The role of government policies in promoting green marketing: a bibliometric review

Adrian Arya Nugraha Jamal[1*)], Siti Dyah Handayani [2], Jamaluddin Ahmad [3]

[1, 2,] *Department of Management Studies, Universitas Muhammadiyah Yogyakarta, Indonesia*
 [3]*Departement of Public Administration, Universitas Muhammadiyah Sidenreng Rappang, Indonesia*

Abstract

This study aims to map the development and relationship between green marketing, public policy, and the Role of government in supporting sustainable marketing practices globally, while identifying gaps and variations in policy effectiveness across countries. Using a bibliometric approach based on Scopus data for 2014-2024, this study analyzes publication trends, researcher collaboration patterns, keyword networks, and policy comparisons across countries. The analysis shows a significant increase in academic interest in this topic since 2021, with publication peaks in 2022 and 2023. China and India dominate research contributions, driven by proactive subsidy policies and fiscal incentives. The keyword network visualization reveals four main clusters: business and sustainability research, consumer behavior, the Role of government, and industrial strategy. Findings highlight the critical Role of policies such as subsidies, ecological labeling, and educational campaigns in increasing the adoption of green marketing and encouraging environmentally friendly consumer behavior. However, challenges still arise in the form of low consumer awareness, technological limitations, and the risk of greenwashing. The overall interpretation concludes that the integration of supportive public policies, industry readiness, consumer acceptance, and the importance of customizing strategies to the local context primarily determines the success of green marketing. This research recommends strengthening subsidy policies, education campaigns, and transparent labeling, and supports cross-sector collaboration to accelerate the transition to sustainable business practices globally.

Introduction

Green marketing refers to an approach that focuses on financial and strategic benefits and identifies, anticipates, and meets the needs of customers and society sustainably (Martins, 2021). It is also known as sustainable marketing, which refers to a strategy to promote and sell environmentally friendly products by considering the production, packaging, distribution, and marketing communication processes (Kaur & Gupta, 2024). The growing global awareness of environmental issues, demands from governments and regulators, consumer pressure, the development of international standards, as well as greater attention from the financial sector, prove that companies are now facing growing internal and external pressures to integrate sustainability aspects into their business strategies (Demarcq & Martin, 2017).

However, the successful implementation of green marketing is not only determined by company initiatives, but is also strongly influenced by public policy and the active Role of the government. Strengthening environmental regulations aligned

with green marketing strategies has proven effective in increasing consumer buying interest in environmentally friendly products and encouraging companies to optimize their green marketing strategies (X. Li et al., 2024; Purwanto et al., 2024). In addition, government policy interventions such as ecological labeling policies combined with green marketing also encourage firms, especially retailers, to invest more in green practices. This ultimately contributes to increased profitability, product sustainability, and social welfare (Xue et al., 2023).

Nonetheless, various barriers remain, especially regarding the practical responsibility aspects on the ground. Gaps in environmental regulations, weak coordination and monitoring mechanisms, and excessive political intervention can trigger resistance to command-and-control policies. Lack of government support and incentives also hinders the adoption of market-based approaches in the early stages of green responsiveness (Rajapakse et al., 2022). On the other hand, previous studies have shown that increased investment in green marketing can significantly improve brand perception and purchase intentions. However, the results vary depending on each country's economic, cultural, and regulatory context. These findings emphasize the importance of tailoring green marketing strategies to specific regional characteristics, providing practical insights for companies looking to strengthen brand loyalty through a sustainability approach (David et al., 2025).

Research on green marketing, public policy, and the Role of government continues to grow globally. However, to date, few studies still systematically and comprehensively map the relationship between these three aspects in the academic literature, especially in the context of cross-country comparisons and variations in the effectiveness of policies implemented. In addition, few studies have analyzed the impact of policy differentiation, the Role of fiscal incentives, and regulatory interventions on the success of green marketing strategies in various regions. Therefore, an integrative approach is needed to provide a comprehensive picture of research trends, collaboration between researchers, policy comparisons, and directions for developing a more evidence-based green marketing strategy.

Due to this gap, bibliometric analysis is an appropriate method to identify the pattern and evolution of research in this topic. This research aims to map the development of studies on green marketing, public policy, and the Role of government in the last decade (2014-2024) through a bibliometric approach based on Scopus data. Specifically, this study aims to (1) analyze publication trends and researcher contributions at the global level, (2) identify international collaboration and research network patterns, (3) map key themes and keyword relationships, and (4) Explore cross-country policy comparisons to understand variations in the international effectiveness of green marketing strategies. As such, this article is expected to provide a comprehensive overview that supports the formulation of more integrated and evidence-based public policies and marketing strategies across countries.

Given this identified gap and the stated research objectives, reviewing prior studies to understand how scholars have conceptualized the intersection of green marketing, public policy, and government roles is important. Such an overview contextualizes the present study and establishes a foundation for the bibliometric analysis conducted in this article.

An overview of research on green marketing, public policy, and government has been developed, with various research methods to understand trends, core issues, and future directions. This review synthesizes findings from various studies to comprehensively understand the relationship between these topics. Four main findings

on this topic were found based on the synthesis of the various studies. First, a trend of research on green marketing reflects a broad interest in its impact on various aspects of business and consumer behavior. This is supported by a bibliometric study of 610 articles on green marketing, which identified six main groups: Consumption behavior, behavioral impact, innovation and firm performance, business development, sustainability, and economics (Totok Suyoto et al., 2024). In addition, other studies also show that interest in green marketing continues to increase, especially after the COVID-19 pandemic, which is reflected in the number of publications in reputable journals that highlight the Role of green marketing in changing consumer behavior (Agarwal & Singh, 2024).

Second, the relationship between public policy and green marketing underscores that supportive government policies and strong leadership are critical determinants of successful green marketing implementation. Previous studies have demonstrated that proactive and well-designed policies can effectively encourage the adoption of more sustainable business strategies and enhance overall corporate environmental performance (Ofori, 2021; Usman et al., 2024). Specifically, green governance frameworks and policy interventions have been shown to improve environmental management practices and foster sustainability-oriented corporate cultures significantly. These findings highlight the pivotal role of public policy as a foundational pillar in advancing green marketing initiatives by raising awareness and motivating firms to integrate green practices into their core operations. Nevertheless, the effectiveness of such policies is often hindered by limitations in green financing mechanisms, weak cross-sector coordination, and gaps in regulatory enforcement, which remain persistent challenges in many countries (Ofori, 2021).

Third, in the context of environmental policy, studies using bibliometric analysis focusing on green and sustainable finance reveal three main areas: socially responsible investment, green finance, and climate finance. These three aspects significantly concern policymakers and regulatory agencies in developing effective strategies to support sustainable development (Naeem et al., 2023). In addition, another study evaluated the alignment between research funded by public institutions and environmental policies. The results showed a gap in policy effectiveness, so improvements are needed in the design of scientific evidence-based policies so that the research conducted can better support optimal policy development (Barbosa & Gomes, 2024).

Fourth, the implementation of green marketing still faces various challenges and opportunities. One of the main obstacles is the different regulatory priorities and lack of coordination between countries in implementing environmental policies. In addition, companies also experience problems allocating resources to support green initiatives (Ofori, 2021). On the other hand, opportunities in developing green financial instruments, such as the green bond market, show a positive relationship between green finance and environmental benefits. However, more research is needed to understand the variation in policy impacts across regions and the effectiveness of different policy designs in supporting green marketing strategies (Joshipura et al., 2025).

Research Methods

Bibliometric analysis is a rigorous method used to systematically examine large datasets of bibliographic records in order to evaluate their impact on a particular field. In this study, bibliometric analysis was applied to investigate academic research on green marketing, public policy, and the role of government over the last decade (2014–2024). Following the principles of the PRISMA framework, the process of identification, screening, and inclusion was conducted to ensure transparency, clarity, and reproducibility in article selection (Ferdaus et al., 2024). While PRISMA is traditionally employed in systematic literature reviews, its adaptation in this bibliometric context provides a standardized approach that strengthens methodological rigor and facilitates replication by other researchers.

The keyword selection was grounded in both theoretical and empirical considerations. The core term "green marketing" was chosen because it has been widely established in marketing and sustainability literature (Kaur & Gupta, 2024; Martins, 2021). To capture the policy dimension, the terms "public policy" and "government" were added, since prior studies emphasize their significant influence on corporate sustainability practices and consumer behavior (Ofori, 2021; Xue et al., 2023). This combination ensured that the retrieved documents reflected the intersection of marketing, sustainability, and governance. Boolean operators (AND, OR) were applied to refine the scope and to exclude irrelevant results, making the search strategy more precise and replicable.

The data were retrieved from the Scopus database, which was selected due to its comprehensive coverage of peer-reviewed literature, robust bibliographic information, and advanced search capabilities across keywords, journals, countries of publication, and time periods. Scopus was also considered appropriate because of its broad multidisciplinary scope, ensuring the inclusion of relevant scholarly contributions. While Scopus provides comprehensive coverage, relying solely on this database may introduce coverage bias since articles indexed in other sources, such as Web of Science or Google Scholar, were not included. Nevertheless, Scopus was considered the most suitable due to its breadth and reliability in bibliometric research (Lubis et al., 2025). To ensure reproducibility, the complete search query, publication years, document type, language, and exclusion criteria have been reported, allowing this study to be replicated by other researchers.

the final query applied in scopus was as follows: title-abs-key ("green marketing" and "public policy" or "government") and pubyear > 2013 and pubyear < 2025 and (limit-to (doctype , "ar")) and (limit-to (pubstage , "final")) and (limit-to (language , "english")) and (limit-to (srctype , "j")).

Figure 1 shows that 212 records were initially identified through Scopus. After removing duplicates (n=0), a total of 104 records were excluded for several reasons, including being outside the time frame (2014–2024, n=59) and non-article documents such as reviews, editorials, and book chapters (n=45). No records were excluded due to publication stage, source type, language, or accessibility. Finally, 108 journal articles were included in the bibliometric analysis.

The final dataset of 108 articles was subsequently analyzed using VOSviewer software to map and visualize keyword co-occurrence networks, author collaborations, and publication trends. This analysis provided comprehensive insights into the research landscape of green marketing, public policy, and government.
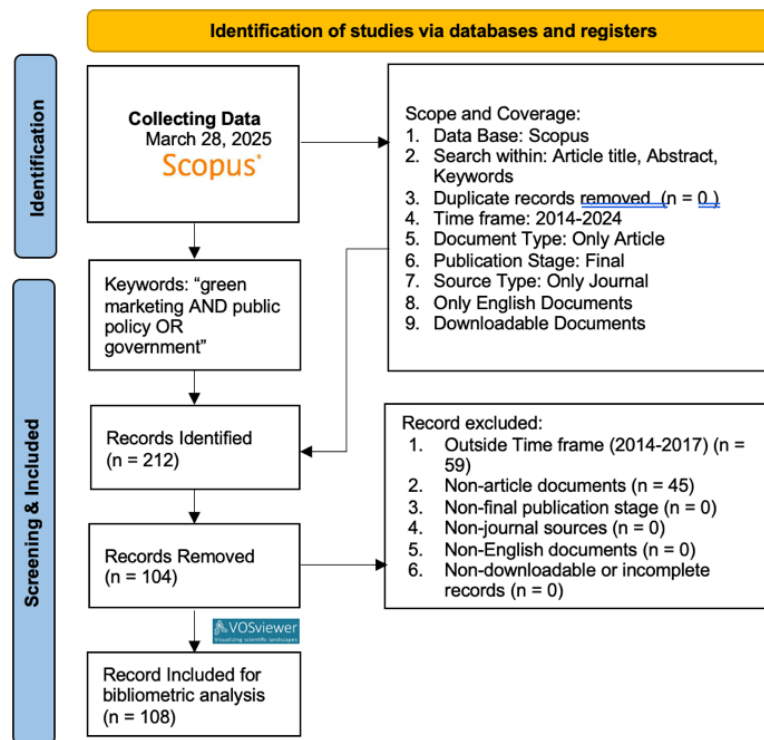
Figure 1. PRISMA Flow
Source: processed by author

Results and Discussion

Before discussing overall publication trends and network structures, this section first emphasizes the cross-country policy comparison as a distinctive contribution of this study.

Comparative Analysis of Policies in Various Countries in Promoting Green Marketing

Green marketing strategies show varying effectiveness in each country, strongly influenced by the prevailing cultural, social, and regulatory frameworks. For example, in the United States and South Korea, the value of green consumption and emotional closeness to nature have different contributions in shaping consumers' green attitudes and behaviors (van Tonder et al., 2020). Therefore, adapting green marketing strategies to the local context is crucial to maximize their impact (David et al., 2025).

In China, the government has adopted a comprehensive approach to encourage green marketing adoption, including fiscal incentives and tax subsidies that support green technology innovation and sustainable enterprise development (Shi & Ge, 2025). The study shows that government subsidies significantly encouraged substantive and strategic green innovation and improved business performance over the period 2007-2021. However, these positive effects are moderated by the degree of marketization, transparency of environmental disclosures, and industry characteristics, e.g., in high-pollution and manufacturing sectors (Zhang et al., 2025). Nonetheless, subsidies can lead to inefficient investments, so policies must be carefully designed to be better targeted. In addition, implementing subsidies in China requires considering regional disparities and the needs of individual industries. For example, industries with high

emission levels are more effectively intervened through penalty-based policies rather than subsidies (Fang & Zhao, 2023; Yi et al., 2022; Zhao & Chen, 2019).

Developed countries generally tend to integrate Environmental, Social, and Governance (ESG) strategies into green marketing to gain a competitive advantage (Tzanidis et al., 2024). Meanwhile, in developing countries like Indonesia and the Philippines, low consumer awareness and acceptance of green products are still significant challenges (Agustini et al., 2021). Government efforts in subsidies and strengthening distribution networks are considered capable of accelerating the adoption of green products. However, these policies must pay attention to the cultural context and the issue of affordability (Alharbi, 2025).

In Malaysia, a strategic approach through eco-labeling and advertising that promotes energy savings has proven effective in influencing consumer attitudes and behaviors in the hospitality sector (Mohamed Sadom et al., 2022). Similar results were found in another study that emphasized the importance of packaging design and green labeling in encouraging the purchase of sustainable products (Huang et al., 2024). Even in the UAE, eco-labeling has significantly impacted consumer perception and trust in green products (Shabbir et al., 2020).

In the Middle East, particularly Saudi Arabia, the UAE, and Qatar, social norms and cultural values significantly influence preferences for green products. The value of religiosity is also an important factor in supporting the adoption of green products. Supportive government policies, such as subsidies, distribution strengthening, and credible certification, further accelerate the market transformation towards a greener direction (Alharbi, 2025).

Another study conducted in Ghana showed that green marketing strategies positively influence consumer purchasing behavior, with price as an important mediating factor. This emphasizes the need to consider affordability as a key factor in emerging markets (Amoako et al., 2022).

In addition, Harring et al. (2023) show that in developing countries such as Ecuador, Egypt, India, Indonesia, and Mexico, the public tends to have similar levels of acceptance of policies to remove fossil fuel subsidies and implement carbon taxes. Public support increases significantly when the use of proceeds from subsidy removal is explained transparently, confirming the importance of fiscal accountability in promoting green transition policies.

Globally, countries have implemented policies, ranging from financial incentives to technology mandates to tax credits, to accelerate the green transition. For example, China, Sweden, and the United States have successfully combined these policies to encourage the adoption of green technologies such as heat pumps, which can analogously be applied to the green marketing context (Rosenow et al., 2022).

Although green marketing strategies have great potential in raising environmental awareness and encouraging the adoption of green behaviors, their implementation faces various challenges. Structurally, infrastructure gaps and technological limitations exist in supporting green supply chains. Companies require advanced technologies to manage supply chains effectively, yet these technologies are often unavailable or unaffordable in many countries (Cui et al., 2025). Economically, implementing green marketing strategies usually requires a large initial investment, which is a significant barrier, especially in countries with developing economies (Mutiarasari et al., 2025). Meanwhile, psychological challenges such as greenwashing practices, low environmental literacy, and consumer distrust of green claims hinder policy effectiveness (Nayak et al., 2024). Therefore, intensive collaboration between

governments, businesses, non-profit organizations, and consumers is key to ensuring ecological sustainability, strengthening transparency, and establishing consistent and credible standards (Nayak et al., 2024).

Taken together, a comparative analysis of policies across countries underscores that the effectiveness of green marketing strategies is highly contingent on local contexts, requiring careful adaptation to each country's cultural and socio-economic landscape. While developed nations emphasize ESG principles as strategic differentiators, developing countries prioritize subsidies, distribution strengthening, and credible certification schemes to encourage green product adoption (Alharbi, 2025; Tzanidis et al., 2024). Nonetheless, persistent global challenges such as limited supporting infrastructure, high upfront costs, and consumer trust issues such as greenwashing, highlight the urgent need for more targeted, context-sensitive policy interventions supported by strong cross-sector collaboration to ensure the successful advancement of green marketing initiatives worldwide (Cui et al., 2025; Nayak et al., 2024).
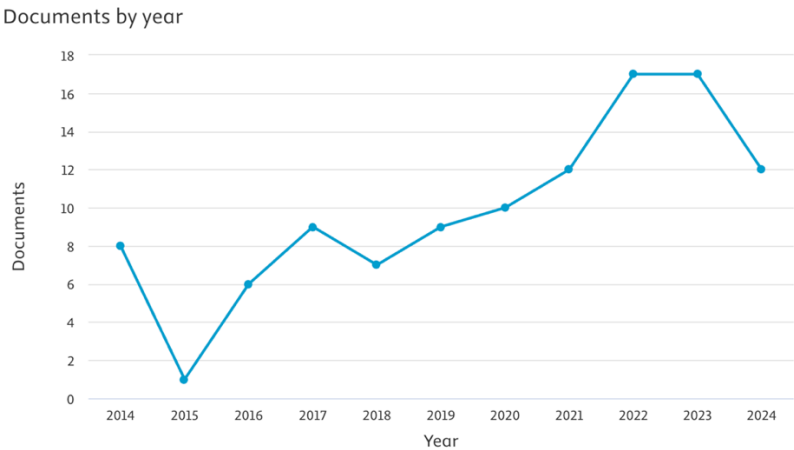

Figure 2. Document by years
Source: scopus database

Figure 2 shows the trend of research related to green marketing, public policy, and government in 2014-2024, which shows a fluctuating pattern with an increasing trend. In 2014, the number of publications was relatively high, but experienced a drastic decline in 2015 before gradually increasing again in the following years. The period 2016-2020 showed a relatively stable growth trend, although there was a slight decrease in 2018. A more significant increase occurred since 2021, with publications peaking in 2022 and 2023. This increase aligns with Agarwal & Singh (2024) findings, which show that interest in green marketing continues to increase, especially after the COVID-19 pandemic, which has driven changes in consumer behavior and an emphasis on sustainability. In addition, the surge also reflects the increasing global awareness of environmental issues and the urgent need to transform business practices towards a more sustainable direction. Meanwhile, the decline in the number of publications in 2024 can be interpreted as a reflection of the dynamics of academic focus due to shifting global policy priorities and new challenges that require adjustments to the research agenda.

Documents by country or territory
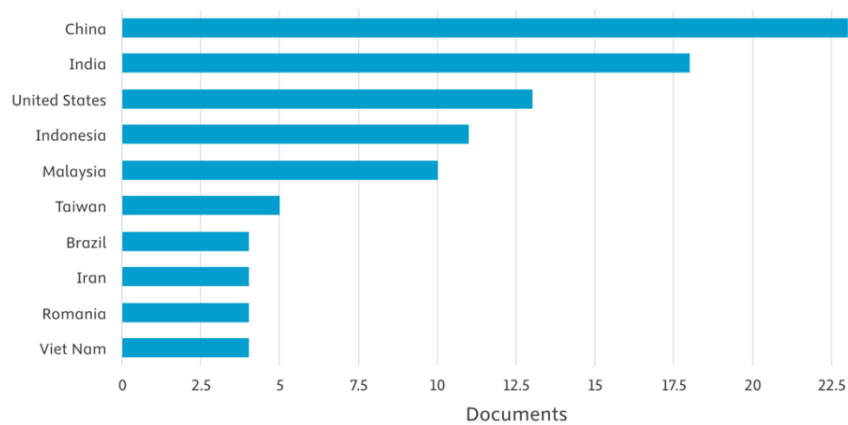Compare the document counts for up to 15 countries/territories.

Figure 3. Documents by country
Source: scopus database

The geographical distribution of publications illustrated in Figure 3 highlights the dominance of China and India, followed by the United States, Indonesia, and Malaysia, reflecting the second research objective of identifying regional contributions and international collaboration. China has the highest number of publications (more than 22 documents), followed by India. At the same time, the United States ranks third with a slightly lower but still significant contribution. Indonesia and Malaysia also make significant contributions, with nearly the same number of publications, followed by Taiwan, Brazil, Iran, Romania, and Vietnam, which, despite contributing fewer publications, still play an important role in enriching the global discourse on green marketing, public policy, and government intervention. The presence of Asian countries, particularly China and India, highlights the effectiveness of proactive public policies and government incentives in promoting the implementation of green marketing practices, such as subsidy schemes and fiscal incentives that encourage investment in green technology and broader adoption (Shi & Ge, 2025; Zhang et al., 2025). On the other hand, countries like Indonesia and the Philippines still face significant challenges related to consumer awareness and product affordability, highlighting the need for more adaptive policies tailored to local socio-economic contexts (Agustini et al., 2021).

The data in table 1, reflects the range of research addressing green marketing, public policy, and the role of government, with the number of citations as an indicator of each study's influence.

The article "A fresh look at understanding Green consumer behavior among young urban Indian consumers through the lens of Theory of Planned Behavior" by Taufique & Vaithianathan (2018) , which has been cited 344 times, explores green consumer behavior in India through the Theory of Planned Behavior. The main findings of this study show that environmentally concerned consumer behavior is influenced by attitudes towards the environment and perceived consumer effectiveness (PCE). At the same time, subjective norms have no significant effect. This indicates that individuals' attitudes and beliefs about their ability to contribute to environmental protection are more instrumental in motivating green behavior.

Table 1. Classification of the five most-cited articles

No	Title	Authors	Year	Source title	Total Citation
1	A fresh look at understanding Green consumer behavior among young urban Indian consumers through the lens of Theory of Planned Behavior	Taufique, Khan Md.Raziuddin; Vaithianathan, Sridhar	2018	Journal of Cleaner Production	344
2	Price competition between green and non green products under corporate social responsible firm	Sana, Shib Sankar	2020	Journal of Retailing and Consumer Services	265
3	Pressure analysis for green supply chain management implementation in Indian industries using analytic hierarchy process	Mathiyazhagan K.; Govindan, Kannan; Noorul Haq A.	2014	International Journal of Production Research	218
4	Effects of government subsidies on green technology investment and green marketing coordination of supply chain under the cap-and-trade mechanism	Li, Zhimin; Pan, Yanchun; Yang, Wen; Ma, Jianhua; Zhou, Ming	2021	International Energy Economics	174
5	Pro-environmental behaviors for thee but not for me: Green giants, green Gods, and external environmental locus of control	Kalamas, Maria; Cleveland, Mark; Laroche, Michel	2014	Journal of Business Research	154

Source: processed by author

Furthermore, Sana (2020) in the article "Price competition between green and non-green products under corporate socially responsible firms," with 265 citations, discusses price competition between green and non-green products in companies that implement social responsibility. The main findings of this study show that subsidies and tax policies that favor green products allow for more competitive prices, increasing their demand and competitiveness in the market. In contrast, high taxes on non-green products decrease their demand. CSR activities and consumer environmental awareness also play a role in increasing the attractiveness of green products. The model emphasizes the importance of pricing strategies and government policies in supporting the long-term success of green products.

The article "Pressure analysis for green supply chain management implementation in Indian industries using analytic hierarchy process" by Mathiyazhagan et al. (2014), with 218 citations, examined the pressures Indian industries face in implementing green supply chain management (GSCM) using the analytic hierarchy method. The study identified 65 pressures driving GSCM adoption, which were then prioritized using AHP. The key findings show that government regulations and customer demand pressures strongly influence the industry's decision to adopt GSCM practices. In addition, global competition also proved to be a key driver, while financial and operational factors received lower priority. These results provide important insights into how external and internal pressures can drive industries to improve their environmental performance.

The study by Z. Li et al. (2021) in "Effects of government subsidies on green technology investment and green marketing coordination of supply chains under the

cap-and-trade mechanism" with 174 citations examines the impact of government subsidies on green technology investment and green marketing coordination in supply chains. The main findings show that government subsidy policies, whether based on green technology investment costs (FC subsidy) or emission reductions (ER subsidy), significantly influence investment decisions and green marketing coordination. The analytical model shows that FC subsidies are more effective for controlling total carbon emissions, while ER subsidies encourage more green marketing efforts and increased green production. The government can use FC subsidies for high-emitting industries and ER subsidies to support emerging industries.

Finally, Kalamas et al. (2014) in "Pro-environmental behaviors for thee but not for me: Green giants, green Gods, and external environmental locus of control," with 154 citations, examined the influence of perceived environmental responsibility on pro-environmental behaviors. The main findings of this study show that individuals who believe that responsibility for the environment lies with authorities, such as the government or corporations (green giants), tend to care more and behave pro-environmentally. In contrast, those attributing environmental conditions to chance or fate (green gods) are less likely to engage in pro-environmental actions. This model underscores the importance of understanding the influence of external perceptions in driving environmental behavior.

The overall findings of these studies emphasize the significant Role of government policies in encouraging pro-environmental behavior and green marketing success. These studies show that policies such as subsidies, taxes, and regulations can influence consumers' and firms' decisions to choose green products and support the implementation of sustainable business practices such as green supply chain management.

Figure 4. Network Visualization of Green Marketing, Public Policy, and Government
source: VOSviewers app source

Figure 4 above is a research map on green marketing, public policy, and government generated using VOSviewer. This map illustrates the relationship between keywords often appearing in scientific publications discussing green marketing and the Role of public policy and government in supporting sustainability. From this

visualization, it can be seen that research in this field is divided into several main clusters that are interconnected.

The first cluster, marked in red, focuses on research, business, marketing, and sustainability. Terms such as research, business, marketing, sustainability, and sustainable development dominate this cluster, suggesting that many studies examine how green marketing strategies can be integrated into broader business practices and how sustainability is an important factor in business strategy development and stakeholder engagement. Previous research reveals that green marketing strategies enable companies to reduce environmental impacts while improving brand image and customer loyalty. Green marketing and sustainability are now important to responsible and sustainable business practices (Singh et al., 2024).

This is supported by recent studies showing that green marketing is an effective business model. Research in South Africa revealed that companies that adopted green marketing experienced increased transparency in sustainability reporting, corporate image, and stakeholder engagement. Despite challenges such as greenwashing and the high cost of green technology, green marketing still provides an effective business model. Sustainable competitive advantage enables companies to gain the trust of consumers who are increasingly concerned about environmental issues (Mukonza & Muposhi, 2025).

The green cluster highlights aspects of consumer behavior and environmentally friendly products. Keywords such as consumer, intention, consumer behavior, and eco label show how policies that support environmentally friendly products influence consumer intention and behavior. Keywords such as knowledge, friendly product, eco label, consumer behavior, and influence show that effective government policies can increase consumer knowledge about green products through ecological labels that provide clear information about product sustainability. In addition, such policies can also influence consumer behavior to choose more environmentally friendly products, which will encourage companies to offer products that are more in line with the needs of a market that is increasingly concerned about the environment.

Eco-labels are visual symbols of a product's environmental credentials, which are important in shaping consumer preferences and behavior (D. Li, 2025; Mallick et al., 2024). These labels establish trust and authenticity, critical for driving green purchasing decisions (D. Li, 2025; Mallick et al., 2024). Increasing environmental knowledge among consumers can amplify the impact of using green advertising and ecological labels, ultimately creating a higher interest in purchasing greener products (Ghouse et al., 2024; D. Li, 2025). Ecological labeling policies and green marketing have a synergy effect in increasing the greenness of a product and improving economic profit (Xue et al., 2023). In addition, implementations such as educational initiatives and information campaigns by governments to encourage individuals and institutions to adopt sustainable consumption practices are effective in raising awareness and shaping greener consumption patterns (Chazhaeva, 2023). Therefore, governments and policymakers have a crucial role in encouraging consumer behavior that can help reduce the impact of climate change (Pham et al., 2024).

Meanwhile, the blue cluster focuses on the Role of government and public policy in driving green marketing. The dominance of keywords such as government, subsidy, firm, enterprise, supply chain, manufacturer, and retailer reflects how regulatory interventions and fiscal incentives are the main catalysts for sustainable practices in the industry (Shi & Ge, 2025). In particular, subsidies reduce the cost burden for manufacturers, while green regulations create a framework that spurs

collaboration across the supply chain, from manufacturers to retailers marketing green products. This systematic support not only encourages business commitment but also directly strengthens the implementation of green marketing.

This is supported by previous research that found the crucial Role of subsidies as a financial stimulus for producers, reducing the investment burden in adopting green technologies and practices. For example, subsidies for high-quality remanufactured products reduce production costs and retail prices, encourage consumer preferences, and expand market demand, creating a chain of positive impacts for business sustainability (Xu et al., 2022).

The last cluster, marked in yellow, reflects industry strategy and policy effectiveness in improving sustainable business performance. Keywords such as industry, Role, and relationship indicate that collaboration between government and industry players is crucial in driving green marketing practices. Effective government policies, such as incentives and regulations, are key drivers in forming synergistic relationships between manufacturers and retailers, increasing the adoption of green products in the market. The findings suggest that industrial strategies aligned with public policies improve environmental performance and strengthen firms' competitive position in the transition to sustainability. Thus, a close relationship between government policy and industrial strategy is key in promoting green marketing and achieving broader sustainability goals.

As previous studies support this argument, collaborative operational models significantly improve supply chain profitability and environmental performance, especially those involving green cost sharing. These models are more cost-efficient for producers and retailers than decentralized approaches and strengthen recycling efforts (Khorshidvand et al., 2025).

Overall, the research map shows that studies on green marketing, public policy, and government are multidisciplinary, covering dimensions of marketing, regulatory frameworks, consumer behavior, and industry strategies. The success of green marketing initiatives depends on integrating effective business strategies, strong government policy support, and active consumer engagement, highlighting the critical role of collaboration between government, industry, and society in promoting sustainability. Keyword network analysis using VOSviewer shows that research in this field can be categorized into several interconnected clusters: (1) business and sustainability research, (2) consumer behavior, (3) the role of government, and (4) industry strategies. These clusters collectively emphasize that green marketing cannot achieve its full potential without comprehensive public policy support and strong cross-sectoral synergy. Previous studies also emphasize that implementing green marketing strategies requires a delicate balance between economic, social, and policy considerations to ensure successful and sustainable implementation (Mutiarasari et al., 2025)

Figure 5 shows the collaboration network among researchers from all selected articles on green marketing, public policy, and government. Each node in this visualization represents a researcher, while the lines (edges) connecting them indicate collaboration in research publications.

The figure shows that Lopes de Sousa Jabbour, A.B., and Chiappetta Jabbour, C.J., are two researchers with many connections to other researchers, indicating their central role in related research. In addition, several researchers, such as Ndubisi, N.O.,

Gustavo, J.U., and Trento, L.R., also have strong connections with various colleagues, indicating that they have contributed to several collaborative studies.
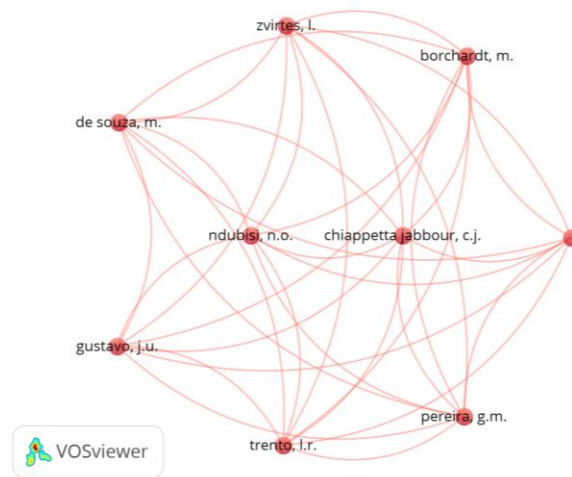

Figure 5. Network Visualization between authors
Source: VOSviewer apps

The network density indicates that research collaboration is quite strong in this topic, with many researchers collaborating. This finding suggests that green marketing and public policy topics are multidisciplinary and require a collaborative approach to generate more comprehensive recommendations.

Conclusion

This research shows that green marketing is gaining widespread attention among academics and practitioners, with a significant increase in publication trends since 2021 and a peak in 2022- 2023. Key findings underscore the important Role of public and government policies in strengthening the adoption of green marketing strategies through subsidies, regulations, or ecological labeling. The bibliometric visualization confirms the close interrelationship between sustainability factors, consumer behavior, industry roles, and government policies as key global drivers of green marketing success. In addition, cross-country collaborations and contributions from Asian researchers, particularly China and India, demonstrate strong dynamics in efforts to expand the application of green marketing across different cultural and economic contexts.

This research successfully addressed all four objectives. Analysis of publication trends confirms the increasing global interest in green marketing topics, while analysis of researcher contributions and networks reveals increasingly close and multidisciplinary collaborations. Mapping the main themes through keyword analysis revealed clusters focusing on consumer behavior, business strategy, the Role of government, and industry collaboration. In addition, cross-country policy comparative analysis successfully demonstrated variations in the effectiveness of green marketing strategies, highlighting the importance of tailoring policies to each country's local context to promote the successful adoption of green products.

Based on these findings, it is recommended that governments strengthen subsidy policies and regulations that support the development of green technologies, along with educational campaigns and more transparent ecological labeling to increase consumer confidence. Companies are also expected to strengthen the integration of

green marketing strategies into their business models to gain a competitive advantage while supporting global sustainability goals. For future research, it is recommended to focus on longitudinal evaluation of the impact of public policies on consumer behavior in various countries and examine the effectiveness of green marketing strategies in the context of emerging markets, including an in-depth analysis of the challenges of greenwashing and the affordability of green technology for small and medium enterprises.

Acknowledgement

References

Agarwal, S., & Singh, D. (2024). A bibliometric and thematic review of green marketing and green consumer behavior research from 2000 to 2022. *Serbian Journal of Management*, *19*(1), 51–70. https://doi.org/10.5937/sjm19-45515

Agustini, M., Baloran, A., Bagano, A., Tan, A., Athanasius, S., & Retnawati, B. (2021). Green Marketing Practices and Issues: A Comparative Study of Selected Firms in Indonesia and Philippines. *Journal of Asia-Pacific Business*, *22*(3), 164–181. https://doi.org/10.1080/10599231.2021.1943807

Alharbi, B. F. M. (2025). The Role of social and cultural factors in consumers' adoption of innovative green products: Exploring green marketing strategies. *Edelweiss Applied Science and Technology*, *9*(2), 2375–2393. https://doi.org/10.55214/25768484.v9i2.5090

Amoako, G. K., Dzogbenuku, R. K., Doe, J., & Adjaison, G. K. (2022). Green marketing and the SDGs: emerging market perspective. *Marketing Intelligence & Planning*, *40*(3), 310–327. https://doi.org/10.1108/MIP-11-2018-0543

Barbosa, M. W., & Gomes, A. (2024). The interface between research funding and environmental policies in an emergent economy using neural topic modeling: Proposals for a research agenda. *Review of Policy Research*. https://doi.org/10.1111/ropr.12630

Chazhaeva, M. (2023). The challenge of achieving sustainable consumption. *BIO Web of Conferences*, *76*, 07004. https://doi.org/10.1051/bioconf/20237607004

Cui, C., Shaari, N., Zainal Abidin, S., & Mohd Ali, N. A. (2025). Sustainable Style: Unraveling the Trends and Future of Green Marketing in the Textile and Apparel Industry. *Sustainability*, *17*(1), 292. https://doi.org/10.3390/su17010292

David, L. K., Wang, J., Cisse, I. I., & Angel, V. (2025). Exploring the role of environmental regulations in green marketing success. *Corporate Social Responsibility and Environmental Management*, *32*(2), 2491–2513. https://doi.org/10.1002/csr.3075

Demarcq, F., & Martin, V. (2017). Environmental Policy of Businesses: Evolution and Future Vision. In *Metaphors for Change: Partnerships, Tools and Civic Action for Sustainability* (pp. 176–181). Taylor and Francis. https://www.scopus.com/inward/record.uri?eid=2-s2.0-85140671335&partnerID=40&md5=5be9ac24ac65eebb1fb57faae7473e18

Fang, L., & Zhao, S. (2023). On the green subsidies in a differentiated market. *International Journal of Production Economics*, *257*, 108758. https://doi.org/10.1016/j.ijpe.2022.108758

Ferdaus, J., Rochy, E. A., Biswas, U., Tiang, J. J., & Nahid, A.-A. (2024). Analyzing Diabetes Detection and Classification: A Bibliometric Review (2000–2023). *Sensors*, *24*(16), 5346. https://doi.org/10.3390/s24165346

Ghouse, S. M., Shekhar, R., Ali Sulaiman, M. A. B., & Azam, A. (2024). Green purchase behaviour of Arab millennials towards eco-friendly products: the moderating role of eco-labelling. *The Bottom Line*. https://doi.org/10.1108/BL-08-2023-0246

Harring, N., Jönsson, E., Matti, S., Mundaca, G., & Jagers, S. C. (2023). Cross-national analysis of attitudes towards fossil fuel subsidy removal. *Nature Climate Change*, *13*(3), 244–249. https://doi.org/10.1038/s41558-023-01597-5

Huang, L., Solangi, Y. A., Magazzino, C., & Solangi, S. A. (2024). Evaluating the efficiency of green innovation and marketing strategies for long-term sustainability in the context of Environmental labeling. *Journal of Cleaner Production*, *450*, 141870. https://doi.org/10.1016/j.jclepro.2024.141870

Joshipura, M., Mathur, S., Joshipura, N., & Castelino, R. (2025). Decoding Green Bonds for Sustainable Development: A Hybrid Review and Research Agenda. *Journal of Economic Surveys*. https://doi.org/10.1111/joes.12687

Kalamas, M., Cleveland, M., & Laroche, M. (2014). Pro-environmental behaviors for thee but not for me: Green giants, green Gods, and external environmental locus of control. *Journal of Business Research*, *67*(2), 12–22. https://doi.org/10.1016/j.jbusres.2013.03.007

Kaur, J., & Gupta, M. (2024). Exploration of Factors of Green Marketing. In A. Kumar & S. Mozar (Eds.), *Lecture Notes in Electrical Engineering* (Vol. 1096, pp. 885–899). Springer Science and Business Media Deutschland GmbH. https://doi.org/10.1007/978-981-99-7137-4_85

Khorshidvand, B., Guitouni, A., Govindan, K., Soleimani, H., Talebi, L., & Sibdari, S. (2025). Optimizing pricing for sustainable government-subsidized omnichannel closed-loop supply chains. *Transportation Research Part E: Logistics and Transportation Review*, *194*, 103932. https://doi.org/10.1016/j.tre.2024.103932

Li, D. (2025). Impact of green advertisement and environmental knowledge on intention of consumers to buy green products. *BMC Psychology*, *13*(1), 220. https://doi.org/10.1186/s40359-025-02538-x

Li, X., Wang, C., Li, D., Yang, D., Meng, F., & Huang, Y. (2024). Environmental Regulations, Green Marketing, and Consumers' Green Product Purchasing Intention: Evidence from China. *Sustainability*, *16*(20), 8987. https://doi.org/10.3390/su16208987

Li, Z., Pan, Y., Yang, W., Ma, J., & Zhou, M. (2021). Effects of government subsidies on green technology investment and green marketing coordination of supply chain under the cap-and-trade mechanism. *Energy Economics*, *101*. https://doi.org/10.1016/j.eneco.2021.105426

Lubis, S., Nurmandi, A., Ahmad, J., Purnomo, E. P., Purwaningsih, T., & Jovita-Olvez, H. D. (2025). Synergizing AI and blockchain: a bibliometric analysis of their potential for

transforming e-governance in smart cities. *Frontiers in Sustainable Cities*, *7*. https://doi.org/10.3389/frsc.2025.1553816

Mallick, S. S., Hota, S. L., Kumar, A., & Agarwall, H. (2024). The influence of eco-friendly marketing tools on sustainable consumer choices: A comprehensive review study. *Environment and Social Psychology*, *9*(8). https://doi.org/10.59429/esp.v9i8.2863

Martins, A. (2021). SME Green Marketing. In *Sustainable Development Goals Series: Vol. Part F2686* (pp. 107–135). Springer. https://doi.org/10.1007/978-3-030-76563-7_5

Mathiyazhagan, K., Govindan, K., & Noorul Haq, A. (2014). Pressure analysis for green supply chain management implementation in Indian industries using analytic hierarchy process. *International Journal of Production Research*, *52*(1), 188–202. https://doi.org/10.1080/00207543.2013.831190

Mohamed Sadom, N. Z., Quoquab, F., Mohammad, J., & Hussin, N. (2022). Less is more: the role of frugality in the Malaysian hotel industry. *International Journal of Tourism Cities*, *8*(1), 260–285. https://doi.org/10.1108/IJTC-02-2020-0021

Mukonza, C., & Muposhi, A. (2025). *Efficacy of Green Marketing as a Sustainable Business Model: Multi-Case Study Analysis* (pp. 83–101). https://doi.org/10.1007/978-3-031-81627-7_6

Mutiarasari, N. A. G., Hartini, S., Kurniawati, M., & Sangadji, S. S. (2025). Evaluation of green marketing tourism implementation in destinations: A systematic literature review. *International Journal of Innovative Research and Scientific Studies*, *8*(1), 1299–1310. https://doi.org/10.53894/ijirss.v8i1.4581

Naeem, M. A., Karim, S., Rabbani, M. R., Bashar, A., & Kumar, S. (2023). Current state and future directions of green and sustainable finance: a bibliometric analysis. *Qualitative Research in Financial Markets*, *15*(4), 608–629. https://doi.org/10.1108/QRFM-10-2021-0174

Nayak, A., Satpathy, I., & Poddar, S. (2024). The radical transformation: Leveraging green marketing's potential for a sustainable future. In *Green Transition Impacts on the Economy, Society, and Environment* (pp. 166–181). IGI Global. https://doi.org/10.4018/979-8-3693-3985-5.ch010

Ofori, D. (2021). *Opportunities and Challenges of Green Marketing* (pp. 251–276). https://doi.org/10.1007/978-3-030-74065-8_11

Pham, H. N., Thai, N. T., Heffernan, T. W., & Reynolds, N. (2024). Environmental Policies and the Promotion of Pro-Environmental Consumer Behavior: A Systematic Literature Review. *Journal of Macromarketing*, *44*(1), 30–58. https://doi.org/10.1177/02761467231201507

Purwanto, F. X. A., Harahap, N., Khusaini, Moh., Ciptadi, G., Aminuddin, M. F., & Badriyah, N. (2024). The Influence of Regulations on Green Marketing Through Consumer Behavior in Shrimp Exporting Companies. *Revista de Gestão Social e Ambiental*, *18*(9), e07578. https://doi.org/10.24857/rgsa.v18n9-114

Rajapakse, R. M. D. A. P., Azam, S. M. F., & Khatibi, A. (2022). Towards Green Credentials of SMEs: Qualitative Insights on Barriers to Green Responsiveness from a Developing Economy. *International Journal of Applied Economics, Finance and Accounting*, *14*(1), 15–24. https://doi.org/10.33094/ijaefa.v14i1.635

Rosenow, J., Gibb, D., Nowak, T., & Lowes, R. (2022). Heating up the global heat pump market. *Nature Energy*, *7*(10), 901–904. https://doi.org/10.1038/s41560-022-01104-8

Sana, S. S. (2020). Price competition between green and non green products under corporate social responsible firm. *Journal of Retailing and Consumer Services*, *55*. https://doi.org/10.1016/j.jretconser.2020.102118

Shabbir, M. S., Bait Ali Sulaiman, M. A., Hasan Al-Kumaim, N., Mahmood, A., & Abbas, M. (2020). Green Marketing Approaches and Their Impact on Consumer Behavior towards the Environment—A Study from the UAE. *Sustainability*, *12*(21), 8977. https://doi.org/10.3390/su12218977

Shi, Y., & Ge, J. (2025). The role of government fiscal and tax incentives in green technology innovation and enterprise development: implications for human health and hygiene. *Frontiers in Public Health*, *12*. https://doi.org/10.3389/fpubh.2024.1502856

Singh, B., Kaunert, C., Lal, S., Arora, M. K., Wongmahesak, K., Gautam, R., & Ravesangar, K. (2024). *Green Businesses in the Green Economy* (pp. 17–36). https://doi.org/10.4018/979-8-3693-7570-9.ch002

Taufique, K. M. R., & Vaithianathan, S. (2018). A fresh look at understanding Green consumer behavior among young urban Indian consumers through the lens of Theory of Planned Behavior. *Journal of Cleaner Production*, *183*, 46–55. https://doi.org/10.1016/j.jclepro.2018.02.097

Totok Suyoto, Y., Purwanto, E., Pitaloka, E., Dwianika, A., & Ellianna Ristanti, V. (2024). Exploring Green Marketing Research through Bibliometrics. *E3S Web of Conferences*, *571*, 02010. https://doi.org/10.1051/e3sconf/202457102010

Tzanidis, T., Magni, D., Scuotto, V., & Maalaoui, A. (2024). B2B green marketing strategies for European firms: Implications for people, planet and profit. *Industrial Marketing Management*, *117*, 481–492. https://doi.org/10.1016/j.indmarman.2024.01.018

Usman, B. M., Johl, S. K., & Khan, P. A. (2024). Fusion of green governance for sustainable development and world ecology: A tempting systematic review and bibliometric analysis. *Journal of Open Innovation: Technology, Market, and Complexity*, *10*(3), 100309. https://doi.org/10.1016/j.joitmc.2024.100309

van Tonder, E., Fullerton, S., & de Beer, L. T. (2020). Cognitive and emotional factors contributing to green customer citizenship behaviours: a moderated mediation model. *Journal of Consumer Marketing*, *37*(6), 639–650. https://doi.org/10.1108/JCM-06-2019-3268

Xu, Y., Liu, C., Zhao, S., & Wei, F. (2022). Subsidizing high-quality remanufactured products for sustainability. *Environmental Science and Pollution Research*, *30*(11), 29029–29042. https://doi.org/10.1007/s11356-022-24183-2

Xue, J., He, Y., Gaopeng, Xu, H., & Gong, Z. (2023). Under the ecological label policy: Supply chain Heterogeneous product innovation strategies for green marketing. *Journal of Cleaner Production*, *428*, 139370. https://doi.org/10.1016/j.jclepro.2023.139370

Yi, Y., Wang, Y., Fu, C., & Li, Y. (2022). Taxes or subsidies to promote investment in green technologies for a supply chain considering consumer preferences for green

products. *Computers & Industrial Engineering*, *171*, 108371. https://doi.org/10.1016/j.cie.2022.108371

Zhang, S., Wu, Z., Dou, W., & Wang, Y. (2025). Do government subsidies promote enterprise green innovation? Evidence from listed companies in China. *Applied Economics*, *57*(10), 1124–1144. https://doi.org/10.1080/00036846.2024.2311069

Zhao, L., & Chen, Y. (2019). Optimal Subsidies for Green Products: A Maximal Policy Benefit Perspective. *Symmetry*, *11*(1), 63. https://doi.org/10.3390/sym11010063