

# Exploring the Role of AI in Predicting Sustainable Consumer Behavior

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## ABSTRACT

The growing emphasis on sustainability has made it essential for businesses and policymakers to better understand and predict consumer behavior towards more eco-friendly choices. While artificial intelligence (AI), particularly machine learning and deep learning models, has shown promise in analyzing consumer data, there remains a lack of comprehensive understanding of how these technologies can forecast shifts in behavior toward sustainable consumption. This research explores the potential of AI in predicting consumer preferences for sustainable products and practices, with a specific focus on environmental factors. By examining how AI models process and interpret large datasets, this study aims to uncover patterns in consumer decision-making that favor sustainability. It will investigate how these AI techniques can be used to predict future trends in sustainable consumption and assist companies in adapting their marketing strategies to meet evolving consumer demands for environmentally conscious products. The results of this research will provide valuable insights for businesses seeking to promote responsible consumption and align their offerings with sustainability goals. Additionally, the findings will highlight the broader potential of AI in driving long-term behavioral shifts towards more sustainable consumption patterns.

**Keywords:** sustainable products, Consumer preference, Artificial intelligence

