

A Study on The Influence of AI Recommendations and Personalized Discount Strategies on Consumer Trust, Engagement, And Purchase Intention in E-Commerce

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Abstract—As e-commerce continues to grow, companies are adopting AI-driven personalization strategies to enhance the shopping experience and boost sales. As the e-commerce industry expands, companies are turning to Artificial Intelligence (AI) for personalization techniques to improve the customer shopping experience and grow sales. AI product suggestions and tailored discount promotions are among these strategies and have proven to be vital in shaping consumer actions. This research aims to examine how AI-generated suggestions and customization of discounts affect consumer trust, engagement, and purchase intent in the e-commerce industry.

The research premise is that customized recommendations can guide consumers in finding products aligned with their interests, and that customized discounts can increase the perceived value of the products and influence consumers' willingness to buy them. There is a lot of literature out on how AI personalization improves the customer experience and purchase convenience, but the issues of privacy, fairness and transparency can negatively impact consumer trust. The research additionally examines the emotional and behavioral reactions of consumers to custom-tailored shopping experiences via AI technologies. This paper reviews previous research papers, theories and empirical studies to explore the link between customization tactics and consumer responses within online purchase contexts. The study also highlights the importance of trust and engagement as important variables in purchase intention. As a result, the findings of this review are meant to help further the academic understanding and supply practical insights for e-commerce businesses in creating effective and moral AI-powered marketing techniques to improve customer engagement and enterprise outcomes.

Index Terms—Artificial, Intelligence, Personalization, Recommendations, Customized

I.INTRODUCTION

With the advent of digital technologies and the growing popularity of ecommerce platforms, the way consumers engage with online businesses has undergone a significant shift. In the recent past, Artificial Intelligence (AI) has become a major technological advancement which has allowed e-commerce businesses to offer personalized shopping experiences to their customers. Online retailers are leveraging AI-powered personalization tools, like product recommendation systems and tailored discount strategies, to draw in customers, boost engagement, and enhance their sales effectiveness. These strategies involve examining customers' purchases, browsing habits, and interests to create personalized content and offers for each customer.

AI recommendation systems can assist consumers in finding products that align with their interests or preferences, thus minimizing search time and enhancing shopping convenience. These algorithms are extensively used in platforms like Amazon, Flipkart, and Netflix to improve the user experience and increase customer retention. Likewise, customized discount strategies offer tailored offers depending on customer actions, buying record and income. It's these personalized offers to drive up perceived value and inspire consumers to buy.

A number of studies have found that consumer trust, engagement, satisfaction and purchase intention have all been positively impacted by AI enabled personalization. Personalized recommendations not only help in the decision-making process, which is efficient, but also help to generate a feeling of relevance among consumers, and personalized

discounts to raise customer attention and motivate purchases. Others, however, believe that over-personalization can raise issues about privacy, data security, transparency and fairness. This may lead to situations where consumers are uncomfortable with the collection and use of their personal data by companies without their explicit consent, potentially impacting trust in e-commerce platforms.

E-commerce transactions carry uncertainty and risk; therefore, consumer trust is deemed to be an important factor in online shopping. Trust enables consumers to feel comfortable giving their information as well as make online purchases. Engagement is also a key metric that shows how involved consumers are, how they engage, and how they feel about e-commerce platforms. Trust and engagement are two important factors that impact purchase intention and customer loyalty.

While numerous previous studies have focused on either AI recommendation systems or personalized discount strategies, there is a lack of studies that have investigated their relationship in consumer trust, engagement and purchase intention. Moreover, comparative studies are lacking which are specific to the Indian context where digital adoption as well as online shopping habits are growing at a fast pace. Hence, the objective of this study is to review and analyze the literature on AI recommendations and personalized discount strategies and understand how they affect consumer behavior in e-commerce. The research is likely to add to the body of work on the topic of AI personalization and will offer valuable real-world advice to marketers, ecommerce businesses and researchers aiming to create effective and customer focused, and ethical, personalization strategies.

II. OBJECTIVES OF THE STUDY

- 2.1. To examine the influence of AI-based recommendation systems on consumer trust in e-commerce.
- 2.2. To analyze the impact of personalized discount strategies on consumer purchase intention.
- 2.3. To study the effect of AI personalization on consumer engagement in online shopping platforms.

- 2.4. To compare the effectiveness of AI recommendations and personalized discount strategies on consumer behavior.

- 2.5. To identify the relationship between consumer trust, engagement, and purchase intention in AI-driven e-commerce platforms.

III. METHODOLOGY

The type of research in this study is descriptive and analytical research. The research method used in this study is a descriptive and analytical research. All the data used in the study is from secondary sources, obtained from research articles, journals, books, conference papers and online academic databases like Google Scholar, Science Direct and Springer Link. For the study, the literature was systematically reviewed regarding the aspects of AI personalization, consumer behavior and e-commerce. Qualitative and comparative analysis methods were used to analyze the collected information and find key findings and the research gaps. The study mainly concentrates on ecommerce platforms and is restricted to the availability of existing secondary data sources and their reliability.

IV. LITERATURE REVIEW

4.1. Xin Wang & Xiaoping He (2023)

The research paper, “The Influence of Personalized Recommendation Information on Chinese E-Commerce Consumers' Purchase Intention,” examined the impact of AI-powered recommendation systems on consumer purchasing habits on e-commerce platforms. The Stimulus–Organism–Response (S-O-R) model was used to explain how personalized recommendations affect consumer feelings and responses. The results indicated that the relevance and personalization of recommendations enhance consumer trust, satisfaction, and purchase intentions. The study concluded that consumers are more inclined to interact with platforms offering precise and personalized product recommendations. It also emphasized that personalized suggestions boost customer loyalty and enhance the online shopping experience.

4.2. Ajit Kumar Singh et al. (2025)

The study, “The Role of Management Information Systems in Enhancing AI-Powered Recommendation

Systems and Their Impact on Consumer Behavior in E-Commerce”, examined how management information systems contribute to the effectiveness of AI-driven recommendation systems and their effect on consumer behavior. The study emphasized the importance of trust as a key moderating variable between the quality of recommendations and consumers' intention to buy. The findings showed that accurate data-driven recommendations lead to better customer satisfaction, customer experience and engagement. In conclusion, the study found that AI recommendation systems positively influence online consumer behavior, enhancing personalization and convenience in online shopping. It also highlighted the growing importance of management information systems for fine-tuning AI personalization strategies.

4.3. Future Business Journal (2025)

The research titled “The Moderating Role of Personalized Recommendations in the Trust–Satisfaction–Loyalty Relationship” explored how personalized recommendations interact with consumer trust, satisfaction, and loyalty in the realm of e-commerce. The results indicated that personalized suggestions enhance customer trust and have a positive impact on long-term loyalty to online platforms. The research made it clear that the relevant recommendations increase the perceived usefulness and satisfaction with shopping, which increases the likelihood of re-purchase. It also highlighted the importance of trust as a key component in maintaining customer relationships in an AI-powered digital environment. The study found that companies with successful personalization strategies can improve customer retention, satisfaction, and overall customer experience in today's highly competitive e-commerce market.

4.4. AI-Based Recommendation Systems and Purchase Decisions (2025)

The study, “The Effect of Artificial Intelligence Based Recommendation Systems on Purchasing Decisions in the e-Commerce Industry,” investigates how accurate recommendations, personalized recommendations, trust and perceived value affect consumer decision-making. The result was that when consumers receive recommendations that are consistent with their interests and preferences, they respond well to it. Accurate and relevant recommendations reduced the

effort needed for searching and enhanced shopping convenience, thereby boosting purchase intentions. The research also highlighted the importance of having trust in the AI systems in influencing consumer decisions. The researchers found that AI recommendation systems have the potential to enhance customer experiences and drive better online sales performance by providing personalized and data-driven product recommendations.

4.5. The Journal of Business Research, (2022)

The research paper titled "Seeking the Perfect Price: Consumer Responses to Personalized Price Discrimination in E-Commerce" examined the reaction of the consumers to personalized pricing in e-commerce platforms. The study revealed that using personalized pricing for promotions not only led to more effective targeting and promotions, but also caused negative reactions from the customers when they felt it was unfair or discriminatory. The key challenges to consumer trust that were identified were privacy and transparency. The report raised the ethical issues of AI-driven personalized pricing. In conclusion, businesses need to strike a balance between personalization advantages and fairness and transparency to ensure that they do not lose the trust of their customers and cultivate negative relationships in e-commerce settings.

4.6. Personalized Promotion Decision Making (2022)

The research was called “Personalized Promotion Decision Making Based on Direct and Enduring Effect Predictions” which focused on using AI in ecommerce for personalized promotion decision making strategies. The study on machine learning explained how machine learning models predict consumer behavior to offer them personalized offers and promotions. The results indicated that customized promotions have positive impact on short-term sales and long-term customer retention. The study has found that customer satisfaction and consumer relationships with online platforms improved from targeted marketing promotion. It also illustrated the potential for leveraging consumer preferences and purchase trends to fine-tune the effectiveness of the company's marketing efforts with the help of predictive AI systems. The researchers found that AI-based promotions are an effective way to engage and retain customers.

4.7. E-Commerce Promotions Personalization (2021)

The study “E-Commerce Promotions Personalization via Online Multiple-Choice Knapsack with Uplift Modeling” was dedicated to optimizing the strategy of personalized promotions using the Artificial Intelligence techniques. Promotional offers were identified for various groups of customers using the uplift modelling and algorithm-based decision systems. The findings revealed that customized marketing strategies can help increase conversion rates and reduce unnecessary marketing expenses. The research highlighted the potential of AI to optimize discount strategy by understanding consumer behavior and predicting their responses. The study noted how AI could be used to optimize discount strategy by analyzing consumer behavior and predicting response. The data-driven personalized promotions proved to be effective in targeting customers efficiently, thus increasing the purchase intent and the expected profitability in competitive ecommerce markets by optimizing the promotional budget, the researchers found.

4.8. AI in Customer Service (2025)

The study, “AI-Driven Personalization in E-Commerce: Impact on Purchase Intention and Consumer Trust,” looks at the link between AI personalization, purchase intention and consumer trust. The results showed that transparency and perceived control have a significant impact on consumer trust in AI systems. The consumer was more likely to agree to personal recommendations and offers when he/she knew how his/her personal information was to be used. In addition, it was found that trust positively affects a purchasing intention and satisfaction with online shopping. The researchers found that for any ecommerce businesses, there is a need to have a personalization approach that is both transparent and ethical, which will help build trust, engagement, and lasting customer relationships.

4.9. Personalization in Digital Retail: Ethics and AI (2025/2026)

The research paper “Ethical AI Personalization in Digital Retail: The Roles of Transparency, Privacy, and Consumer Trust” was based on ethical issues related to AI personalization. The results revealed that transparency, privacy protection and fairness of the transaction are critical to fostering cognitive and

emotional trust between consumers. The study revealed that the consumers appreciate the personalization provided by the companies if they care about the personal information and explain the processes of using AI. But too much data gathering and intrusive personalization could have a negative impact on trust and loyalty. Ethical AI practices is identified as one of the key factors that helps in the enhancement of a positive relationship between the consumer and the company, and the creation of a sustainable business performance in digital retail settings.

4.10. Explore the role of Personalization in E-commerce 2024

The research paper, “Exploring the Role of Personalization in E-Commerce: Impacts on Consumer Trust and Purchase Intentions” examined the impact of personalized communication, recommendations and offers on consumer's behavior. The results showed that personalization affects positively in terms of trust, shopping convenience, and purchase intention. Demonstrating personalization in the experience was seen as more meaningful and useful for consumer and led to higher satisfaction and engagement. The study also pointed out that trust is a mediator between personalization and consumer purchasing behavior. The researchers concluded that, in competitive e-commerce settings, those firms that have managed to effectively implement personalization methods can strengthen the customer relationship, increase online engagement and encourage re-purchases.

4.11. Psychology & Marketing (2017)

In the research titled “Sense and Sensibility in Personalized E-Commerce: How Emotions Rebalance the Purchase Intentions of Persuaded Customers”, the emotions in personalized online shopping process were investigated. The results indicated that personalization strategies impact consumers' emotions including enjoyment, excitement, and satisfaction, which have a positive impact on intention to buy. Emotional engagement is more effective for personalization of recommendations and promotional tactics, the study said. Positive emotional experiences trigger consumer to stay longer on online selling platforms and enhance their likelihood of buying. The researchers found that emotions play crucial roles in

shaping the consumers' behavior in the context of AI-driven personalized e-commerce.

4.12. Analyzing and predicting purchase intent in e-commerce (2020)

The research Analyzing and Predicting Purchase Intent in E-Commerce: Anonymous vs Identified Customers sought to understand the possibility of predicting consumer purchase intention using behavioral data and technologies with anonymous customers or identified customers. The study investigated online buying patterns of anonymous and identified customers to understand their buying decision. The results demonstrated that customization on browsing behavior, clickstream and purchase history is effective when it comes to engagement with consumers and purchase prediction accuracy. The research emphasized that AI systems play a crucial role in customer preferences analysis and enhancing recommendation effectiveness. The researchers have found that the behavioral data analysis can be used by e-commerce businesses to create a more effective personalization strategy, and to enhance customer engagement and purchase intention.

V. CONCLUSION

The impact of AI-based recommendation systems and customized discount strategies on consumer trust, engagement, and intentions to purchase in e-commerce was explored in the current study. Based on the literature analysis conducted, it can be seen that the personalization effect of AI on the customer experience and customer behavior in online shopping is quite significant. The examined research indicated that AI recommendation systems are beneficial for consumers by offering suggestions that are relevant to the product, making it simpler for them to be satisfied and additional trusting of e-commerce sites. Similarly, personalized discount strategies were demonstrated to positively influence the consumer's purchase intention through increasing the perceived value and purchasing behavior.

Additionally, it was found that consumer trust in the company and consumer engagement were important factors that affect consumers' intention to buy online. When customers feel that AI personalization is beneficial, fair, and transparent, their engagement with the brand, emotional connection, and loyalty are

enhanced. Others pointed out concerns about privacy, fairness and ethical handling of consumer data, however, which could be detrimental to trust if not handled correctly by e-commerce companies.

The findings from the literature review support all the aims of the research as it provides an explanation of the link between the AI recommendations, the personalized discounts, consumer trust, consumer engagement and purchase intention. The study also revealed that most of the previous studies have investigated these personalisation strategies separately and only a few compared the two strategies. Hence, the aim of this study is to give a comparative understanding of AI recommendations and personalized discount strategies to influence consumer behavior in e-commerce, which is a contribution to the existing literature.

The study demonstrates the crucial role of AI customization in modern e-commerce marketing. By leveraging AI recommendations and personalized discounts in an effective and ethical way, businesses can boost customer satisfaction, build trust, improve engagement, and increase purchase intent, thereby fostering positive customer relationships and overall business performance.

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