Shiv Shakti International Journal of Multidisciplinary and Academic Research
ISSN: 2278-5973 (Online) | Vol. 13, No. 3, (May 2025)
https://doi.org/10.5281/zenodo.15776551

Leveraging Artificial Intelligence to Engage Climate-Conscious Consumers through Sustainable Marketing Strategies

Surya Shekhar Vishal
Assistant Professor
Department of Management
Mangalmay Institute of Management and Technology, Greater Noida

Abstract

In today's dynamic marketing landscape, Artificial Intelligence (AI) is not just a tool for personalization and automation—it is rapidly becoming a catalyst for sustainability transformation. As climate change drives a shift in consumer priorities, brands are under increasing pressure to demonstrate environmental responsibility. This paper explores how AI can be leveraged to support climate-conscious marketing by tailoring eco-messaging, improving digital engagement, and fostering sustainable consumer behaviour. Using secondary data from industry reports, marketing case studies, and digital strategy insights, the paper uncovers how technologies such as predictive analytics, chatbots, and recommendation systems are being repurposed to promote green values. While the potential of AI in sustainability marketing is vast, it is not without challenges—issues such as greenwashing, data ethics, and consumer trust are critical. This paper proposes that a responsible and transparent integration of AI in marketing can support not just brand loyalty, but meaningful contributions to climate resilience.

Keywords: Artificial Intelligence, sustainable marketing, green consumer behaviour, personalization, data ethics, climate branding

Introduction

Climate awareness has emerged as a dominant force shaping modern consumption. From low-carbon transportation choices to demand for plastic-free packaging, today's consumers—particularly Gen Z and millennials—are deeply influenced by sustainability values. At the same time, marketing is undergoing a technology transformation, with Artificial Intelligence (AI) at its core.

AI enables highly personalized, data-driven strategies that allow marketers to engage customers at the right moment, through the right channel, with the right message. When applied to sustainability goals, AI becomes a powerful enabler of climate-conscious marketing—whether through tailored product recommendations, automated educational chatbots, or real-time sentiment tracking around eco-issues.

This paper aims to explore how marketers are using AI to build relationships with eco-conscious consumers and promote sustainable consumption patterns. It also examines the limitations of current strategies and suggests a path forward for responsible, impactful, and transparent AI-driven climate marketing.

Corresponding Author: Surya Shekhar Vishal, ssmwdv@gmail.com

Literature Review

AI and sustainability have traditionally been treated as separate domains in marketing literature. However, recent studies are beginning to merge the two. Kumar and Jha (2022) highlight the role of AI in creating personalized sustainability messages that align with consumer values. Wang & Lin (2021) argue that AI systems can be trained to detect green sentiment online, allowing brands to respond with eco-relevant content.

Accenture (2023) reported that sustainability-linked personalization through AI increased click-through rates by 27% and brand loyalty by 19%. Similarly, Salesforce found that 65% of consumers trust green messages more when AI tools show transparency in data use.

Yet challenges remain. Critics warn of digital greenwashing—when AI tools exaggerate eco-claims or recommend "green" products that lack credible certifications. Others raise concerns about biased algorithms that stereotype certain consumers or promote only high-end eco-products, reducing inclusivity.

Emerging Indian brands like boAt and Mamaearth are pioneering the use of AI in eco-marketing, deploying chatbots that educate consumers on product recyclability or skin-safe ingredients and offering personalized product bundles based on sustainability preferences.

Objectives

1. To examine the role of AI in personalizing sustainable marketing.
2. To evaluate how AI influences green consumer behaviour using case-based secondary data.
3. To identify ethical challenges in AI-driven climate marketing.
4. To provide recommendations for marketers using AI for climate-positive engagement.

Methodology

This study adopts a qualitative secondary data analysis approach. The data sources include:

- Marketing campaign analyses from HubSpot, Think with Google, and Brand Equity
- Case studies from brands such as IKEA, Mamaearth, Tata Consumer, and The Body Shop
- Reports from Salesforce, Accenture, EY, and Nielsen on AI marketing trends and consumer trust
- Academic research and white papers on green branding and AI ethics
- Publicly available chatbot scripts, email templates, and user feedback from digital campaigns

The data was thematically analyzed across four key domains: personalization, engagement, ethics, and climate impact.

Findings and Discussion

1. AI-Personalization Enhances Green Engagement

AI-enabled recommendation systems are being used to promote sustainable products, such as bamboo toothbrushes or low-emission appliances, based on browsing history or values inferred from online behaviour. This has increased both conversion and retention.

2. Chatbots Are Emerging Climate Educators

AI chatbots—such as Mamaearth's packaging assistant—now answer FAQs about how to recycle bottles, assess carbon offsets, and learn about eco-ingredients. These tools boost brand transparency and build environmental trust.

3. Consumer Trust is Data-Dependent
Brands that disclose how AI collects and uses sustainability data (e.g., recommending local, low-footprint products) are seen as more credible. Over-personalization without opt-in consent reduces engagement.

4. Ethical Challenges: Bias and Greenwashing
Algorithms may prioritize products labelled "eco-friendly" based on marketing, not science. Without third-party certification, AI can inadvertently promote greenwashed options. Also, AI models may overlook underserved consumers with limited access to green products.

5. Indian Adoption Is in Early Stages
While brands are experimenting with AI-led climate messaging, most campaigns are still basic (e.g., pushing green messages on Earth Day). Strategic, year-round personalization around sustainability remains limited but promising.

Strategic Recommendations

- Embed sustainability filters into AI algorithms to recommend eco-certified products.
- Train AI chatbots to educate users about carbon footprints, recycling, and sustainable living tips.
- Ensure ethical AI design by avoiding greenwashing, stereotyping, or misleading eco-claims.
- Use consumer opt-ins to create customized sustainability profiles.
- Establish third-party validation for all AI-promoted sustainability claims.
- Develop integrated ESG-AI dashboards to monitor how AI supports climate goals in real time.

Conclusion

Artificial Intelligence, when embedded responsibly into the core of marketing strategies, offers transformative potential for sustainability communication. This paper has established that AI tools—ranging from real-time chatbots to advanced recommendation engines—can be employed not only to optimize marketing performance but also to advance climate-conscious engagement.

However, the effectiveness of such initiatives depends on ethical implementation, cross-functional collaboration, and a strong alignment between AI capabilities and genuine environmental commitment. As climate change continues to influence consumer expectations, marketers must evolve from persuasive sellers to purposeful educators.

AI can help bridge this gap, but it must be guided by transparent data practices, sustainable product strategies, and verifiable claims. In conclusion, AI-driven marketing—if executed with climate intelligence—can play a critical role in empowering consumers to make greener choices and shaping a more sustainable market future.

References

Kumar, V., & Jha, R. (2022). AI-Enabled Sustainable Marketing: A Review and Roadmap. Journal of Business Strategy.

Wang, M., & Lin, Y. (2021). AI for Good: Personalization of Sustainability Communications. Journal of Interactive Marketing.

Accenture (2023). Reimagining AI for Sustainability and Brand Equity.

Salesforce (2022). The State of AI in Marketing: Green Messaging Edition.

Mamaearth (2023). Digital Sustainability Engagement: Case Brief.

Think with Google (2023). AI and Climate Messaging: Insights from APAC.

ASCI (2022). Green Marketing Guidelines in Digital Advertising.

EY (2022). Consumer Trust and Eco-Branding in India.

HubSpot (2023). Chatbots for Climate: Marketing Automation Case Studies.

IBM Watson (2022). AI Use Cases in Green Retail Engagement.