

Impact of AI-Enabled Personalization on Impulse Buying Behaviour in Online Shopping Platforms

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Abstract

The high rate of adoption of Artificial Intelligence (AI) in online retailers has revolutionized the way consumers shop as a result of dynamic personalization approaches. The recommendation of products, advertisements, prices, and content are done using AI-based personalization, which relies on data analytics, machine learning algorithms, and predictive modeling to adjust personal preferences to specific consumers. Though personalization increases convenience and relevance, it as well has major implications on impulse buying behaviour. Impulse buying is spontaneous, unplanned purchases that are driven by the emotions, situational stimuli and psychological stimuli.

This paper will set out to review the effects of AI-facilitated personalization on impulse buying behaviour in online shopping sites using the secondary research methodology. The article summarizes the results of peer-reviewed publications, academic books, and industrial reports concerning between 2018 and 2024. The research will capture thematic dimensions that determine the most dominant dimensions of impact of personalized recommendations, real-time targeting, dynamic pricing, urgency cues, and algorithm-based social evidence to make impulse purchases using thematic analysis.

The results indicate that personalization with the use of AI has a powerful effect on increasing the tendencies towards impulse buying due to less cognitive effort, better emotional involvement, and the perception of urgency. Nevertheless, ethical issues and worries about the safety of data, the manipulation of algorithms, etc. Could cool down consumer reactions. The research is relevant to current literature because it combines the concept of AI personalization with the existing theories of impulse buying. Managerial implications highlight the need to consider ethical approaches to personalization and open AI practices to retain consumer confidence and ensure sales performance.

Keywords: Artificial Intelligence, Personalization, Impulse Buying Behaviour, Online Shopping, Consumer Behaviour, Secondary Research.

Introduction

Retail digitalization has largely transformed the consumer buying behavior, especially in Internet shopping. As the number of e-commerce platforms and mobile commerce applications continue to increase, consumers are facing large volumes of product information and marketing stimuli. Online retailers have turned to the use of Artificial Intelligence (AI) to provide the user with

personalized shopping experiences to cope with this complexity and improve the user experience. AI-enabled personalization is the application of machine learning algorithms, predictive analytics, and consumer data to predictive product recommendations, ads, price policies, and content to specific users. In contrast to conventional marketing strategies where the marketing targets the large segments of customers, AI-driven personalization is aimed at personal-level customization. This can enable retailers to display consumers with very relevant products at the appropriate time thus enhancing the engagement and probability of purchase.

Impulse buying behaviour, which can be described as a spontaneous and unplanned buying behaviour due to emotional and situational stimuli, has started gaining more and more dominance in the online space. Digital platforms are ideally placed to drive impulse purchase using attractive user-interfaces, time-limited promotions, customized recommendations and social evidence. The impact of this is compounded by AI personalization, which determines the preferences of consumers and provides them with the desired stimuli, which elicits a purchasing decision.

The connection between the concept of AI-based personalization and impulse buying behaviour is multidimensional and complex. On the one hand, personalization promotes the convenience and relevance of the shopping process, decreases decision fatigue and makes it easy to make a purchase. Alternatively, too much personalization can lead to fears of intrusion of privacy and manipulation of algorithms. It is thus important to understand the effects of AI-inspired personalisation on impulse buying behaviour in order to help retailers balance the need to boost sales and maximize profit with the need to act ethically.

Despite a substantial amount of literature on the topic of impulse buying within the online setting, not many studies explicitly consider the concept of applying AI-based personalization as one of the primary drivers. The majority of the current research is dedicated to the design of a webpage, advertising strategies, or psychological stimuli without clearly examining the application of AI algorithms. To fill this gap, this research proposes a synthesis of the available literature to examine the impact of AI-based personalization mechanisms on impulse buying behaviour when buying products online.

The research takes the secondary approach in research, where it examines the existing academic literature in the published journals to determine common themes and theoretical connections. The study seeks to offer a holistic conceptual insight into this new trend by incorporating AI personalization frameworks with traditional theory of consumer behaviour.

Conceptual Background

The field of online retail and artificial intelligence is clearly defined and its importance is evident in the case study examined here, as it facilitates the entire online shopping process.

Artificial Intelligence in Retail Online

The use of artificial intelligence in online retail is well-articulated and the necessity is clear in the case study accessed in the present paper because it makes online shopping an easier task.

Artificial Intelligence has become one of the groundbreaking technologies in the online retail industry. AI produces analyzes of extensive amounts of consumer data, browsing history, purchase patterns, search queries, click behavior, and social media interactions. With the help of machine learning algorithms, retailers will be able to make predictions about consumers taste and create a customized shopping experience.

Online retail AI applications can be recommendation engines, chatbots, dynamical pricing systems, predictive search, and personalized advertising. These technologies increase operational efficiency and also improve consumer engagement. AI decreases the amount of information and

makes the process of making decisions easier by providing personalized product recommendations and personalized offers.

When applied to impulse buying, AI technologies can help to recognize the points of vulnerability or high engagement and present specific stimuli that can trigger impulse buying. Thus, AI does not exist as just a technological tool but as a strategic process that has an effect on consumer behaviour.

AI-Enabled Personalization

AI personalization is a concept of using algorithms to personalize content and product proposals with regard to individual consumer data. Strategies of personalization in online shopping platforms are:

- On-demand product recommendations.
- Individualized home page presentation.
- Targeted email marketing
- Advertisements of behavioral retargeting.
- Price adjustment depending on the browsing history.

As opposed to generic marketing strategies, personalization by AI is a real-time process of adjustment to consumer preferences. This responsiveness allows perceived relevance and generates emotion. Consumers are highly satisfied when they are exposed to products that meet their tastes and this leads to less searching.

Nonetheless, it is personalization that also increases exposure to consumption stimuli. Repeated exposure to products which are the most relevant could reduce the resistance to impulsive buying decisions. Therefore, AI-based personalization is a convenience-increasing feature and a behavioral influence factor.

Impulse Buying Behaviour

Impulse buying behaviour can be described as spontaneous buying behaviour in which the buyer makes an unplanned purchase. It is even mostly motivated by emotional arousal, excitement, or situational stimuli but not rational consideration. In the online setting, impulse buying is aided by:

- Easy payment systems
- One-click purchasing
- Attractive visuals
- Countdown timers and flash sales.
- Limited-time offers

Online shopping also has the added advantage of lack of physical barriers, which encapsulates more chances of buying impulses. Customers are able to shop at any point in time, get instant recommendations and transact within a short period of time.

The behaviour of impulse buying will be shaped by both internal (mood, personality, self-control) and external (promotions, design of websites, personalization) stimuli. With AI-powered personalization, these external stimuli become stronger since they will be customized to specific consumer tastes.

Personality and Emotional Appeals

Studies indicate that tailoring increases the emotional involvement because it makes the consumer feel that he/she is understood and appreciated. Positive emotions of excitement, curiosity, and satisfaction may emerge among consumers when they feel that a platform understands what they want.

One of the factors that impulse buying is motivated by is emotional arousal. Personalised recommendations made with the help of AI usually offer products that are very specific to the

interests of consumers, which stands a high probability of emotional engagement and spontaneous buying behaviour.

In addition, individualized urgency signals (e.g., “Recommended for You + Only 2 Left in Stock”) are effective urgency cues that combine both the sense of personalization and scarcity as a psychological stimulus. Such a mix greatly enhances impulsive behaviors.

AI, Cognitive Load and Decision Simplification

Websites that offer shopping options offer consumers multiple options of products which in many cases causes cognitive overload. Personalization using AI lowers the cognitive burden caused by irrelevant choices, and presents preferred ones. This is a simplification which promotes quicker decision making.

The lesser the effort used in decision making, the greater probability of heuristics processing as opposed to detailed processing by consumers. The use of heuristic results in a greater level of temptation towards impulse purchasing because the decisions are reached without taking time and thinking logically.

In this way, AI personalization plays an indirect role in impulse purchase in that it facilitates the processes of decision making and encourages quick buying behaviors.

Consumer Trust and Ethical Is Under Consideration

Although the AI-enabled personalization can be of great benefit, there is also the issue of ethical concerns. Problems connected to data privacy, transparency of the algorithm, and possible manipulation affect consumer perception. In case consumers feel that personalization is being imposed or used, their confidence in the platform might be lowered.

There is a moderating variable of impulse buying behaviour, trust. Customers who have a good faith in an online site will be willing to respond better to customized suggestions. On the other hand, privacy issues can suppress the impulsive nature.

As such, it is necessary to comprehend how far individualization can be effective without crossing ethical accountability in a sustainable retail development.

The Analysis of Data (Synthesis of Secondary Data)

As this research is a secondary one, the data analysis is performed using thematic synthesis and comparative review of the available empirical studies, conceptual studies, industry reports, and peer-reviewed journal articles. This section is aimed at combining the results of other research in finding patterns, relationships, and theoretical consistency in the context of AI-enabled personalization and impulse buying behavior.

Thematic Table of AI Personalization Mechanisms

According to the literature analysis, the use of AI in online shopping platforms through personalization can be divided into the following mechanisms:

- Individualized product suggestions.
- Retargeting and predictive analytics.
- Time-based and dynamic pricing.
- Customized user interfaces
- Virtual assistants and AI chatbots.
- Personalization of social proof.

All these mechanisms play a different role in impulse buying behavior.

Individualized Product Recommendations and Impulse Buying

The most studied AI tools in online retail are recommendation algorithms. The research indicates that AI recommendation systems may cause unplanned purchases to rise by a great extent by exposing consumers to products based on their browsing and purchase history.

Research indicates that:

- Individual recommendations minimize searching.
- They generate perceived relevance.
- They promote the exposure to complementary products.
- They elicit impulse purchases.

Empirical research the basis of which lies in the Stimulus-Organism-Response (S-O-R) model indicates that AI suggestions can be viewed as a stimulus, leading to a change in the internal emotional state, e.g., excitement and perceptions of suitability, which subsequently causes impulse purchases.

Predictive Analytics/ Behavioral Targeting

Predictive AI systems use browsing history, page time, percentages on clicks, and cart placement in predicting purchasing intent. Consumers think that the perceived personalization increases with behavioral targeting, as platforms are thought to understand the needs of consumers.

Results of the research show that:

- Urgent buying is promoted by retargeting.
- Individualized advertisements boost the conversion.
- Cart reminders artificially induced through AIs boost the urge-of-the-moment buying behavior.

This proves that the predictive AI tools diminish deliberation in the mind and promote instant purchasing decisions.

Urgency Triggers and Dynamic Pricing

AI-powered dynamic pricing varies pricing according to demand, number of times that the user browses, and user behavior. Offers of limited time, flash sales and countdown clocks are usually customized with AI in mind.

Literature suggests that:

- Cues of scarcity enhance perceived value.
- Rational evaluation is decreased by time pressure.
- Dynamic discounts cause the fear of missing out (FOMO).

These are the psychological stimulating mechanisms that drive impulse purchases by time restraining the decisions.

Customization of the Interface by AI

The AI systems adjust homepage designs, product visualization, and navigation architecture in accordance with the likes of customers. Studies show that:

- Individualized interfaces enhance interaction.
- Increased dwell time is achieved by tailored homepage content.
- More interaction will be associated with more likelihood of impulse purchases.

Personalization will increase the emotional attachment to the platform and make it less likely to resist impulse purchasing.

Chatbots and Conversational Commerce in AI

AI chatbots imitate the human communication and direct buying actions. Conversational AI has been shown to lower the uncertainty level and boost confidence in purchasing.

Findings show:

- Chatbot support raises the level of perceived convenience.
- Quick responses eliminate indecisiveness.
- The purchase can be spontaneous caused by conversational nudges.

In this way, AI chatbots can be treated as the enablers of impulse buying by getting rid of the obstacles to instant decision-making.

Results and Findings

According to the systematic review and synthesis of available literature, the following essential findings become apparent:

AI-Based Personalization Has a Positive Effect on Impulse Buying

Most empirical research findings show that there is a strong positive correlation between AI-based personalization and impulse purchasing. Individualized recommendations, behavioral targeting, and urgency cues, in turn, are increasing the spontaneous purchasing behavior.

Emotional Triggers Intermediate the Relationship

Feelings of excitement, perceived enjoyment, and urgency form the mediating effects between the effect of AI personalization and impulse buying. The stronger the impulsive reaction the more emotionally speaking the personalization strategy is.

Cognitive Control Decrease

AI personalization makes the decision-making process less demanding in terms of the mental effort. AI reduces the comparison aspect of buying products by giving very pertinent alternatives, thus boosting impulse buying.

Relevance as a Key Driving Force

Perceived relevance has always come out as one of the most effective predictors of impulse buying. Recommendations that match with the preferences of the consumers will have higher likelihood of making unplanned purchases.

Trust and Privacy Concerns Role

Even though AI personalization enhances impulse buying, other studies note that overindulgence in personalization can cause privacy issues. The effective AI personalization strategies are moderated by trust in the platform.

Discussion

The results indicate that AI-based personalization has a significant influence on the consumer behavior on the online marketplace. Theoretically, the findings are in line with:

- Stimulus-Organism-Response (S-O-R) Theory.
- Technology Acceptance Model(TAM).
- Flow Theory
- Principles of behavioral Economics.

The AI personalization serves as an impetus of technology affecting emotional and cognitive reactions that result into impulsive behavior.

The adoption of AI technologies transforms the conventional impulse buying stimuli (like store atmosphere) into online counterparts like personalized suggestions and ai-driven prices.

Conclusion

The purpose of this paper was to investigate how the AI-based personalization affects the impulse buying behavior in online stores based on the analysis of a secondary research.

The results indicate that AI personalization technologies such as recommendation systems, predictive analytics, dynamic pricing, interface customization, and conversational AI have a considerable effect on the tendency to impulse buying.

AI will ensure that the online shopping landscape becomes a highly personalized experience that reduces the deliberation process to the minimum and maximizes the emotional engagement, which leads to more impulse buying.

Managerial Implications

According to the findings online retailers should:

- Invest in the state of the art AI recommendation algorithms.
- Apple personalization ethically to retain consumer trust.
- Use dynamic pricing with care so that it is not seen as manipulation.
- Improve chatbot experiences to provide smooth shopping.
- Striking a balance between personalization and privacy.

Limitations of the Study

The proposed research is a secondary research.

- Absence of main empirical validation.
- Majorly concentrates on the available literature in selected databases.
- Changes in technology are quickly taking place, which can change the results as time passes.

Scope for Future Research

Future Research May

- Carry out empirical surveys to confirm results.
- Research demographic moderators.
- Learn about cross-cultural differences.
- Explore AI-based stimulation of impulses, as an ethical matter.

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