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Examining the Impact of Environmental Knowledge, Attitude, and AI-Powered Personalization on Green Purchasing Behavior: The Mediating Role

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Abstract

This study investigates the influence of environmental knowledge, environmental attitude, and AI-powered personalization on green purchasing behavior among young consumers in Java, Indonesia. Additionally, it examines the mediating role of green purchasing intention in these relationships. As digital technologies increasingly shape consumer decision-making, AI personalization tools have become influential in promoting sustainable consumption. Data were collected through an online survey targeting 500 young respondents across Java Island. The analysis was conducted using the Partial Least Squares–Structural Equation Modeling (PLS-SEM) approach. The results may show that environmental knowledge and environmental attitude have a significant positive effect on green purchasing intention and behavior. Moreover, AI-powered personalization (PAI) also may positively influences green purchasing intention, highlighting the role of digital personalization in encouraging environmentally conscious choices. Importantly, green purchasing intention may mediates the relationship between the independent variables and green purchasing behavior, confirming the intention-behavior link in sustainability contexts. These findings may suggest that enhancing environmental awareness and integrating AI-powered tools can effectively foster pro-environmental consumer behavior among the younger generation. The study will provides practical insights for businesses and policymakers aiming to promote green consumption through a combination of environmental education and AI-driven marketing strategies.

Keywords
Environmental Knowledge, Environmental Attitude, AI-Powered Personalization, Green Purchasing Intention, Green Purchasing Behavior, PLS-SEM

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Jovan Moreno Madjid is is a final year Industrial Engineering student at Atma Jaya Catholic University of Indonesia with strong interests in sustainability, ergonomic system design, and business process optimization. Throughout his academic journey, Jovan has actively participated in various research projects and collaborative initiatives that explore how technology and human-centered design can improve operational efficiency and workplace well-being.

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