Impact of Green Marketing Practices on Consumer Behavior: A Study with Reference to Consumer Durable Goods in Ernakulam District, Kerala, India

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Abstract— In recent years, environmental sustainability has emerged as a critical concern for businesses, consumers, and policymakers. Green marketing practices have gained prominence as organizations strive to minimize their environmental impact while influencing consumer purchasing decisions. This study examines the effect of green marketing practices on consumer behavior with reference to consumer durable goods in Ernakulam District, Kerala. Primary data were collected from 369 consumers using a structured questionnaire to assess awareness levels, attitudes, and purchase behavior toward green products. The findings reveal that although environmental awareness among consumers is high, actual adoption of green durable goods is moderate due to price sensitivity and skepticism regarding green claims. The study also highlights the emerging role of artificial intelligence–enabled marketing tools in strengthening green communication and sustainable consumption.

Keywords— Green marketing, Consumer behaviour, Consumer durable goods, Sustainability, Artificial intelligence

I. INTRODUCTION

Green marketing has increasingly gained prominence as organizations respond to mounting environmental concerns such as climate change, environmental pollution, and the depletion of natural resources. In recent years, consumers have become more conscious of the environmental consequences of their purchasing decisions and expect business organizations to adopt responsible and sustainable practices. Consequently, firms are integrating environmental considerations into product design, pricing strategies, promotional activities, and distribution systems.

In the Indian context, rising environmental awareness, supportive government initiatives, and increased media attention have encouraged the adoption of green marketing practices across industries. The consumer durable goods sector assumes particular significance due to the long life cycle of products and their substantial contribution to energy consumption. Ernakulam District, being one of the major commercial and urban centres of Kerala, provides a relevant setting to examine how green marketing practices influence consumer behaviour.

In recent years, the integration of artificial intelligence (AI) in digital marketing has transformed the way firms communicate sustainability-related information to consumers. AI-enabled tools such as personalized recommendations, targeted advertisements, and data-driven content delivery play an increasingly important role in shaping consumer awareness, perceptions, and purchase decisions regarding green consumer durable goods.

II. REVIEW OF LITERATURE

Extant literature reveals that green marketing practices significantly influence consumer attitudes and purchase intentions.

According to the Theory of Planned Behavior proposed by Ajzen, consumer attitudes, perceived social expectations, and behavioral control play a crucial role in shaping environmentally responsible purchasing decisions.

Several empirical studies indicate that eco-labels, energy efficiency ratings, and environmentally responsible packaging positively influence consumer perceptions and brand credibility.

Studies conducted in emerging economies highlight certain constraints that limit green product adoption, including price sensitivity, limited availability, and a lack of consumer trust. Indian research findings suggest that while environmental awareness among consumers has increased, their willingness to pay a premium for green products remains moderate. Furthermore, growing concerns related to greenwashing and misleading environmental communication have adversely affected consumer confidence, underscoring the need for transparent marketing practices and reliable certification mechanisms.

III. RESEARCH GAP

Although extensive research on green marketing and consumer behaviour exists at national and international levels, comparatively fewer empirical studies have examined the subject at the district level, particularly in Kerala.

Most existing studies focus on fast-moving consumer goods or general green products, with limited emphasis on consumer durable goods. The present study seeks to address this gap by providing district-level empirical evidence from Ernakulam District, thereby contributing region-specific insights to the existing body of knowledge.

IV. OBJECTIVES OF THE STUDY

The present study has been undertaken with the following objectives:

1. To examine the level of environmental awareness among consumers of durable goods in Ernakulam District.
2. To analyse the impact of green marketing practices on consumer purchase behaviour with reference to consumer durable goods.
3. To identify the key barriers influencing the adoption of green consumer durable goods, including price sensitivity and trust in green claims.
4. To assess the role of artificial intelligence–enabled digital marketing tools in influencing consumer awareness and purchase decisions towards green consumer durable goods.
5. To suggest suitable measures for manufacturers and policymakers to promote sustainable consumption of consumer durable goods through effective green marketing strategies.

V. CONCEPTUAL FRAMEWORK OF THE STUDY

The conceptual framework of the present study is developed based on insights drawn from existing literature and the objectives of the research. Green marketing practices are treated as the independent variables and include green product attributes, green pricing, green promotion, and green distribution. These practices are expected to influence consumer purchase behaviour towards consumer durable goods.

Consumer awareness and environmental attitude are considered as intervening variables that shape the relationship between green marketing practices and consumer behaviour. In addition, artificial intelligence–enabled digital marketing tools are incorporated as a moderating variable. AI-based tools enhance the effectiveness of green marketing communication by facilitating personalized content delivery, improving access to environmental information, and increasing consumer engagement, thereby strengthening the influence of green marketing practices on consumer purchase decisions.

Table 1:
Factors Influencing Purchase Decision of Green Consumer Durable Goods

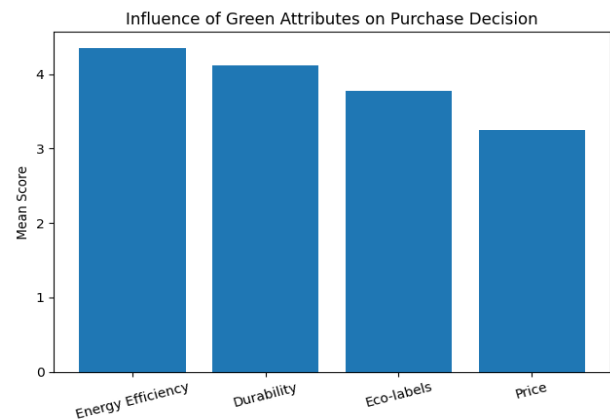| Factors	Mean Score	Rank
Energy Efficiency	4.35	I
Durability	4.12	II
Eco-labels	3.78	III
Price Sensitivity	3.25	IV

Figure 2: Influence of Green Attributes on Consumer Purchase Decision

This diagram represents green marketing practices influencing consumer purchase behavior. Consumer awareness and environmental attitude act as intervening variables, while artificial intelligence–enabled digital marketing tools moderate the relationship.
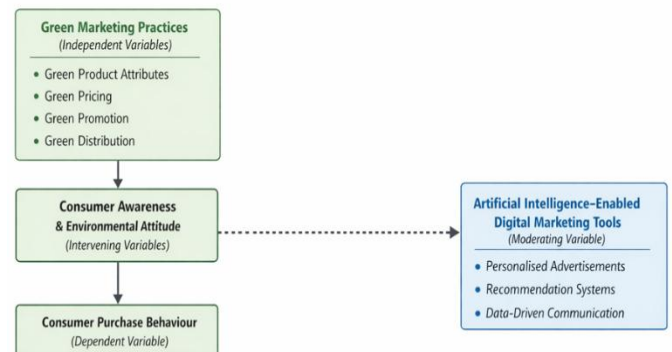

Figure 3: Conceptual Model of the Study

Figure 3 illustrates the conceptual model developed for the present study. The model depicts green marketing practices—namely green product attributes, green pricing, green promotion, and green distribution—as the independent variables influencing consumer purchase behaviour towards consumer durable goods. Consumer awareness and environmental attitude function as intervening variables that shape this relationship. Artificial intelligence–enabled digital marketing tools are incorporated as a moderating variable, strengthening the relationship between green marketing practices and consumer behaviour by facilitating personalized communication, improving access to environmental information, and enhancing consumer engagement.

VI. RESEARCH METHODOLOGY

The study adopts a descriptive research design to examine the impact of green marketing practices on consumer behaviour with reference to consumer durable goods in Ernakulam District. Primary data were collected from 369 respondents using a structured questionnaire. The Respondents were selected using a convenience sampling technique due to time and accessibility constraints.

The questionnaire was designed to capture information relating to demographic characteristics, environmental awareness, perceptions of green marketing practices, and purchase behaviour. Secondary data were collected from academic journals, books, government publications, and online databases. The collected data were analyzed using percentage analysis, mean score analysis, and appropriate statistical tools to derive meaningful interpretations and conclusions.

VII. DATA ANALYSIS AND INTERPRETATION

The analysis of primary data reveals that a majority of respondents possess a high level of environmental awareness and are familiar with concepts such as energy efficiency ratings, eco-labels, and environmentally friendly products. A significant proportion of respondents indicated that energy-saving features and durability strongly influence their purchase decisions for consumer durable goods.

However, the findings also indicate that price sensitivity remains a major constraint in the adoption of green consumer durable goods. Although respondents express positive attitudes towards environmentally responsible products, many are hesitant to pay a premium price. The analysis further reveals that promotional activities highlighting long-term cost savings and environmental benefits positively influence consumer perceptions.

The study also finds that AI-enabled digital marketing tools, such as targeted advertisements and personalized product recommendations, enhance consumer access to information related to green attributes. These tools improve awareness levels and positively influence purchase intention by providing relevant and customized sustainability-related information.

VIII. FINDINGS

Based on the analysis and interpretation of data, the following key findings have been identified:

a) The level of environmental awareness among consumers in Ernakulam District is relatively high.
b) Energy efficiency and durability are the most influential green attributes affecting purchase decisions for consumer durable goods.
c) Price sensitivity and skepticism regarding green claims act as major barriers to the adoption of green products.
d) Green promotional activities improve consumer perception but require greater transparency and credibility.
e) Artificial intelligence–enabled digital marketing tools significantly enhance consumer awareness and engagement, thereby positively influencing green purchase behaviour.

IX. SUMMARY

The study provides an empirical examination of the impact of green marketing practices on consumer behaviour with reference to consumer durable goods in Ernakulam District. It highlights the growing environmental awareness among consumers while identifying practical challenges that limit the adoption of green products. The study also underscores the importance of integrating technological tools, particularly artificial intelligence–enabled digital marketing, to enhance the effectiveness of green marketing strategies.

X. CONCLUSIONS AND RECOMMENDATIONS

The study concludes that green marketing practices play a significant role in influencing consumer behaviour towards consumer durable goods. While consumers demonstrate strong environmental concern, actual purchasing decisions are influenced by factors such as price, trust in green claims, and availability of products. Therefore, manufacturers should focus on transparent communication, credible eco-certification, and competitive pricing strategies.

The integration of artificial intelligence–enabled marketing tools can further strengthen green marketing effectiveness by offering personalized communication, improving consumer engagement, and enhancing trust in sustainability claims. Policymakers may support sustainable consumption by promoting awareness programmes and encouraging the adoption of eco-friendly technologies within the consumer durable goods sector.

XI. Scope For Future Research

Future studies may explore the application of advanced artificial intelligence techniques, such as machine learning–based consumer profiling and predictive analytics, to examine how real-time personalization of green marketing messages influences long-term consumer trust and sustainable purchase behaviour across different regions and product categories.

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