenwashing Perception.

## 1. Introduction:

Research has underscored the necessity for thorough investigations into the evolution and ramifications of greenwashing on various stakeholders (Santos et al., 2023). Greenwashing, characterized by misleading stakeholders through deceptive environmental claims, carries substantial environmental consequences (de Freitas Netto et al., 2020). Greenwashing undermines authentic sustainability endeavors by fostering an illusion of environmental responsibility without implementing substantive green practices. Greenwashing can hinder the advancement of a circular economy and sustainable development, impeding progress toward sustainable consumption and production practices (Choudhury et al., 2023). Greenwashing significantly influences consumer attitudes and intentions, particularly in purchase behavior, as it challenges authentic green companies to distinguish themselves in the market (Santos et

al., 2023). Greenwashing carries legal and regulatory implications, potentially leading to civil lawsuits, criminal liabilities, and regulatory penalties for companies involved in deceptive environmental claims (Montgomery et al., 2023).

Numerous studies have employed bibliometric analysis to chart the scholarly research on greenwashing practices and behavior. The analysis unveiled a gradual uptick in research concerning greenwashing practices, highlighting a concentration of influential work among a select group of research scholars, notably after 2007. The United States leads scholarly inquiry in this domain, closely followed by the United Kingdom, with significant collaborations observed with researchers from Europe and Asia. The studies underscore the necessity for more extensive and rigorous research on the evolution of greenwashing methods, offering insights into potential future research areas and opportunities for collaboration (Pendse et al., 2023).

Bibliometric analysis is a quantitative approach employed to conduct literature reviews and gain insights into the current state of literature through quantitative methods (Marvi et al., 2023). Bibliometric analysis is facilitated by databases like Web of Science, Scopus, Google Scholar, and Dimensions, each with its own historical background, coverage, and key metrics (Bauer et al., 2020). Recent trends in bibliometric analysis research encompass the evolution and expansion of bibliometrics as a field of study, the adoption of novel methodologies and alternative metrics to offer insights into research impact at more detailed and global scales, and the exploration of thematic profiles of researchers' publications within the most promising research domains (Danesh et al., 2020). Scopus is extensively utilized for research assessments, studies of research landscapes, evaluations of science policies, and university rankings, underscoring its credibility and relevance for large-scale analyses (Baas et al., 2020). Scopus serves as a valuable source of bibliometric data, providing extensive author and institution profiles, along with indicators like CiteScore and SNIP for assessing journals (Semina et al., 2022).

Biblioshiny is a bibliometric analysis tool that provides a variety of features for quantitatively assessing academic output, research teams, and individual researchers in the scientific domain (Sillet et al., 2013). (Ball et al., (2017) offer strategies on how bibliometrics can be applied to scientific activity, making it user-friendly and easily understandable for users. Compared to other bibliometric analysis tools, Biblioshiny stands out for its comprehensive set of techniques tailored for practitioners, accessible through its user-friendly interface. This makes it a valuable tool for conducting bibliometric analyses (Moral-Muñoz et al., 2020).

In recent years, the use of bibliometric analysis has become increasingly prevalent in scholarly research, offering valuable insights into the state and evolution of research within various domains. By leveraging quantitative techniques to analyze publication trends, citation patterns, and collaboration networks, bibliometric analysis provides researchers with a systematic and objective means of evaluating research output and impact. One of the key advantages of bibliometric analysis is its ability to identify influential works and authors within a given field. By examining citation patterns and citation metrics such as h-index and citation counts, researchers can identify seminal works and leading scholars whose contributions have had a significant impact on the advancement of knowledge within their respective disciplines. This information can be invaluable for researchers seeking to identify key trends and developments within their field, as well as for funding agencies and policymakers looking to allocate resources effectively. Moreover, bibliometric analysis can provide valuable insights into patterns of collaboration and knowledge exchange within a given research community. By examining co-authorship networks and institutional affiliations, researchers can identify collaborative clusters and partnerships that may be

driving innovation and advancing the frontier of knowledge within a particular field. This information can be useful for fostering interdisciplinary collaboration and facilitating the exchange of ideas and expertise across different research groups and institutions.

In an era characterized by increasing environmental consciousness and corporate accountability, our analysis serves as a vital tool for researchers, policymakers, and practitioners alike. By delineating the contours of the greenwashing landscape, we empower stakeholders to navigate the complexities of environmental discourse with clarity and insight.

## 2. Research Methodology:

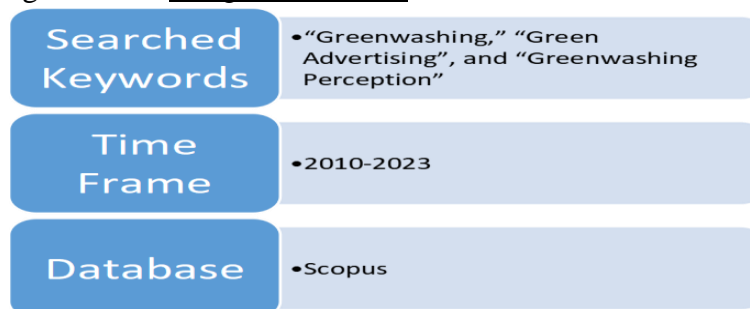
The methodology employed in this research paper integrates quantitative analysis, citation analysis, and visualization techniques to offer a comprehensive examination of greenwashing research. By leveraging bibliometric tools and techniques, we aim to contribute to scholarly discourse, identify research gaps, and provide valuable insights for future investigations in this critical area of study.

We first engage in identification and acquisition to assemble the literature on Greenwashing. In our quest for understanding within the domain of greenwashing, our inquiry is guided by the following research questions (RQs):

1. Explore the evolution of research publications on greenwashing and analyze citation trends from 2010 to 2023.
2. Who are the contributors to greenwashing research?
3. What are the prevalent themes and subjects within greenwashing research?
4. Where might future endeavors in greenwashing research be directed?

Moreover, the meticulous process of identifying greenwashing research necessitates careful consideration of both source type and source quality. In this regard, journals are selected as the primary source type due to their stringent peer-review process, which signifies a high level of scrutiny and scholarly rigor (Lim,2022). As for the source quality, we have opted for Scopus, which indexes sources meeting stringent quality criteria. Scopus serves a dual purpose: it not only indexes high-quality sources but also functions as a search tool for acquiring articles (Paul et al.,2021)

For acquisition, our reliance rests on Scopus, serving both as the search mechanism and the tool for material acquisition. This strategic choice aligns seamlessly with prevailing recommendations, of (Paul et al.,2021) ensuring comprehensive coverage and access to a diverse array of scholarly materials within the domain of greenwashing research. The search period was judiciously restricted to encompass articles published up to 2023, thereby reflecting the latest complete year at the time of review. This methodological approach ensures a more precise assessment of yearly performance, aligning seamlessly with contemporary review practices and facilitating a comprehensive understanding of recent developments in the field of greenwashing research. (Singh et al.,2023).



**Fig. 1 Source: Author’s Creation**

The process commenced with sourcing articles from the Scopus database, utilizing keywords such as "Greenwashing," "Green Advertising," and "Greenwashing Perception" spanning the timeframe of 2010-2023. Initially, a total of 1446 articles were identified. Subsequently, a subject-specific filter was applied, yielding 664 articles. Further refinement focused on isolating research articles, resulting in a reduced count of 499. Selection criteria were then meticulously applied to include only English-language articles, further narrowing the selection to 489 articles. Additionally, priority was given to promoting broader access to knowledge by selecting Open Access articles, culminating in a final dataset comprising 161 articles. Throughout this curation process, strict adherence to stringent criteria ensured the selection of high-quality, scholarly articles pertinent to greenwashing within the specified timeframe. These meticulous steps were undertaken to foster the creation of a robust dataset conducive to comprehensive analysis and scholarly inquiry.

**Data Extraction:** The bibliographic details extracted from the literature have been compiled into a CSV file, encompassing information like publication titles, authors, publication years, journal/conference names, abstracts, keywords, and citation counts.

For **data analysis**, quantitative methods using bibliometric techniques will be employed in R Studio software. The Bibliometrics program and Biblioshiny package will facilitate further exploration and examination of the dataset.

It Involves:

1. **Descriptive Analysis:** Descriptive analysis to evaluate publication counts, citation counts, and basic statistics, providing insights into research productivity within the greenwashing field
2. **Citation Analysis:** Citation analysis was conducted to identify highly cited publications and influential authors, shedding light on the impact of specific papers and individuals in greenwashing research.
3. **Visualization:** visualization techniques, including thematic mapping analysis, were employed to uncover patterns and trends within the dataset. Thematic mapping allowed us to identify clusters of co-occurring themes and understand their interconnectedness and significance. By segmenting time intervals, we traced the trajectory of themes, providing insights into evolving patterns within the thematic landscape.

### 3. Findings of the study:

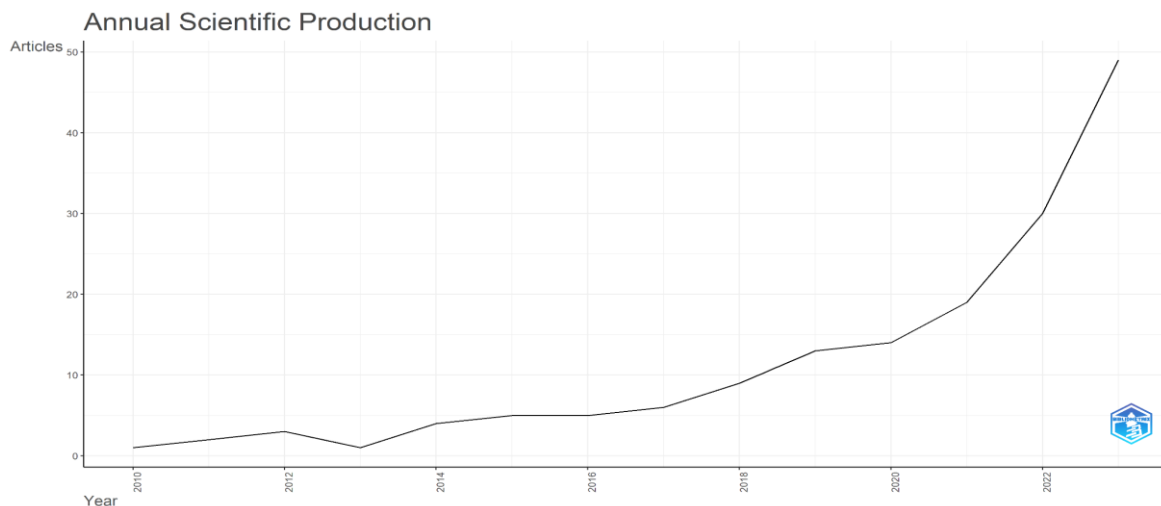
#### 3.1 Performance of Greenwashing Research

The data presented delineates a compelling trajectory in research concerning greenwashing over the specified years. Notably, the progression exhibits a discernible upward trend, indicative of a burgeoning interest and scholarly inquiry into this pertinent phenomenon. Commencing with a modest figure of one research publication in 2010, the subsequent years unveil a steady ascent in scholarly contributions, underscored by incremental values, until reaching a zenith of 49 publications in 2023. This numerical escalation signifies a growing acknowledgment and examination of greenwashing practices within academic circles, corroborating its status as a subject of escalating significance. The consistent augmentation underscores the heightened scrutiny and awareness surrounding corporate environmental claims, thereby elucidating a trajectory of increasing scholarly engagement and inquiry to comprehensively understand and address this complex facet of corporate behavior.

Year	Documents
2010	1
2011	2
2012	3
2013	1
2014	4
2015	5
2016	5
2017	6
2018	9
2019	13
2020	14
2021	19
2022	30
2023	49

**Table 1**

The graph illustrates a notable upward trend in the number of articles published over the years. As depicted, there is a discernible increase in the quantity of articles published from earlier years to more recent ones. This upward trajectory underscores a growing interest and engagement in greenwashing research over time, highlighting its rising significance within academic discourse. The X-axis represents the year of publication, and the Y-axis represents the number of articles published.



**Fig. 2 Source: Biblioshiny R software**

**3.2 Most Influential Author’s Work i.e contributors to greenwashing research**

The table presents significant contributions to greenwashing research by influential authors. Notable works include Font X's exploration of corporate social responsibility and green advertising, Matthes J's studies on greenwashing effects, and Alamsyah DP's analysis of responsible marketing. Additionally, Li W and De Giacomo MR offer insights into consumer perceptions and corporate environmental performance, respectively. Shin S contributes to understanding consumer responses and advertising effectiveness, while Matthes J examines the impact of greenwashing claims in airline advertising. These studies collectively deepen our understanding of greenwashing's implications for consumer behavior and corporate practices.

Author	Year	Title	DOI	Total Citation	Total Citation PY
FONT X	2012	CORPORATE SOCIAL RESPONSIBILITY: THE DISCLOSURE-PERFORMANCE GAP	10.1016/j.tourman.2012.02.012	234	18.000
MATTHES J	2018	MISLEADING CONSUMERS WITH GREEN ADVERTISING? AN AFFECT-REASON-INVOLVEMENT ACCOUNT OF GREENWASHING EFFECTS IN ENVIRONMENTAL ADVERTISING	10.1080/00913367.2018.1452652	193	27.571
FONT X	2017	GREENHUSHING: THE DELIBERATE UNDER COMMUNICATING OF SUSTAINABILITY PRACTICES BY TOURISM BUSINESSES	10.1080/09669582.2016.1158829	114	14.250
FONT X	2014	VOLUNTEER TOURISM, GREENWASHING AND UNDERSTANDING RESPONSIBLE MARKETING USING MARKET SIGNALLING THEORY	10.1080/09669582.2013.871021	108	9.818

ALAMSYAH DP	2020	THE AWARENESS OF ENVIRONMENTALLY FRIENDLY PRODUCTS: THE IMPACT OF GREEN ADVERTISING AND GREEN BRAND IMAGE	10.5267/j.msl.2020.2.017	64	12.800
LI W	2023	EFFECTS OF GREENWASHING ON FINANCIAL PERFORMANCE: MODERATION THROUGH LOCAL ENVIRONMENTAL REGULATION AND MEDIA COVERAGE	10.1002/bse.3177	48	24.000
DE GIACOMO MR	2022	THE ENVIRONMENTAL PERFORMANCE OF UK-BASED B CORP COMPANIES: AN ANALYSIS BASED ON THE TRIPLE BOTTOM LINE APPROACH	10.1002/bse.2919	34	11.333
SHIN S	2019	THE EFFECTS OF CONGRUENCY OF ENVIRONMENTAL ISSUE AND PRODUCT CATEGORY AND GREEN REPUTATION ON CONSUMER RESPONSES TOWARD GREEN ADVERTISING	10.1108/MD-01-2017-0043	31	5.167
SHIN S	2017	THE EFFECTIVENESS OF FEAR APPEALS IN 'GREEN' ADVERTISING: AN ANALYSIS OF CREATIVE, CONSUMER, AND SOURCE VARIABLES*	10.1080/13527266.2017.1290671	30	3.750
MATTHES J	2023	COMPARING THE EFFECTS OF	10.1080/02650487.2022.2076510	13	6.500



	<p>GREENWASHING CLAIMS IN ENVIRONMENTAL AIRLINE ADVERTISING: PERCEIVED GREENWASHING, BRAND EVALUATION, AND FLIGHT SHAME</p>			
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**Table 2**

### 3.3 Countries Scientific Production

The statistics offer a fascinating glimpse into the varying degrees of engagement with articles related to greenwashing across different countries, painting a picture of global awareness and recognition of the importance of addressing deceptive environmental practices. At the forefront of this discourse is the United Kingdom, with a notable 69 articles, indicating a significant focus on the phenomenon of greenwashing and its implications within academic and research circles. Following closely behind, the United States and Italy demonstrate considerable interest with 48 and 47 articles, respectively, reflecting the widespread acknowledgment of greenwashing as a critical issue. Similarly, Spain and the Netherlands also show noteworthy attention with 33 and 32 articles, respectively, suggesting a growing awareness of the complexities surrounding greenwashing practices. Moving across continents, Brazil and Germany exhibit moderate engagement with 19 articles each, indicative of a rising interest in exploring the intricacies of greenwashing within diverse cultural and industrial contexts. Australia and Canada follow suit with 17 and 16 articles, respectively, showcasing a developing discourse on the topic in these regions. Meanwhile, countries like Indonesia, France, China, and India demonstrate moderate interest with 16, 13, 11, and 11 articles, respectively, signaling a burgeoning recognition of greenwashing's significance on a global scale. Moreover, Portugal, Sweden, and Switzerland each contribute 10 articles, indicating a steady acknowledgment of greenwashing within their media landscapes. Further down the list, Denmark and Pakistan demonstrate a modest engagement with 8 articles each, while Finland, Austria, and Norway show a nascent interest with 7, 6, and 6 articles, respectively. Even in countries where engagement appears more limited, such as Poland, Egypt, and Singapore, with 6, 5, and 5 articles, respectively, there's evidence of a growing awareness of greenwashing within their media discourse. These numbers collectively underscore a global recognition of the importance of addressing greenwashing practices and promoting transparency in environmental claims. They highlight the need for collaborative efforts across nations to combat deceptive practices



and foster a more sustainable and responsible approach to corporate behavior.  
Country Scientific Production

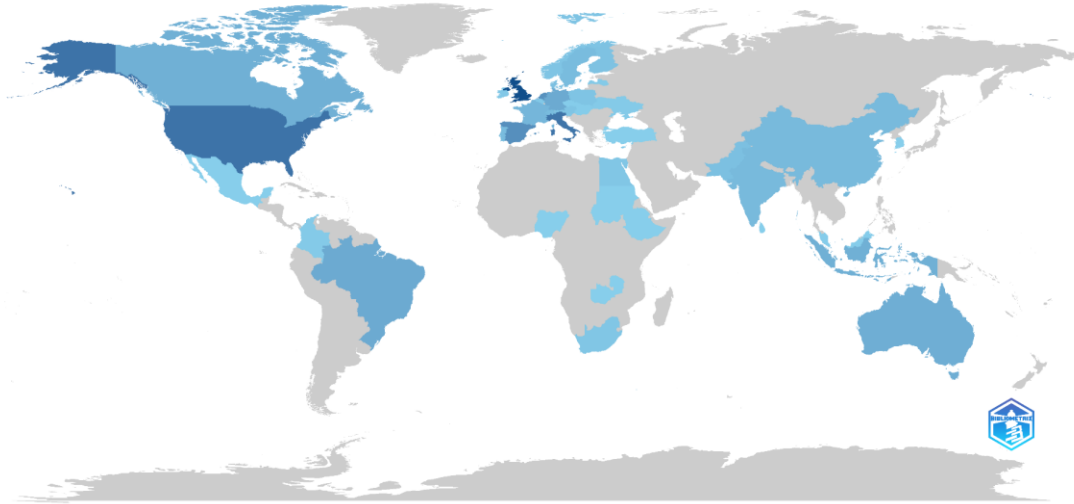


Fig. 3 Source: Biblioshiny R software

### 3.4 Network Analysis: Word cloud based on the Author's Title



Fig. 4 Source: Biblioshiny R software

A word cloud is a visual representation of text data, where words from a body of text are arranged visually, with the size of each word corresponding to its frequency of occurrence in the text. In titles addressing environmental concerns and corporate practices, several recurring keywords emerge prominently, offering insights into the central themes and focus areas of scholarly inquiry. At the forefront, the term "green" stands out as the most frequent keyword, appearing 60 times, indicating a strong emphasis on environmental themes and initiatives. This underscores the overarching goal of promoting sustainability and eco-friendly practices within corporate operations. Closely following "green," "greenwashing" emerges as another prominent keyword, featured 52 times. This highlights a significant focus on the phenomenon of deceptive environmental claims and the need to address misleading practices within corporate communications. Additionally, the keyword "environmental" appears 35 times, emphasizing the

central theme of ecological considerations and the importance of protecting natural resources and ecosystems. This suggests a keen interest in understanding and mitigating the environmental impacts of corporate activities. The term "corporate" is also prevalent, featured 26 times, indicating a strong emphasis on the intersection of business and environmental responsibilities. This reflects a growing recognition of the role that corporations play in shaping environmental outcomes and the need for greater accountability and transparency in corporate practices. "Sustainability" and its derivative "sustainable" are mentioned 20 and 18 times, respectively, underscoring a consistent focus on long-term environmental viability and the pursuit of sustainable business models. This reflects a broader commitment to balancing economic prosperity with environmental stewardship. Furthermore, keywords such as "advertising" and "performance," each appearing 17 times, suggest a focus on the marketing and operational aspects of environmental initiatives. This indicates a desire to understand how corporate communication and actions influence consumer perceptions and organizational outcomes. "Effects," mentioned 14 times, signals an interest in understanding the ramifications of corporate actions on the environment, including both intended and unintended consequences. This reflects a nuanced approach to analyzing the impacts of corporate practices on environmental sustainability. Finally, the inclusion of "CSR" (Corporate Social Responsibility) as a keyword, featured 12 times, underscores a recognition of the role of businesses in addressing societal and environmental challenges. This highlights a growing expectation for corporations to demonstrate ethical and responsible behavior in their operations and engagements with stakeholders. Collectively, these keywords reflect the breadth of topics covered in titles related to environmental concerns and corporate practices, illustrating the diverse perspectives and interests within this dynamic and evolving domain of research.

### 3.5 Countries Collaboration Network:

The graph provides a visual representation of the collaborative relationships between countries, revealing clusters of nations with strong ties in research collaboration. Notably, countries such as the United Kingdom, the USA, Italy, Spain, and the Netherlands have emerged as prominent hubs of collaboration, demonstrating robust partnerships and extensive networks within the research community. Conversely, countries like Brazil, Portugal, and Sweden appear to have limited or negligible collaboration with other nations in the network. By delving into this collaborative network, researchers can glean valuable insights into global research partnerships, discern key players or clusters of countries fostering collaboration, and uncover opportunities for promoting enhanced cooperation and knowledge exchange on a global scale.

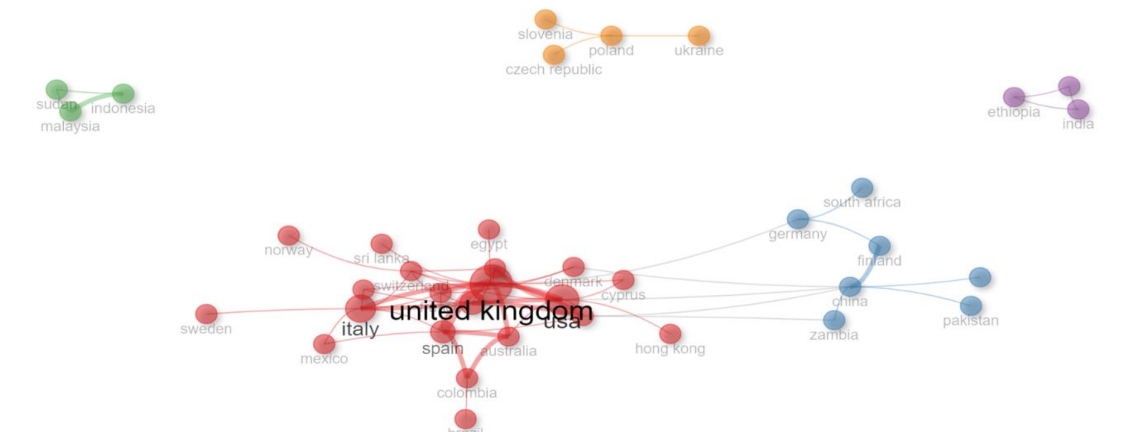


Fig. 5

**3.6 Thematic Map analysis:** Thematic mapping analysis offers a powerful visual representation of the interconnectedness and significance of themes within a research subject. By plotting clusters of co-occurring themes as bubbles on a graph, thematic mapping provides researchers with a comprehensive overview of the thematic landscape and allows for the identification of key patterns and trends. The X-axis of the thematic mapping graph reflects cluster centrality, which indicates the level of interaction with other clusters and the overall importance of a theme within the research subject. Themes positioned towards the right side of the graph exhibit higher centrality, suggesting a stronger influence and more extensive connections with other themes. These themes, known as motor themes, occupy the first quadrant (top right) of the graph and represent well-established and significant aspects of the research subject. Conversely, the Y-axis of the graph represents density, reflecting the internal strength and growth of a cluster network. Themes located towards the top of the graph exhibit higher density, indicating a greater concentration of related concepts within the cluster. Niche themes, situated in the second quadrant (top left), possess high density but low centrality, suggesting that they are focused on specific subtopics within the research subject and may have limited relevance to the broader thematic landscape. Themes positioned towards the bottom left quadrant represent emerging or declining themes, which demonstrate low centrality and density. These themes may indicate areas of marginal development within the research subject, either emerging as new areas of inquiry or declining in relevance over time. Finally, themes located in the fourth quadrant (bottom right) of the graph represent basic themes, which exhibit high centrality but low density. These themes are essential for transdisciplinary research as they provide foundational concepts or frameworks that underpin the broader thematic landscape. By identifying motor themes, niche themes, emerging or declining themes, and basic themes, researchers can better understand the interconnectedness of themes, prioritize areas for further investigation, and identify opportunities for interdisciplinary collaboration.

The trajectory of themes is observed by segmenting time intervals. A movement toward the upper right of the graph over time indicates a rising trend in theme importance, while a trajectory toward the lower left signifies a declining trend. This approach enables the identification of evolving patterns and trends within the thematic landscape of the research subject.

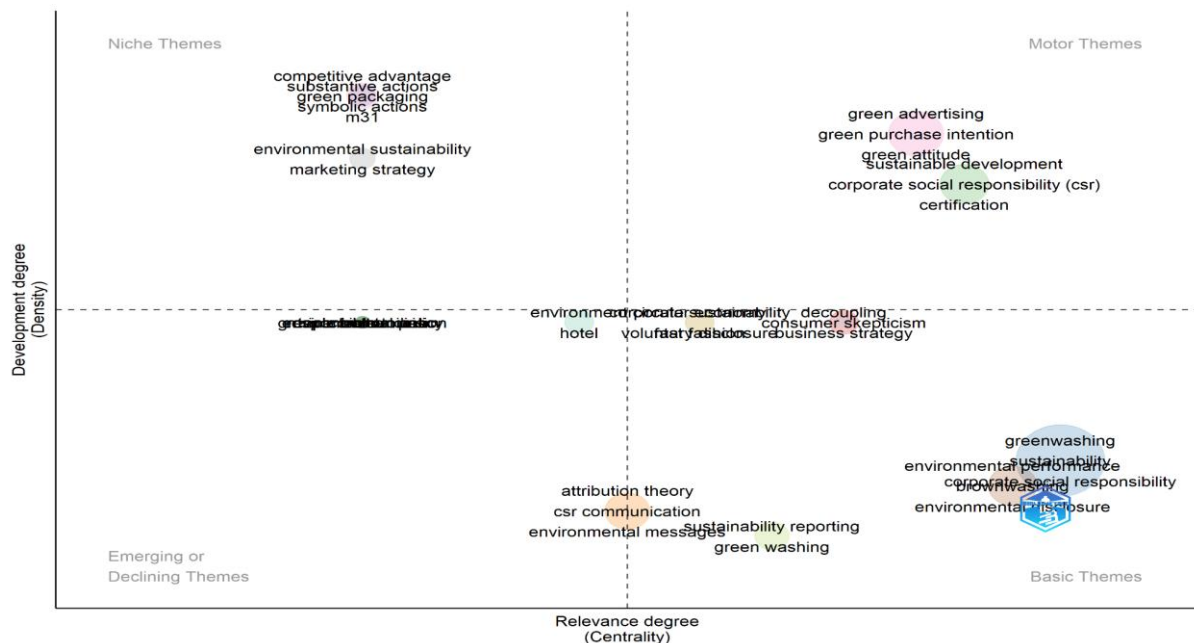


Fig. 6

#### **4. Conclusion:**

In conclusion, this paper presents a comprehensive bibliometric analysis focused on greenwashing, illuminating the deceptive practices prevalent within corporate environments regarding environmental claims. Through meticulous extraction of data from Scopus and employing specific search criteria, we scrutinized scholarly works published between 2010-2023, providing a thorough overview of the scholarly landscape surrounding this critical environmental issue. Our analysis encompassed trends in publication output, citation patterns, author affiliations, keyword analysis, and thematic clusters, revealing the interdisciplinary nature and emerging areas of inquiry within the field. The findings of our study underscore a steady increase in publication output over the years, indicative of the growing interest and concern among researchers regarding greenwashing practices. Citation patterns highlighted influential works and authors shaping discourse in this domain, while keyword analysis identified key themes driving research on greenwashing, offering valuable insights into the evolving scholarly discourse. This paper contributes significantly to scholarly understanding by consolidating existing knowledge, pinpointing research gaps, and providing a roadmap for future investigations aimed at combatting greenwashing within corporate environments. By synthesizing the available literature and offering directions for further inquiry, we seek to advance understanding and catalyze action toward promoting transparency and accountability in environmental claims. Ultimately, we aim to contribute to the betterment of society and the environment by fostering informed decision-making and mitigating the detrimental effects of deceptive environmental practices. In an era marked by increasing environmental consciousness and corporate accountability, our analysis serves as a vital tool for researchers, policymakers, and practitioners alike. By delineating the contours of the greenwashing landscape, we empower stakeholders to navigate the complexities of environmental discourse with clarity and insight. Through continued scholarly inquiry and concerted action, we can work towards a future where environmental claims are genuine, transparent, and conducive to sustainable development.

#### **5. The implication of our study:**

The implications of our research are multifaceted and extend to various stakeholders, including academia, policymakers, businesses, and consumers. Firstly, our study contributes to academia by providing a comprehensive overview of the scholarly landscape surrounding greenwashing, shedding light on key trends, influential works, and emerging research areas. This can serve as a foundation for future studies aimed at deepening understanding, addressing research gaps, and advancing knowledge in this field. Secondly, policymakers can benefit from our research by gaining insights into the prevalence and nature of greenwashing practices within corporate environments. Our findings can inform the development of regulations, guidelines, and enforcement mechanisms aimed at promoting transparency, accountability, and ethical behavior in environmental claims. By aligning regulatory frameworks with the findings of our study, policymakers can better protect consumers, promote fair competition, and foster sustainable business practices. For businesses, our research underscores the importance of authenticity and credibility in environmental messaging and practices. By understanding the scholarly discourse on greenwashing and its implications, companies can enhance their corporate social responsibility initiatives, strengthen their brand reputation, and build trust with consumers. Our findings can also guide businesses in developing effective communication strategies, ensuring that environmental claims are accurate, substantiated, and aligned with corporate values and practices. Finally, consumers stand to benefit from our research by gaining awareness and understanding of greenwashing practices and their potential impact. Armed with

knowledge from our study, consumers can make more informed purchasing decisions, discerning between genuine environmentally friendly products and deceptive claims. By empowering consumers to recognize and reject greenwashing, our research can drive demand for truly sustainable products and incentivize businesses to prioritize genuine environmental stewardship. Overall, the implications of our research extend beyond academia to influence policymaking, corporate behavior, and consumer choices, ultimately contributing to a more transparent, sustainable, and ethical marketplace.

## 6. Limitation of the study:

While our research paper offers valuable insights into the scholarly landscape surrounding greenwashing, it is crucial to acknowledge several limitations that could affect the interpretation and generalization of our findings. Firstly, our reliance on data extracted solely from Scopus may introduce biases, as it may not encompass all relevant scholarly works on greenwashing. Additionally, our study is limited to publications in English, potentially overlooking important contributions in other languages and introducing a language bias. Moreover, our focus on peer-reviewed articles may exclude insights from non-peer-reviewed sources, leading to a publication bias. Despite employing a comprehensive search strategy, variations in terminology or keyword usage could result in the omission of relevant articles, impacting the completeness of our dataset. Furthermore, our temporal scope from 2010-2023 may miss recent developments in greenwashing research, affecting the currency and relevance of our findings. Interpretation bias is also a consideration, as subjective interpretation of results could introduce inconsistencies or inaccuracies. Finally, while our analysis provides insights into the scholarly discourse on greenwashing, the generalizability of our findings may be limited by variations in research methodologies, cultural norms, and regulatory frameworks across different contexts. Addressing these limitations in future research endeavors will be essential to build upon our findings and advance our understanding of greenwashing within corporate environments.

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