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# ARTIFICIAL INTELLIGENCE-ENABLED GREEN MARKETING AND CONSUMER AWARENESS TOWARDS GREEN PRODUCTS: A STUDY ON SUSTAINABLE PURCHASE INTENTION

***Mrs. P. MOHANAPRIYA, Research Scholar, PG and Research Department of Commerce, Erode Arts and Science College (Autonomous), Erode.**

****Dr. K. SUBRAMANIAM, PG and Research Department of Commerce, Erode Arts and Science College (Autonomous), Erode.**

## ABSTRACT

Environmental sustainability has emerged as a major concern for consumers, businesses and policymakers. Climate change, environmental pollution, depletion of natural resources and increasing waste have created the need for responsible production and sustainable consumption. Green marketing has therefore become an important strategy for organizations seeking to communicate the environmental benefits of their products and encourage consumers to adopt environmentally responsible purchasing practices. At the same time, the rapid development of Artificial Intelligence (AI) is transforming marketing through personalization, recommendation systems, intelligent chatbots, predictive analytics and AI-generated advertising content.

This conceptual paper examines the role of Artificial Intelligence-enabled green marketing in developing consumer awareness towards green products and encouraging sustainable purchase intention. Enhanced consumer awareness may subsequently influence consumers' willingness to purchase environmentally friendly products.

The paper develops a conceptual framework linking AI-enabled green marketing with consumer awareness and sustainable purchase intention. The study further discusses theoretical foundations, research propositions, managerial implications and future research directions. The paper concludes that AI can become an effective instrument for green marketing when it is used to provide accurate, transparent, relevant and consumer-oriented sustainability information.

**Keywords:** Artificial Intelligence, Green Marketing, Consumer Awareness, Green Products, Sustainable Purchase Intention, Green Consumer Behaviour, Sustainable Consumption.

## 1. INTRODUCTION

Environmental sustainability has become an important issue in contemporary society. Climate change, global warming, environmental pollution, plastic waste, resource depletion and biodiversity loss have increased the need

for sustainable production and consumption. Businesses are increasingly expected not only to generate economic value but also to demonstrate environmental responsibility.

Consumers are also becoming more conscious of the environmental consequences of their purchasing decisions. This has resulted in growing interest in green products, including organic products, energy-efficient appliances, recyclable products, reusable products and products manufactured using environmentally responsible materials.

However, awareness of environmental issues does not always translate into actual green purchasing behaviour. Consumers may have positive environmental attitudes but still purchase conventional products because of price, convenience, availability, product quality or lack of reliable information. Therefore, effective communication is essential to convert environmental awareness into sustainable consumption.

Therefore, AI has the potential to make green marketing more personalized, informative and interactive. At the same time, it creates concerns relating to privacy, transparency, credibility and greenwashing.

## 2. GREEN MARKETING

Green marketing refers to marketing activities that focus on the environmental characteristics of products, services and organizational practices.

It includes:

Eco-friendly product development

Sustainable raw materials

Recyclable packaging

Green advertising

Environmental labelling

Waste reduction

Environmental education

Green marketing should not merely communicate that a product is environmentally friendly. It should provide meaningful and credible information regarding how and why the product contributes to environmental sustainability.

This is particularly important because consumers may find it difficult to evaluate environmental claims. If organizations make exaggerated or unsupported claims, consumers may develop greenwashing scepticism.

Therefore, credibility is an essential element of successful green marketing.

## 3. ARTIFICIAL INTELLIGENCE IN MARKETING

Artificial Intelligence refers to technologies that enable computer systems to perform activities involving learning, prediction, language processing, pattern recognition and decision-making.

AI is increasingly being used in:

Customer segmentation

Personalized advertising

Product recommendations

Chatbots

Predictive analytics

Content generation

Customer relationship management

Consumer behaviour analysis

Digital advertising

The integration of these capabilities with green marketing creates the concept of AI-enabled green marketing.

For example, an AI-powered shopping platform can recommend an energy-efficient appliance instead of a conventional appliance. An AI chatbot can answer questions regarding recyclable packaging or environmental certifications. AI can also personalize sustainability messages according to consumers' interests.

Thus, AI can transform green marketing from traditional mass communication into more personalized and interactive communication.

## 4. AI-ENABLED GREEN MARKETING

AI-enabled green marketing refers to the application of Artificial Intelligence technologies to communicate, personalize, promote and deliver information about environmentally sustainable products and practices.

### 4.1 AI-Based Personalization

AI can analyse consumer preferences and provide personalized recommendations.

For example, consumers interested in sustainable fashion may receive recommendations for products made from recycled or organic materials.

Recent research demonstrates that perceived relevance is an important mechanism through which AI personalization can influence sustainable purchase intention. However, privacy concerns can reduce the effectiveness of personalization, while transparency can strengthen it.

### 4.2 AI-Based Green Product Recommendations

AI recommendation systems can help consumers compare conventional and environmentally friendly alternatives.

This reduces the amount of information consumers need to process and can make sustainable choices easier.

### 4.3 AI Chatbots

AI-powered chatbots can provide consumers with instant information regarding:

Product materials

Energy efficiency

Recycling

Packaging

Environmental benefits

Sustainability certifications

Such interactive communication can improve consumer awareness.

### 4.4 Transparency

Transparency is critical when AI is used in sustainability communication.

Consumers may want to know:

How AI recommendations are generated.

What consumer data are used.

Whether content is AI-generated.

Whether environmental claims are verified.

Recent research on AI-generated green advertising also suggests that disclosure of AI involvement can influence brand attitudes and purchase intentions.

## 5. CONSUMER AWARENESS TOWARDS GREEN PRODUCTS

Consumer awareness refers to consumers' knowledge and understanding of environmental issues and environmentally friendly products.

In the context of green products, awareness includes:

Awareness of eco-friendly products.

Knowledge of environmental benefits.

Awareness of recyclable packaging.

Awareness of recycling.

Therefore:

Green Marketing Communication → Consumer Awareness → Sustainable Evaluation

becomes an important pathway in sustainable consumer behaviour.

## 6. SUSTAINABLE PURCHASE INTENTION

Sustainable purchase intention refers to the willingness of consumers to purchase products that are environmentally and socially responsible.

It may be reflected through:

Intention to purchase green products.

Preference for eco-friendly products.

Willingness to recommend green products.

Willingness to change consumption habits.

## 7. REVIEW OF LITERATURE

### 7.1 AI and Green Marketing

Recent research has directly examined AI-enabled green marketing and found that AI-enabled strategic, tactical and internal green marketing orientations can contribute to customer trust, satisfaction and green intention. The study used PLS-SEM and Necessary Condition Analysis, demonstrating the emerging empirical importance of AI in sustainable marketing.

### 7.2 AI Personalization and Sustainable Purchase

Qadri, Ahmed Moustafa and Waqas (2026) examined AI personalization in eco-friendly advertising. Their research found that perceived message relevance mediates the relationship between AI personalization and sustainable purchase intention. Privacy concerns weakened the personalization pathway, while AI transparency strengthened it.

### 7.3 AI-Generated Green Marketing Content

Research published in the Journal of Retailing and Consumer Services examined consumer reactions to AI-generated green marketing content. The findings indicate that moderate green content can increase pro-

environmental perceptions and purchase intention, while excessive green content can increase scepticism towards greenwashing.

### 7.4 AI and Consumer Awareness

A 2026 study on AI-driven sustainable marketing reported that AI-based sustainable marketing strategies can influence consumer awareness, trust and purchase intention, highlighting the importance of transparent and personalized sustainability communication.

MRI India Journals

## 8. RESEARCH GAP

The existing literature has examined green marketing, environmental awareness, AI personalization, AI-generated advertising and sustainable purchase intention from different perspectives.

Most importantly, consumer awareness can act as an important bridge between AI-enabled sustainability communication and consumer purchase intention.

Therefore, this paper attempts to integrate these constructs into a unified framework.

## 9. NEED FOR THE STUDY

The study is needed because:

AI is rapidly transforming marketing communication.

Green products require effective consumer education.

Consumers are increasingly exposed to sustainability claims.

Consumers may have difficulty identifying genuine green products.

Greenwashing can reduce consumer trust.

## 10. OBJECTIVES OF THE STUDY

To examine the role of Artificial Intelligence in green marketing.

To understand consumer awareness towards green products.

To examine the conceptual relationship between AI-enabled green marketing and consumer awareness.

To examine the relationship between consumer awareness and sustainable purchase intention.

## 11. CONCEPTUAL FRAMEWORK

The proposed conceptual framework is:

**AI-ENABLED GREEN MARKETING**

- AI Personalization
- AI Product Recommendations
- AI Chatbots
- AI-Generated Green Content
- Accessibility of Sustainability Information
- AI Transparency

**CONSUMER AWARENESS TOWARDS GREEN PRODUCTS**

Environmental Knowledge

Green Product Awareness

Green Label Awareness

Sustainability Awareness

Greenwashing Awareness

## 12. PROPOSED RESEARCH PROPOSITIONS

Since the present paper is conceptual and does not use primary survey data, the relationships are presented as propositions rather than statistically tested hypotheses.

P1: AI-enabled green marketing positively influences consumer awareness towards green products.

P2: Consumer awareness towards green products positively influences sustainable purchase intention.

P3: AI-enabled green marketing positively influences sustainable purchase intention.

P4: Consumer awareness acts as an important mechanism linking AI-enabled green marketing with sustainable purchase intention.

P5: AI transparency strengthens the positive relationship between AI-enabled green marketing and consumer awareness.

## 13. THEORETICAL FOUNDATION

### 13.1 Elaboration Likelihood Model

The Elaboration Likelihood Model explains how consumers process persuasive information.

AI personalization can make green marketing messages more relevant to individual consumers. Greater relevance may encourage consumers to process sustainability information more carefully.

Recent research on AI personalization in eco-friendly advertising uses the Elaboration Likelihood Model to explain sustainable purchase responses.

### 13.2 Stimulus–Organism–Response Framework

The S–O–R framework can explain the proposed relationship:

- Stimulus: AI-enabled green marketing
- Organism: Consumer awareness, trust and perception
- Response: Sustainable purchase intention

## 14. MANAGERIAL IMPLICATIONS

14.1 For Green Product Manufacturers

Manufacturers should use AI to provide consumers with accurate information regarding environmental product attributes.

### 14.2 For Digital Marketers

AI can be used to personalize sustainability communication according to consumer interests.

### 14.3 For E-Commerce Platforms

AI recommendation systems can highlight environmentally friendly alternatives during online shopping.

### 14.4 For Brands

Brands should avoid unsupported environmental claims and provide evidence for sustainability statements.

### 14.5 For Consumer Education

AI chatbots can educate consumers about recycling, sustainable packaging and environmental benefits.

## 15. IMPLICATIONS FOR CONSUMERS

AI-enabled green marketing can provide consumers with:

Faster access to sustainability information.

Personalized green-product recommendations.

Product comparisons.

However, consumers should critically evaluate environmental claims rather than accepting all AI-generated information without verification.

## 16. IMPLICATIONS FOR POLICYMAKERS

Policymakers should encourage:

Transparent environmental claims.

Standardized green-product information.

Protection against greenwashing.

Responsible use of consumer data.

## 17. SUGGESTIONS

Based on the conceptual discussion, the following suggestions are proposed:

Companies should use AI to educate consumers, not merely persuade them.

Environmental claims should be supported by credible evidence.

AI recommendations should explain why a product is considered environmentally friendly.

Green marketing should focus on long-term consumer trust.

Businesses should integrate sustainability education into digital marketing.

## 18. LIMITATIONS

The present study is conceptual and does not contain primary survey data or statistical testing.

Therefore, the proposed relationships require empirical validation.

The conceptual framework can be tested in future studies using primary data from consumers.

## 19. SCOPE FOR FUTURE RESEARCH

Future studies can examine:

AI-enabled green marketing and consumer awareness.

AI chatbots and green purchase intention.

AI personalization and sustainable consumption.

AI-generated green advertising and greenwashing.

AI transparency and consumer trust.

Future empirical research can use Structural Equation Modelling (SEM), PLS-SEM, regression, mediation and moderation analysis.

## 20. CONCLUSION

Artificial Intelligence is transforming the marketing environment and creating new opportunities for organizations to communicate sustainability information. AI-based personalization, recommendation systems, chatbots, predictive analytics and generative AI can make green marketing more accessible, relevant and interactive.

At the same time, transparency and credibility are essential. Recent research demonstrates that AI personalization can support sustainable purchase intention when consumers perceive messages as relevant and when privacy and transparency concerns are appropriately addressed. Research also shows that excessive AI-generated green content can create greenwashing scepticism.

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3. Exploring Therefore, the effective use of AI-enabled green marketing should be based on:
4. Accuracy + Transparency + Relevance + Consumer Awareness
5. When these principles are integrated into marketing strategies, AI can potentially contribute to greater consumer awareness, stronger trust and more sustainable purchasing decisions.
6. The proposed framework provides a foundation for future empirical research examining the relationship between Artificial Intelligence-enabled green marketing, consumer awareness towards green products and sustainable purchase intention.