

The Role of Artificial Intelligence Recommendation Systems in Shaping Impulse Buying Behavior Among TikTok Shop Users in Indonesia

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ABSTRACT

The development of Artificial Intelligence (AI)-based social commerce has transformed digital consumer behavior, particularly on TikTok Shop, which integrates entertainment, personalization algorithms, and shopping transactions within a single platform. This study aims to analyze the role of AI recommendation systems in shaping impulse buying behavior among TikTok Shop users in Indonesia. The research employed a qualitative approach using phenomenological methods to explore users' subjective experiences regarding the influence of TikTok Shop algorithms on digital consumption activities. Informants were selected through purposive sampling, focusing on active TikTok Shop users who had experienced impulsive purchasing behavior. Data were collected through in-depth interviews, digital observations, and documentation, and analyzed using thematic analysis techniques. The findings reveal that TikTok Shop's AI recommendation system significantly influences impulse buying behavior through content personalization, repeated product exposure, short-form videos, live streaming, and the reinforcement of Fear of Missing Out (FOMO). Most informants admitted making spontaneous purchases after receiving product recommendations aligned with their preferences and digital activities. The study also found that users generally lack awareness of how AI algorithms indirectly shape their purchasing decisions. This research contributes to the development of digital consumer behavior and social commerce studies by demonstrating that AI recommendation systems function not only as personalization technology but also as persuasive mechanisms shaping digital consumption behavior.

Keywords: *AI, TikTok Shop, Impulse Buying, Social Commerce.*

1. INTRODUCTION

The development of Artificial Intelligence (AI) technology has transformed how digital companies comprehend and influence consumer behavior through increasingly personalized and adaptive recommendation systems. Social commerce platforms, such as TikTok Shop, leverage AI algorithms to analyze user activities including search history, video viewing duration, content engagement, and purchasing behavior-enabling the real-time delivery of highly relevant product recommendations. Consequently, digital consumption is no longer strictly driven by rational needs; rather, it is progressively influenced by personalized and persuasive digital stimuli. In Indonesia, TikTok Shop has experienced rapid growth by successfully integrating entertainment, social interaction, and shopping transactions into a single application, thereby creating a more engaging consumption experience for users (Febriandika et al., 2023). Research by Salsabila and Prasetyo (2024) indicates that AI-based recommendation systems on TikTok Shop contribute to an increased tendency for impulsive purchases, as the displayed products align closely with user preferences and immediate needs.

The phenomenon of impulse buying on TikTok Shop is becoming increasingly critical to investigate, given the rising utilization of social media as a primary medium for digital consumption among the Indonesian population, particularly the youth demographics. TikTok's core characteristics, centered around short-form videos and live streaming, allow users to be repeatedly exposed to products, thereby amplifying the likelihood of spontaneous, unplanned purchases. A study by Ubaedilah, Isyanto, and Romli (2023) found that viral product trends, limited-time promotions, and digital interactions serve as primary determinants influencing the impulse buying behavior of TikTok Shop users. Furthermore, research by Pangastuti and Kusumaningtyas (2025) demonstrates that the Fear of Missing Out (FOMO) phenomenon—triggered by flash sales and live shopping promotions—exerts a significant influence on digital consumers' impulsive purchasing decisions. These conditions illustrate that contemporary consumption

behavior is increasingly shaped by a combination of algorithmic technology, emotional factors, and the dynamics of social interaction within social commerce platforms.

Although numerous studies have explored impulse buying on TikTok Shop, the vast majority of prior literature has predominantly focused on the effects of promotions, discounts, live streaming, influencer marketing, and electronic word-of-mouth (eWOM) on consumer purchasing decisions. For instance, studies by Munajat et al. (2023) as well as Pandiangan, Tumbuan, and Saerang (2024) heavily relied on quantitative approaches to measure relationships between variables without deeply exploring the subjective experiences of users regarding the influence of AI algorithms. As a result, there remains a limited understanding of how AI recommendation systems shape user preferences, emotions, and consumption behavior on a deeper level. Moreover, research specifically addressing user experiences in receiving AI-based product recommendations on TikTok Shop in Indonesia remains relatively scarce, particularly those employing qualitative approaches. Therefore, this study aims to analyze the role of Artificial Intelligence recommendation systems in shaping the impulse buying behavior of TikTok Shop users in Indonesia, thereby bridging the empirical gap regarding the influence of AI algorithms in the context of modern social commerce.

2. LITERATURE REVIEW

2.1. Artificial Intelligence Recommendation System

An Artificial Intelligence (AI) recommendation system is an AI-based technology utilized to predict user preferences and deliver personalized product recommendations based on consumer digital behavior. According to Huang and Rust (2021), modern AI recommendation systems are capable of analyzing search history, digital activities, and user interactions in real-time to enhance consumer engagement on digital platforms. Within the context of TikTok Shop, the AI algorithm operates by analyzing video viewing duration, user interactions, comments, and search history, thereby rendering the content displayed on the user's page highly personalized and adaptive.

2.2. Impulse Buying

Impulse buying represents a spontaneous purchasing behavior executed without prior planning and is typically triggered by emotional factors and external stimuli. Gao, Zeng, and Cheng (2022) explain that short-form videos and live streaming on digital platforms are capable of heightening users' emotional engagement, thereby amplifying the likelihood of impulsive purchasing. Within the context of TikTok Shop, impulse buying behavior is further intensified as the platform seamlessly integrates entertainment, AI algorithms, viral trends, and direct purchasing features into a single application.

2.3. Social Commerce

Social commerce represents an evolution of e-commerce that integrates social media with digital trading activities. According to Hajli (2020), social commerce enables consumers to obtain a more interactive shopping experience through direct communication with sellers, influencers, and other users. TikTok Shop has emerged as a rapidly growing form of social commerce due to its capacity to simultaneously blend digital entertainment with transactional activities.

3. RESEARCH METHOD

This study employs a qualitative approach with a phenomenological method to comprehend users' subjective experiences regarding the influence of TikTok Shop's algorithm on digital consumption activities. The research is descriptive-qualitative in nature, aiming to provide an in-depth depiction of the impulse buying behavior phenomenon among TikTok Shop users. The research informants consist of 12 active TikTok Shop users in Indonesia, selected through a purposive sampling technique. The inclusion criteria for the informants comprise being active TikTok users for at least two hours per day and having executed impulsive purchases more than twice within the last three months.

4. RESULT AND DISCUSSION

This study involved 12 informants who are active TikTok Shop users aged 18–30 years and had executed impulsive purchases within the last three months. The thematic analysis yielded four main themes explaining the role of Artificial Intelligence (AI) recommendation systems in shaping impulse buying behavior: algorithmic personalization, the influence of short-form video content and live streaming, the reinforcement of the Fear of Missing

Out (FOMO), and users' low awareness of algorithmic mechanisms. These four themes demonstrate that AI functions not merely as a product recommendation system, but also plays a pivotal role in shaping user preferences and purchasing decisions.

The first finding indicates that algorithmic personalization serves as the primary driver behind impulse buying behavior. The majority of informants stated that the products appearing on their For You Page (FYP) closely aligned with their interests and digital activities. Continuous exposure to relevant products heightened user curiosity and interest, thereby accelerating unplanned purchasing decisions. This result aligns with the study by Huang and Rust (2021), which posits that AI recommendation systems enhance consumer engagement through data-driven personalization. Furthermore, this finding reinforces the research by Salsabila and Prasetyo (2024), demonstrating that the relevance of product recommendations significantly influences the impulsive purchasing decisions of TikTok Shop users.

The second finding reveals that short-form video content and live streaming amplify the effectiveness of AI recommendation systems. Informants admitted to being more inclined to purchase products after witnessing product demonstrations through short-form videos or live broadcasts. Beyond delivering visual product information, such content creates an entertaining experience that fosters users' emotional engagement. This condition supports the study by Gao et al. (2022), which found that short-form videos can heighten consumers' emotional responses and drive impulsive buying. Concurrently, Ardiyanti (2023) asserts that live streaming shopping exerts a significant influence on spontaneous purchasing decisions among TikTok Shop users.

The third finding relates to the emergence of the Fear of Missing Out (FOMO) phenomenon. Most informants confessed to making purchases due to the anxiety of missing out on promotional offers, limited discounts, or viral products. Marketing strategies such as "limited stock" and "live-exclusive promos" induce psychological pressure that compels users to make rapid decisions without deep evaluation. This result is consistent with research by Pangastuti and Kusumaningtyas (2025), which highlights FOMO as one of the primary determinants of impulse buying behavior in a social commerce environment. This finding indicates that AI algorithms do not merely personalize product recommendations, but also amplify users' emotional responses through repeated content exposure.

The final finding shows that the majority of informants possess limited understanding regarding the mechanics of AI algorithms. Informants tended to perceive product recommendations on their FYP as a standard component of regular social media activity, without realizing that such content is generated through the systematic analysis of their digital behavior. This low awareness of algorithmic mechanisms leaves users more susceptible to accepting product recommendations and engaging in impulse buying. This finding extends the study by Munajat et al. (2023)—which emphasized the roles of emotion and digital lifestyle in impulse buying—by demonstrating that digital literacy is also a critical factor in understanding user consumption behavior.

Overall, the empirical results indicate that the AI recommendation system on TikTok Shop plays a vital role in shaping impulse buying behavior through content personalization, the integration of short-form videos and live streaming, and the amplification of the FOMO effect. This study bridges the gaps in prior literature, which predominantly focused on promotions and influencer marketing, by establishing AI algorithms as a core factor influencing consumer behavior within the social commerce ecosystem. These findings underscore that the evolution of AI has transformed the consumer decision-making process from a rational framework into one heavily driven by personalized and emotional digital stimuli.

5. CONCLUSION

This study demonstrates that Artificial Intelligence (AI) recommendation systems on TikTok Shop play a pivotal role in shaping the impulse buying behavior of users in Indonesia. Algorithmic content personalization—fortified by short-form videos, live streaming, and the Fear of Missing Out (FOMO) phenomenon—compels users to execute spontaneous purchases without prior planning. Furthermore, the findings reveal that the majority of informants do not fully comprehend how AI algorithms manipulate their purchasing decisions. These insights underscore that AI operates not merely as a product recommendation technology, but rather as a profound mechanism that actively constructs consumer preferences and consumption behavior within the social commerce ecosystem. Ultimately, this study enriches the literature on digital consumer behavior by establishing AI recommendation systems as a critical antecedent driving impulse buying among TikTok Shop users.

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