AI as Stimulus in E-Commerce Consumer Engagement: An Integrated SOR-TPB Framework Analysis of Shopee Indonesia

Erizkya Ayu Widyaningtyas

Department of Information Management, National Dong Hwa University, Hualien, Taiwan

Elaine Yi-Ling Wu

Department of Information Management, National Dong Hwa University, Hualien, Taiwan

Abstract

Artificial Intelligence (AI) tools increasingly enhance consumer engagement on e-commerce platforms, yet research on specific AI features' influence on user behavior in emerging markets remains limited. This study examines how AI tools—chatbots, image search, recommendation systems, and automated after-sales services—affect consumer engagement in Shopee Indonesia. We integrated the Stimulus-Organism-Response (SOR) model with the Theory of Planned Behavior (TPB), conceptualizing AI functionalities as stimuli that shape psychological states (attitudes, subjective norms, and perceived behavioral control), which then influence engagement intentions and behavior—using structural equation modeling on data from 300 Shopee Indonesia users. Results showed that chatbots and automated after-sales services enhance consumer engagement through improved attitudes and engagement intentions. The strongest mediation path was from automated after-sales services through attitudes and engagement intention to behavioral engagement, highlighting the critical role of post-purchase support. Perceived behavioral control influences intentions and directly impacts behavioral engagement, demonstrating consumers' need for control in AI-driven interactions. However, recommendation systems and image searches require supporting contextual factors to be effective. Subjective norms are culturally sensitive constructs influencing engagement in socially driven decision environments. We recommend prioritizing AI functionalities for e-commerce platforms in emerging markets that build trust, enhance perceived control, and align with local cultural norms. Transparent chatbot interactions and reliable post-purchase support strengthen user loyalty, while community-based features amplify the impact of AI-driven recommendations. This research advances the understanding of AI-enhanced consumer engagement in digital commerce ecosystems by connecting SOR and TPB frameworks.

Keywords

AI-enhanced E-commerce, Consumer Engagement, Stimulus-Organism-Response Model, Theory of Planned Behavior, Shopee Indonesia.