Sustainability Marketing and AI: Targeting Conscious Consumers with Green Messages

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Abstract

This study investigates how sustainability marketing and artificial intelligence are combined to target conscious consumers with green messages. Using a systematic literature review, the paper synthesises empirical and conceptual research on sustainable marketing strategies, green consumer behaviour, and artificial intelligence enabled personalisation across digital touchpoints. The review shows that embedding environmental and social responsibility in core brand positioning, supported by sustainable brand equity and marketing innovation, can strengthen loyalty, trust, and market performance among conscious consumers. At the same time, the findings highlight substantial heterogeneity in green consumer responses, driven by differences in environmental concern, perceived green value, social norms, and perceived behavioural control, which underscores the need for nuanced segmentation and tailored sustainability communication. Finally, the review demonstrates that artificial intelligence can enhance the precision and timeliness of green targeting, but also raises critical risks related to privacy, opacity, bias, and sophisticated greenwashing. The study concludes with implications for responsible governance and future research in marketing and public policy.

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1. Introduction

Growing public concern about climate change, biodiversity loss, and resource depletion has strengthened demand for brands that demonstrate credible environmental and social responsibility. This shift has given rise to a growing segment of conscious consumers who evaluate firms not only on price and quality but also on their sustainability performance and communication. Sustainable marketing responds to this change by reframing the marketing mix around long term value creation for people and planet, using green messages to signal authentic commitments rather than short term promotional claims. Studies show that when sustainable marketing assets such as sustainable brand equity and marketing innovation are aligned with a clear sustainability orientation, firms can build competitive advantage, stronger loyalty, and more favourable market performance (Hussain et al., 2020; Reddy et al., 2023).

Research on green consumer behaviour also highlights that conscious consumers are heterogeneous in terms of environmental concern, values, and perceived green value. These psychological factors shape how different segments interpret and respond to green messages. Evidence from young consumer markets, for example, shows that environmental concern and perceived green value significantly influence green attitudes and purchase intentions, and that these relationships can vary across demographic groups such as gender (Amalia et al., 2021). Other work on green marketing in fast moving consumer goods finds that consumers with high environmental knowledge and strong green values are more responsive to credible eco claims and eco labels, while vague or unsubstantiated

messages can trigger scepticism (Reddy et al., 2023). These findings underline the importance of tailoring sustainability communication to specific value structures and identity motives within the conscious consumer segment, and of designing green messages that reduce perceptions of greenwashing.

At the same time, advances in artificial intelligence are transforming how such targeting and message tailoring can be executed. AI driven systems allow marketers to analyse large scale behavioural and contextual data, identify eco oriented micro segments, and deliver personalised green content across digital touchpoints in real time (Bashynska, 2023). Conceptual work on the emerging "feeling economy" argues that as AI increasingly takes over analytical tasks, human marketers can focus more on empathy, ethical judgement, and the design of meaningful value propositions, including credible sustainability narratives that resonate emotionally with consumers (Huang & Rust, 2019). Together, these developments open a promising but underexplored space where AI enabled personalisation can be used to align green messages with the specific concerns of conscious consumers, potentially amplifying support for sustainable businesses. At the same time, the power of AI to profile and target environmentally concerned individuals raises critical questions about privacy, bias, and the risk of sophisticated greenwashing, making it essential to understand how sustainability marketing and AI can be combined in ways that are both effective and responsible.

2. Literature Review

Sustainable marketing research shows that positioning, branding, and communication strategies that explicitly integrate environmental and social concerns can strengthen consumer support for firms seen as genuinely responsible. Peterson et al. (2021) find that sustainable marketing activities enhance consumer support for sustainable businesses by aligning brand promises with pro-environmental norms and signalling long-term commitment rather than opportunistic promotion. This work underscores that conscious consumers increasingly reward brands that embed sustainability into their core value proposition, not just into isolated campaigns.

A large body of green consumer behaviour research further explains why responses to green messages are heterogeneous. Meta analytic evidence indicates that green purchase intention is driven most strongly by green perceived value, favourable attitudes, and green trust, suggesting that consumers must believe sustainability claims are both personally beneficial and credible before they translate into action (Zhuang et al., 2021). Complementing this, Nguyen et al. (2023) show that determinants such as environmental concern, social norms, and perceived behavioural control vary across contexts, implying that green messages need to be tailored to local cultural and market conditions rather than relying on generic appeals. Together, these studies highlight that effective sustainability communication requires nuanced segmentation of conscious consumers and congruence between message content, audience values, and perceived efficacy.

Recent work connects these developments to the rise of artificial intelligence in marketing. Hermann (2021) argues that AI can be both a supporter and a threat

to sustainable consumption: algorithmic targeting and recommendation systems can prioritise green options and reduce information overload, but they can also intensify over consumption or reinforce status oriented choices if optimisation is purely profit driven. More broadly, Davenport et al. (2020) show that AI is reshaping the marketing function through predictive analytics and hyper-personalisation, while simultaneously raising concerns about consumer privacy, opacity, and bias. Taken together, this literature suggests that using AI to target conscious consumers with green messages is promising but normatively ambivalent: its contribution to sustainability depends on whether firms embed ethical safeguards, transparency, and genuine sustainability goals into the design of AI driven marketing systems. To clarify how prior studies explain consumer support for sustainable businesses, drivers of green purchase intention, and the emerging role of artificial intelligence in sustainability oriented marketing, table 2.1 summarizes the key referenced articles, their titles, and their main findings.

Table 2.1 Prior Research

Author(s) and Year	Article Title	Key Findings (Results)
Davenport, Guha, Grewal, and Bressgott (2020)	How Artificial Intelligence Will Change The Future of Marketing	This article is conceptual and proposes that artificial intelligence will significantly reshape marketing strategy and customer behavior. It develops a multidimensional framework that integrates three key dimensions of AI impact, namely intelligence level, type of marketing task, and whether AI is embedded in a robot, to explain how different AI applications will influence marketing outcomes. The paper also outlines a research agenda emphasizing that the diffusion of AI raises major governance

		challenges, especially regarding consumer privacy, algorithmic bias, and marketing ethics. Overall, it argues that AI is likely to be most effective when it augments human managers' decision-making rather than fully replacing them, because human oversight is important for judgment, accountability, and responsible use.
Hermann (2021)	Artificial Intelligence in Marketing: Friend or Foe of Sustainable Consumption?	This article is conceptual (not empirical) and concludes that AI in marketing is a double edged sword for sustainability. It argues AI can increase consumption and environmental impacts when optimized mainly for sales (for example, through recommender systems), but it can also support sustainable consumption if designed ethically across the marketing mix by guiding sustainable product design, improving targeting and distribution of green options, and using communication tools (such as footprint feedback) to reduce psychological barriers and help consumers consume better but less.
Peterson, Minton, Liu, and Bartholomew (2021)	Sustainable Marketing and Consumer Support for Sustainable Businsses	Using an online survey of 304 United States consumers and structural equation modeling, the study finds that nature based values are the strongest positive driver of consumer support for sustainable businesses. Support is also significantly increased by positive attitudes toward firm benevolence and by concern about the ethicality of firms' marketplace practices, although these effects are weaker than nature-based values. In contrast, social justice values and perceptions of business contributions to personal quality of life do not show a significant influence on support, suggesting that sustainable marketing programs may be most effective when they align sustainability initiatives with consumers' nature-oriented values and credible signals of benevolence and ethical conduct.

Zhuang, Luo, and Riaz (2021)	On the Factors Influencing Green Purchase Intention: A Meta Analysis Approach	Based on a systematic review and a meta-analysis of 54 empirical studies, this research finds that consumers' green purchase intention is most strongly and positively shaped by green perceived value, favorable attitudes toward green products, and green trust. In addition, key behavioral and social drivers, including perceived behavioral control, perceived consumer effectiveness, and subjective norms, show strong positive relationships with green purchase intention, indicating that both personal capability beliefs and social pressure/support matter. The study also reports that collectivism positively influences green purchase intention, while green perceived risk significantly reduces it. Overall, the results suggest firms can increase green purchase intention by strengthening perceived value and credibility, reducing perceived risks, and leveraging social influence and consumer efficacy cues.
Nguyen, Nguyen, Nguyen, Nguyen, Nguyen, and Le (2023)	Determinants of green consumer behavior: A case study from Vietnam	Using survey data from 231 consumers in Vietnam and analyzing the model with reliability tests, exploratory factor analysis, and structural equation modeling, the study finds that attitudes toward green products, social norms, and environmental concerns all have significant positive effects on green consumption behavior. Among these predictors, environmental concern emerges as the most influential driver, indicating that consumers' worry about environmental degradation is a particularly strong motivator for choosing green products. Overall, the results imply that firms can strengthen green purchasing in Vietnam by building favorable attitudes, leveraging normative influence, and emphasizing environmental problem solution messages that resonate with consumers' environmental concerns.

3. Methods

This study employs a systematic literature review (SLR) to synthesise existing knowledge on how sustainability marketing and artificial intelligence are used to target conscious consumers with green messages. The review followed a structured protocol comprising planning, searching, screening, and synthesis stages. First, a research framework was defined that focused on three core constructs: (1) sustainable marketing strategies and green communication, (2) conscious or environmentally oriented consumer segments, and (3) AI-enabled targeting and personalisation in marketing. Based on this framework, a set of search strings combining keywords such as "sustainable marketing", "green advertising", "conscious consumers", "green consumer behaviour", "artificial intelligence in marketing", "AI-based targeting", and "personalised green messages" was developed. These search strings were applied to major academic databases (such as Scopus, Web of Science, and Google Scholar) to identify peer reviewed journal articles. The initial pool of studies was screened in two stages: first by titles and abstracts to remove clearly irrelevant publications, and then by full text reading to ensure that each study explicitly addressed at least one aspect of sustainability marketing or green communication in combination with consumer response and/or AI-driven marketing practices. Only empirical and conceptual articles published in reputable, peer-reviewed journals were retained, while conference papers, dissertations, editorials, book chapters, and non-scholarly sources were excluded. A data extraction form was used to capture key information from each article, including research objectives, theoretical lenses, methodological approach, context,

operationalisation of conscious or green consumers, type of sustainability message, and role of AI or digital analytics in targeting. The selected studies were then analysed using qualitative content analysis to identify recurring themes, patterns, and gaps, which informed the subsequent structuring of the literature review and the formulation of implications for future research and managerial practice.

4. Results and Discussion

The systematic review identifies a first theme around the strategic role of sustainable marketing in building enduring relationships with conscious consumers. Across the selected studies, firms that embed environmental and social responsibility into their core positioning and brand architecture rather than relying on isolated green campaigns report stronger loyalty, brand equity, and market outcomes (Hussain et al., 2020; Peterson et al., 2021; Reddy et al., 2023). These results support the argument that sustainable marketing assets, such as sustainable brand equity and marketing innovation, create competitive advantage when they are consistently aligned with a clear sustainability orientation. In this sense, green messages function not only as communication tools but as signals of long term commitment that help conscious consumers differentiate between genuinely responsible firms and those engaging in superficial promotion.

A second theme concerns the heterogeneity of conscious consumers and the conditions under which green messages translate into attitudes and behaviour. Evidence shows that environmental concern, perceived green value, and green trust are key psychological drivers of green purchase intention, but their effects vary

across segments such as youth and gender groups (Amalia et al., 2021; Zhuang et al., 2021). Studies conducted in different cultural contexts further emphasise the role of social norms and perceived behavioural control, indicating that local cultural and market conditions shape how sustainability claims are interpreted (Nguyen et al., 2023). Taken together, these findings suggest that generic, one size fits all sustainability appeals are unlikely to be effective. Instead, sustainability communication needs to be tailored to specific value structures and identity motives, with credible eco labels and concrete environmental benefits helping to reduce scepticism and perceptions of greenwashing (Reddy et al., 2023).

The third theme relates to the integration of artificial intelligence as an enabler of more precise and dynamic green targeting. AI driven systems allow marketers to process large volumes of behavioural and contextual data, identify eco oriented micro-segments, and deliver personalised green content across multiple digital touchpoints in real time (Davenport et al., 2020; Bashynska, 2023). This technical capacity complements the need for nuanced segmentation identified in green consumer research, indicating that AI can help match specific green messages to the most receptive conscious consumers at the most relevant moments. Conceptual work on the "feeling economy" suggests that as AI assumes routine analytical tasks, human marketers can redirect their efforts toward empathy, ethical judgement, and the crafting of emotionally resonant sustainability narratives (Huang & Rust, 2019), potentially deepening the quality of engagement with conscious consumers.

However, the review also reveals that this AI sustainability nexus is normatively ambivalent. While algorithmic recommendation and targeting can

prioritise sustainable options and reduce information overload, they can also intensify over-consumption or reinforce status-oriented choices if optimisation criteria remain narrowly profit driven (Hermann, 2021). Concerns about privacy, opacity, and bias in AI based marketing practices raise the possibility that sophisticated personalisation of green messages may be perceived as manipulative, particularly by highly informed and sceptical conscious consumers (Davenport et al., 2020). Overall, the evidence suggests that AI-enabled sustainability marketing has substantial potential to amplify support for responsible brands, but this potential can only be realised when firms embed transparent governance, ethical safeguards, and genuine sustainability goals into the design and deployment of AI systems.

5. Conclusion

This study shows that sustainability marketing and artificial intelligence together create both an opportunity and a responsibility for firms targeting conscious consumers with green messages. The synthesis of prior research indicates that when sustainability is embedded in core brand positioning and supported by sustainable brand equity and marketing innovation, firms are more likely to gain competitive advantage, stronger loyalty, and favourable market outcomes among consumers who actively evaluate environmental and social performance. At the same time, the review highlights that conscious consumers are highly heterogeneous: environmental concern, perceived green value, green trust, social norms, and perceived behavioural control interact in different ways across segments and cultural contexts. As a result, generic sustainability campaigns risk being ineffective or even

counterproductive if they fail to align with specific value structures and identity motives, or if they trigger scepticism and accusations of greenwashing.

The integration of AI into marketing further amplifies these dynamics. On one hand, AI driven systems provide powerful tools to analyse behavioural and contextual data, identify eco oriented micro segments, and deliver personalised green content across digital touchpoints in ways that closely match the segmentation needs identified in green consumer research. On the other hand, the same capabilities raise ethical concerns about privacy, opacity, bias, over consumption, and more sophisticated forms of greenwashing. The overall conclusion is that AI enabled sustainability marketing can significantly strengthen the relationship between responsible brands and conscious consumers only if it is governed by explicit ethical safeguards, transparency, and genuinely sustainability oriented objectives. Future research should therefore explore concrete governance frameworks, regulatory mechanisms, and design principles that ensure AI supported green targeting not only improves marketing effectiveness but also contributes meaningfully to environmental and social goals.

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