Journal of Research and Innovation in Technology, Commerce and Management
Vol. 2 Issue 7, July 2025, pp. 2701-2709
ISSN: 3049-3129(Online)

Impact of AI Recommendations on Impulse Buying Behaviour: A Consumer Psychology Perspective

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Cite as:
Dr. A. Lakshmi Priyanka. (2025). Impact of AI Recommendations on Impulse Buying Behaviour: A Consumer Psychology Perspective. Journal of Research and Innovation in Technology, Commerce and Management, Volume 2(Issue 7), pp. 2701 –2709. https://doi.org/10.5281/zenodo.15781655

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Abstract

AI-based recommendations are revolutionising the digital marketplace by impacting the impulse buying behaviour. This research addresses the psychological effect of AI-based recommendations by examining certain pivotal variables, which include perceived urgency, emotional engagement, relevance, and trust. A mixed-methods approach with 200 respondents was employed to investigate the power of these factors for spontaneous purchasing intention. It shows that urgency, emotional engagement, and perceived relevance are the strongest drivers of impulse buying; whereas, the role of trust is significantly reduced. The regression model explains the variance in impulse buying behaviour is 58%, highlighting that how powerful the psychological triggers utilised through AI-enabled personalisation are. Theoretical contributions can be found in the emerging research on ethics related to AI while practical implications make this study important for marketers to develop AI systems and recommendations ethically as well as for promoting awareness amongst consumers and protecting data privacy. The article also contributes to critical discussions about responsible AI use and the ethics of behavioural targeting.

Keywords

Artificial Intelligence, Recommendation Systems, Impulse Buying, Consumer Psychology, Emotional Engagement, Cognitive Biases, Personalization, Consumer Autonomy.

Introduction

With the rise of artificial intelligence (AI), the digital marketplace has been profoundly altered with advanced recommendation systems that offer product recommendations unique to each

consumer. The AI-driven recommendation not only boosts the user experience but also has a great impact on the buying of the consumer, especially impulse buying. Impulse buying is an impulse decision by an individual to make a purchase just before the transaction. With AI, the e-commerce platforms have multiplied this phenomenon by using psychological triggers deliberately.

Perceived urgency is one of the powerful psychological factors that affect impulse buying. Many AI algorithms are a-cash cow for with inducing scarcity or time limited offers, leading consumers towards quick decision making to not miss out on deals. This strategy plays on FOMO to drive a sense of urgency to buy. Research has demonstrated that time pressure can heighten impulsive buying, as consumers are pressured to operate within restricted time windows.

Another key driver is emotional engagement. AI systems utilize previous consumer data to showcase products that align with what consumers like to see and their past behaviors, creating feelings of positive reinforcement and personal relevance to the consumers. This kind of emotional resonance can create a lower bar for impulse buys. Research shows consumers' emotions, coupled with low cognitive control, have a significant impact on behavior when online shopping, acting as stimuli for impulse purchases.

The relevance of AI-generated recommendations is also critical. Most consumers tend to buy products which are highly relevant to their needs or interests on impulse. Because AI is extremely proficient at tailoring such pointed suggestions, the chances of impulse purchases become more resolved. A study that analyzed factors affecting online impuls buying behavior emphasized that structured use of external factors like personalized recommendations serves as a good trigger for the emotion that strives for impulsiveness

Trust, though, while considered important for online transactions with AI systems, has a more nuanced relationship with impulse buying. However, some research indicates that perceived trustworthiness is not as significant when making impulse purchases, which typically rely more on emotion and the immediate situation rather than trust. For example, studies on impulse buying behavior in live streaming reveals that impulsive buying is not driven by trust while a number of psychological and emotional factors converge to incite these impulses.

Empirical data highlight these psychological triggers, with empirical data. A regression model based on the data from a study with 200 respondents showed that participants' perceived urgency, emotional engagement, and them finding the items relevant explained 58% of the variation in impulse buying behavior. The result reflects how significant the impact of AI-driven personalization is at generating impulse buys.

However, we need to consider carefully the ethical implications of using such powerful strategies powered by AI. These systems can indeed drive up sales and

improve user experience but they are also problematic because they threaten consumer autonomy, they pose data privacy issues, and they have the potential to manipulate even further the consumer. This circle of egg provides multitudes of opportunities for girls in data science, both big and little, practical and theoretical when exploring the theoretical dialogue we see regards to responsible usage of AI emphasising the need for transparency therefore an ethical guideline whilst deploying AI used on the marketing scene. From a practical perspective, marketers are invited to create AI systems that lead not only to sales, but also respect the rights of consumers and encourage informed choice. This includes making clear how recommendations are generated and allowing consumers to control their own data. The AI-powered recommendations have transformed the digital marketplace and played a crucial role in influencing impulse buying behavior through psychological triggers like perceived urgency, emotional engagement, and relevance. Though these strategies deliver results when applied, they should be executed without taking stakes on the consumer protection and their trust in the brand against the commercial objectives.

Need for the Study

Given the proliferation of AI in consumer-oriented platforms, it is pressing to understand how these technologies affect human decision-making, and, specifically, to study its impact on impulse buying. AI recommendation systems are designed to maximize engagement and sales, yet not much research has examined the psychological implications. By examining the behavioural and emotional impact of AI-driven personalization on consumers, this study addresses that void.

Scope of the Study

This research examines consumer psychology of impulse buying behaviour judging the role of an AI-enabled recommendation system. The study shines light on psychological factors like urgency, emotional involvement, perceived relevance and trust, based on data from 200 online shoppers. The research applies only to online and ecommerce settings and does not include instances of in-person or non-AI driven marketing methods.

Limitations of the Study

Although the research provides valuable conclusions, there are a few limitations. First, the survey is based on a sample size of around 200 respondents, which might not accurately reflect every demographic of consumers or the global picture. Second, our use of self-reported data poses the risk of response bias. Third, the research is focused on short-term behaviours, and not the long-term consequences of AI-driven personalization. Finally, the study is limited to the e-commerce sector and does not account for other industries such as education or healthcare in which the implications of AI behaviour may differ.

Review of literature:

Liao et al. (2016) studied the impact of virtual product experience, static images, and also product types (hedonic vs.

utilitarian) on online impulse buying decision. In line with the Stimuli-Organism-Response model, they designed a 2x2 lab experiment in which they analyzed how these variables influence consumers' emotional states (i.e. pleasure and arousal). Their research indicates that impulse buying tendencies are amplified to a greater extent by virtual product experiences and hedonic products, which contribute to step up pleasure and arousal. Moreover, it emphasized that for utilitarian products, a professional web design and methods to increase product involvement are essential for generating positive emotions and inducing impulse purchases. This research highlights the necessity for online retailers to customize presentation modes and product types to facilitate an atmosphere which inspires consumers' emotional responses and impulse buying behavior.

Jain, S., and Gandhi, R. (2021). Impulse buying behavior as influenced by artificial intelligence: an Indian consumer perspective in fashion retail stores. Their empirical study highlights the significant impact AI technologies, like smart mirrors and customer behavior tracking technologies, have on common unplanned purchases. The study highlights that certain psychological factors perceived through AI — such as improved customization, visibility, and interactivity — trigger emotions, buy, and increase impulse buying. In addition, the study demonstrates that AI enables a more engaging in-store experience and helps close the gap between desire and action. The spontaneous buying has been influenced by convenience and novelty, according to Jain and Gandhi, who also say that AI systems enhanced perceived value and urgency of products. This study gives a geographic and sectoral perspective to the literature by illustrating how cultural and context play an intervening role in understanding the relationship between AI and consumer psyche. Their discoveries corroborate the pervasive agreement that AI expedites decision-making processes and fortifies impulsive thoroughfares through creation of hyper-personalized retail landscapes.

In their study context Zhu, **Shi, Hashmi, and Wu (2023)** explore AI-based services on online impulse buying in the e-retailing sector. Specifically, they explore how the quality of AI service—information quality and system quality—affects consumer perceptions of utilitarian and hedonic value, which then influence impulse buying behaviors. According to the research, superior AI services amplify both the utilitarian and hedonic values of consumers and boost impulse purchases. This study stresses that e-retailers should invest in strong AI systems not only to serve accurate and relevant information but also to create an interesting and enjoyable shopping experience that rouses impulse buying decisions.

Roy et al. (2024) explore the impact of artificial intelligence (AI) on impulsive buying behavior in new business contexts. The study links AI applications — including those for personalized product recommendations, predictive analytics and dynamic pricing — to consumer impulses that also drive consumption behavior, as

presented at the International Conference on Trends in Quantum Computing and Emerging Business Technologies. As AI systems give timely, relevant and emotionally attractive product recommendations, authors argue, these algorithms shorten the deliberation time in purchasing decisions. By using experimental design alongside behavioral observation, the study illustrates how such adaptive learning capabilities of AI can be leveraged to personalize marketing stimuli according to individual consumer preferences and emotional states. Roy et al. Witness further contend that the ease of integration of AI agents in digital commerce systems promotes an impulse buying tendency by encouraging immediacy, convenience, and personalization based on perceived effort. These findings build on the existing literature by emphasizing the technological sophistication underlying the 21st-century consumer manipulation and the psychological triggers that are targeted by AI systems.

Using AI-powered virtual try-on technology, **Gao and Liang (2025)** examined how it impacts online consumers' impulsive buying intentions and whether brand trust moderates this relationship. Try-on technology's immersive and interactive characteristics substantially increase users' exposure and perceived enjoyment, which in turn augmented impulse purchase tendencies. We found that brand trust moderated this effect, magnifying the positive impact of the technology on purchase intentions at high levels of brand trust. The insights revealed that the integration of sophisticated AI features within a consolidated brand-centered approach may drive consumers towards more spontaneous engagement and purchase behavior.

Amin, B. (2025). Shedding some light on the potential impact of artificial intelligence (AI) on impulse buying behavior in social media environments. AI algorithms have emerged as a driver of impulse purchasing, the study concludes, and social media platforms are especially adept at it, personalizing content and positions product pushes to do the most damage. Using analysis of behavioral data as well as consumer feedback, the research outlines how engagement actions powered by AI make emotional triggers — for instance urgency and perceived scarcity — even more potent, with a final impact on unplanned buying decisions. Amin focuses on the interaction between algorithmic-targeting and audience psychology, pointing out that personalization in real-time minimizes the time consumers are spending in cognitive evaluation and encourages impulsiveness. This contributes to wider research regarding the manipulation of consumers through AI, presents strong ethical implications surrounding autonomy and informed consent, in varying degrees of severity. The research adds to the literature on consumer behavior by showing how artificial intelligence not only enables but actively designs impulse buying, particularly for younger consumers, who are more receptive to digital signals. Such behavior indicates that the effect of AI on

consumer is not just reactive but strategically anticipatory and transformative, reshaping decision-making trajectories through predictive analytics.

Prakash et al. (2025) studied the influence of artificial intelligence (AI) on impulsive buying behavior in Generation Z consumers. Applying the SOR (Stimulus-Organism-Response) Model of human behaviour, this study measured the impact of (AI-enabled) dose factors including accuracy, interactivity and insights on Gen-Z purchasing decisions. The results show that these AI features play critical roles in fuelling all of the Gen-Z shoppers´ impulsive buying propensity. This work emphasizes the importance of AI in influencing the impulse buying behaviors of younger consumers.

Research Objectives

- To identify psychological factors triggered by AI recommendations influencing impulse purchases.
- To evaluate the significance of perceived relevance, urgency, trust, and emotional appeal in AI-driven impulse buying.
- To explore ethical considerations surrounding AI-induced impulse buying behaviours.

Research Questions

- What psychological factors are most significantly influenced by AI-powered recommendation systems in driving impulsive buying?
- How do consumers perceive AI-generated recommendations in terms of trust, relevance, and urgency?
- What ethical concerns arise from utilizing AI recommendations in marketing?

Research Methodology:

The current study used a mixed-method approach to investigate the effect of AI-driven recommendations on impulse buying through the mediating psychological factors of perceived urgency, emotional engagement, relevance and trust. Semi-structured interviews with 20 participants provided qualitative insights into their AI experience and subsequent participation in a questionnaire that used more structured questioning. They then used this survey with 200 members who had recent experience with AI-based online shopping platforms. Responses for the key constructs were gathered utilizing validated scales on a 7-point Likert scale.

Research Hypotheses

- H1: Perceived urgency significantly influences impulse buying behaviour.
- H2: Emotional engagement significantly influences impulse buying behaviour.
- H3: Perceived relevance significantly influences impulse buying behaviour.
- H4: Trust significantly influences impulse buying behaviour.

Data Analysis and Interpretation				
Variables	**Beta (β)**	**p-value**	**Interpretation**	**Hypothesis Result**
Perceived Urgency	0.34	<0.001	Highly significant predictor of impulse buying.	Supported
Emotional Engagement	0.29	<0.01	Significant predictor; strong emotional triggers.	Supported
Perceived Relevance	0.25	<0.05	Significant predictor; recommendations align closely with consumer interests.	Supported
Trust	0.12	0.1	Not significant; indicates less impact on immediate impulse buying.	Not Supported

Regression analysis (R^2=0.58) shows that the model explained 58% of the variance in impulse buying behavior. Given the emotional aspect of purchasing, consumers are highly responsive to urgency and emotional factors; thus, digital marketers may make use of strategic AI recommendations to boost impulsive purchases.

Expected Outcomes

The study expects to the extent that it is to find significant correlations between AI recommendations and impulse shopping, mediated by increasing emotional arousal, urgency, and perceived personalization. Results are anticipated to show particular cognitive biases targeted by AI systems (e.g. FOMO, anchoring effect, and confirmation bias), thus affirming AI's strong impact on consumer behaviors.

Ethical Considerations

AI-enabled impulse buying raises ethical questions related to consumer autonomy, data privacy, and informed consent. The ethical issues of psychological-maneuvering AI recommendations are significant. Consumers are often unaware of having agreed to wide-ranging data amassing and targeted suggestions. The research underscores the need for ethical marketing interventions with a powerful call to action for consumers to exercise informed consent and encourage responsible use of artificial intelligence.

Findings

Perceived urgency, emotional engagement, and perceived relevancy were the determinants of the psychological triggers that stimulate AI recommendation-based impulse buying behavior, as highlighted in the study.

Notably, perceived urgency exhibited the strongest predictive power (β = 0.34, p < 0.001), suggesting that recommendations framed with a sense of time pressure or scarcity led to a marked increase in impulsive purchasing decisions.

Emotional engagement (β = 0.29, p < 0.01; strong influence on impulse buying yeah) best reflects on impulse buying (personalized AI recommendations resonate with user's own emotional response).

Perceived relevance (β = 0.25, p < 0.05) emerged as significant, highlighting that customized product offerings resonated effectively with consumer choices, leading to immediate purchases. As expected, Trust (β = 0.12, p = 0.10) was not significant, showing that consumers are more responsive to immediate and emotional, urgency-based cues rather than the longer-term evaluation of trust.

Recommendations Given these insights, marketers can responsibly exploit urgency and emotional triggering when providing AI recommendations, but they need to communicate authenticity effectively to avoid organization skepticism.

Recommendation algorithms ought to be more transparent and platforms should provide consumers with more choices and control over their personalization settings. Policymakers can introduce regulations that would ensure ethical practices by the firms deploying AI, including transparency, consumer opt-in, and protections for private data. Furthermore, exploring consumer awareness programs that create awareness among users about AI-based marketing techniques to assist users in making informed choices is something that can still be done.

Practical Implications

There are this research findings has important implications to digital marketers, economists and policy makers. Gaining the ability to use data ethically is more fundamental, as marketers develop AI recommendation strategies that encourage positive relationships with consumers, rather than exploiting their vulnerabilities. These insights enable policymakers to formulate regulatory frameworks that address data privacy, consumer rights, and ethical AI practices, thereby promoting consumer interests.

Future Scope

Moreover, it would be interesting for future research to investigate impulse buying behavior among different demographic groups, such as young vs. old or people from varying cultural backgrounds or incomes, in order to better understand these trends. Longitudinal studies may follow consumer trust and response to AI recommendations over time. Perhaps a growing area of interest is the integration of biometric data (e.g. eye-tracking or heart rate) for real-time psychological insights into impulsive decision-making. Future research may also explore the role of AI in non-retail domains such as education, healthcare, and entertainment, in order to examine the universality of psychological levers. AI recommendations can only be as accurate as the data on which they are based, and therefore the rationale can vary significantly; it would also be beneficial to explore how well these align with human preferences, including the return users get from AI-based recommendations compared to that received from expert human interaction, and the end user satisfaction with various recommendation systems. These types of research will clarify the ethical application of AI in consumer-facing tech and its potential for personalization without infringing on consumer autonomy or privacy.

Conclusion

This study examines the powerful influence of psychological triggers triggered by AI-driven recommendations on consumer impulse buying behavior. Recognizing these dynamics is critical for responsibly leveraging AI in marketing. Longer-term studies are needed to develop ethical frameworks that ensure balanced interplays between commercial interests and consumer protection, and at last leads to sustainable consumer engagement practices.

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