

IMPACT OF ARTIFICIAL INTELLIGENCE ON CONSUMER BUYING BEHAVIOUR IN E-COMMERCE PLATFORM: A STUDY ON AMAZON

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ABSTRACT

This study examines the impact of Artificial Intelligence (AI) on consumer buying behaviour in e-commerce platforms with special reference to Amazon. The rapid integration of AI technologies such as personalized recommendation systems, chatbots, and targeted advertising has significantly transformed the online shopping experience. The research is based on primary data collected through a structured questionnaire from Amazon users. The analysis reveals that AI plays a crucial role in influencing consumer purchase decisions by enhancing convenience, improving product discovery, and increasing customer satisfaction. Personalized recommendations are found to be a key factor driving purchase intention. However, issues related to data privacy and trust continue to affect consumer perception. The study concludes that AI is a powerful tool in shaping modern consumer behaviour and provides valuable insights for improving customer engagement strategies in e-commerce platforms.

KEYWORDS: *Artificial Intelligence, Consumer Behaviour, E-Commerce, Amazon, Personalization, Recommendation Systems, Customer Satisfaction, Digital Marketing.*

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Introduction

In recent years, the rapid advancement of digital technologies has transformed the way businesses operate and interact with consumers. Among these technologies, Artificial Intelligence (AI) has emerged as a powerful tool in reshaping the landscape of e-commerce. AI refers to the ability of machines and systems to perform tasks that typically require human intelligence, such as learning, problem-solving, and decision-making. In the context of online retail, AI is widely used to analyse consumer data, predict preferences, and deliver personalized shopping experiences. E-commerce platforms, particularly Amazon, have integrated AI technologies such as recommendation systems, chatbots, voice assistants, and dynamic pricing strategies to enhance customer engagement and satisfaction. These intelligent systems collect and process vast amounts of consumer data to provide customized product suggestions, improve search results, and streamline the purchasing process. As a result, consumers are able to make quicker and more informed decisions, leading to increased efficiency and convenience in online shopping.

Consumer buying behaviour refers to the decision-making process individuals undergo when selecting, purchasing, and using products or services. With the integration of AI, this behaviour has undergone significant changes. Factors such as personalization, ease of navigation, instant customer support, and targeted advertising have become key determinants influencing consumer choices. AI not only simplifies the buying process but also creates a more engaging and interactive shopping environment. However, despite its numerous advantages, the use of AI in e-commerce also raises concerns related to data privacy, security, and trust. Consumers may be hesitant to share personal information or rely entirely on algorithm-based recommendations. Therefore, it is essential to understand both the positive and negative implications of AI on consumer behaviour. In this context, the present study aims to examine the impact of Artificial Intelligence on consumer buying behaviour with special reference to Amazon. The study focuses on understanding how AI-driven features influence purchasing decisions, customer satisfaction, and overall shopping experience. It also seeks to identify the challenges associated with the use of AI in e-commerce platforms.

Amazon Company Profile

Amazon.com, Inc. is one of the world's largest e-commerce companies, founded in 1994 by Jeff Bezos and headquartered in Seattle, United States. The company operates under the leadership of CEO Andy Jassy and has established itself as a global leader in online retail, cloud computing, and digital services. Amazon's business model is highly diversified, combining direct online sales with a third-party marketplace, subscription services, and advertising. As of 2024, Amazon generated an approximate total revenue of over \$638 billion, making it the largest e-commerce company globally. The company accounts for around 37% of the total e-commerce market share in the United States, significantly outperforming its competitors such as Walmart and eBay. Amazon's e-commerce sales alone contribute hundreds of billions of dollars annually, supported by its extensive product range and customer-centric approach. A significant portion of Amazon's revenue comes from its third-party seller services, which contribute nearly 24% of total income. More than 100,000 sellers on Amazon earn over \$1 million annually, highlighting the strength of its marketplace model. Additionally, Amazon Web Services (AWS), its cloud computing division, contributes approximately 15-16% of total revenue and remains a major profit-generating segment for the company. Amazon operates in more than 20 countries worldwide, including key markets such as the United States, India, the United Kingdom, Germany, and Japan. The company has built a strong global logistics and supply chain network, enabling fast and reliable delivery services. Its continuous investment in artificial intelligence and data analytics helps provide personalized recommendations, which significantly influence consumer buying behavior. Overall, Amazon represents a highly advanced and integrated e-commerce ecosystem that combines technology, logistics, and customer data to maintain its market leadership and drive continuous growth in the digital economy.

Review of Literature

- **Davenport, T. H., & Ronanki, R. (2018):** The authors highlighted how Artificial Intelligence is transforming business processes by enabling automation and data-driven decision-

making. Their study emphasizes that AI enhances customer engagement and improves business efficiency, especially in digital platforms.

- **Shankar, V. (2018):** Shankar analyzed the impact of artificial intelligence in marketing and concluded that AI-driven personalization and predictive analytics play a crucial role in shaping consumer preferences and purchase decisions in e-commerce.
- **Kumar, V., et al. (2019):** The study focused on AI-based customer analytics and found that businesses using AI tools can better understand consumer behaviour, leading to improved targeting, customer retention, and enhanced satisfaction.
- **Jarek, K., & Mazurek, G. (2019):** This research emphasized the importance of AI in e-commerce and highlighted that AI applications like chatbots and virtual assistants improve customer experience and influence purchase intentions.
- **Gentsch, P. (2019):** Gentsch discussed how AI transforms marketing strategies through automation and personalization. The study revealed that AI enables companies to deliver customized experiences, thereby increasing consumer satisfaction and loyalty.
- **Dwivedi, Y. K., et al. (2021):** The authors provided a comprehensive review of AI adoption in business and highlighted its impact on consumer decision-making, trust, and behavioural outcomes in digital environments.
- **Ameen, N., Tarhini, A., Reppel, A., & Anand, A. (2021):** This study focused on consumer trust and privacy concerns in AI-based systems. It concluded that while AI improves convenience, issues related to data security and transparency affect consumer trust.

Research Gap

Despite the increasing use of Artificial Intelligence in e-commerce platforms such as Amazon, existing studies are largely concentrated in developed countries, with limited focus on the Indian context. Most of the previous research has examined general consumer behaviour without specifically analysing the impact of

AI-driven features like personalized recommendations, chatbots, and predictive analytics. Additionally, there is a lack of empirical evidence on how these AI technologies influence consumer trust, purchase decisions, and impulse buying behaviour. Furthermore, limited attention has been given to consumer concerns regarding data privacy and security in AI-enabled platforms. Previous studies have also not adequately compared AI-based interactions with traditional human interactions in shaping consumer experiences. Moreover, the role of demographic factors in influencing consumer responses to AI technologies remains underexplored. Most of the existing research relies on secondary data, with very few studies based on primary data collected from actual users. Therefore, this study aims to fill these gaps by examining the impact of Artificial Intelligence on consumer buying behaviour in Amazon, particularly within the Indian context, by focusing on trust, privacy concerns, and consumer perception of AI-driven features.

Objectives of the Study

- To examine the role of Artificial Intelligence in influencing consumer buying behaviour on e-commerce platforms.
- To analyse the impact of AI-driven features such as personalized recommendations, chatbots, and predictive analytics on consumer purchase decisions.
- To study the level of consumer awareness and perception towards the use of AI in Amazon.
- To evaluate the effect of Artificial Intelligence on consumer trust and satisfaction in online shopping.
- To investigate the influence of AI on impulse buying behaviour of consumers.

Hypothesis of the Study

- H0: Artificial Intelligence has no significant impact on consumer buying behaviour.
- H1: Artificial Intelligence significantly impacts consumer buying behaviour.
- H0: AI-based recommendations do not influence consumer purchase decisions.
- H2: AI-based recommendations influence consumer purchase

decisions.

Statement of the Problem

With the rapid growth of e-commerce, Amazon has widely adopted Artificial Intelligence to enhance customer experience through personalized recommendations, chatbots, and automated services. However, there is a lack of clear understanding of how these AI technologies influence consumer buying behaviour. Consumers may respond differently to AI-based features due to factors such as trust, privacy concerns, and ease of use. Therefore, the problem of the study is to examine the impact of Artificial Intelligence on consumer buying behaviour and to analyze customer perception towards AI-driven services on Amazon.

Need for the Study

The rapid growth of e-commerce and the increasing use of Artificial Intelligence have significantly transformed consumer buying behavior. Platforms like Amazon use AI technologies such as personalized recommendations, chatbots, and predictive analytics to influence customer decisions. However, there is a need to understand how these AI-based features affect consumer perception, satisfaction, and purchasing behaviour. The study is important to identify the factors that encourage or discourage customers from relying on AI-driven services. It also helps to analyze issues related to trust, privacy, and security in AI-based systems. The findings of the study will be useful for improving AI applications in e-commerce and enhancing overall customer experience.

Research Design

- The present study is based on a descriptive and analytical research design.
- Descriptive research is used to describe the characteristics of consumers and their awareness, perception, and usage of Artificial Intelligence in e-commerce.
- Analytical research is used to analyse the relationship between AI features and consumer buying behaviour.
- Sources of Data: Primary Data collected through a structured questionnaire. Respondents: Users of Amazon. Secondary Data: Research articles, journals, Books, reports, Websites and online

sources.

- Sampling Design: Sampling Method: Convenience sampling
 - » **Sample Size:** 100 respondents
 - » **Sampling Unit:** Individual online consumers using Amazon

Questionnaire (For Primary Data Collection)

Section A: Demographic Details

- **Age:** Below 20, 21-30, 31-40, Above 40
- **Gender:** Male, Female, Other
- **Education:** Undergraduate, Postgraduate, Others
- **Income Level:** Low, Medium, High

Section B: Consumer Behaviour & AI (Likert Scale) (Strongly Agree / Agree / Neutral / Disagree / Strongly Disagree)

1. I am aware of AI features used in Amazon.
2. AI-based recommendations influence my purchase decisions.
3. I trust product suggestions given by AI.
4. AI chatbots improve my shopping experience.
5. I often make impulse purchases due to AI recommendations.
6. AI helps me save time while shopping online.
7. I am concerned about my data privacy while using AI-based platforms.
8. I prefer AI-based assistance over human interaction.
9. AI improves my overall satisfaction with online shopping.

Section C: General Opinion

- How often do you shop on Amazon? Frequently, Occasionally, Rarely
- Do you find AI useful in online shopping? Yes, No

Analysis and Interpretation

Observed Data Hypothesis 01 Testing Result

AI Impact Level	Positive Buying Behaviour	Negative Buying Behaviour	Total
High Impact	45	15	60

Low Impact	20	20	40
Total	65	35	100

Chi-Square Calculation

Cell	O	E	(O-E) ² /E
1	45	39	0.92
2	15	21	1.71
3	20	26	1.38
4	20	14	2.57
Total χ^2			6.58

Interpretation The Chi-square test indicates that Artificial Intelligence has a significant impact on consumer buying behaviour. Since the calculated value (6.58) is greater than the table value (3.84) at the 5% level of significance, the null hypothesis is rejected and the alternative hypothesis is accepted.

Observed Data Hypothesis 02 Testing Result

AI Recommendation Influence	Purchase Decision (Yes)	Purchase Decision (No)	Total
High Influence	42	8	50
Low Influence	18	32	50
Total	60	40	100

Chi-Square Calculation

Cell	O	E	(O-E) ² /E
1	42	30	4.8
2	8	20	7.2
3	18	30	4.8
4	32	20	7.2
Total χ^2			24

Interpretation The Chi-square test result shows that AI-based recommendations significantly influence consumer purchase decisions. Since the calculated value (24.00) is greater than the table value (3.84) at the 5% level of significance, the null hypothesis is rejected and the alternative hypothesis is accepted.

Findings of the Study

- It is found that AI-based recommendations strongly influence consumer purchase decisions, indicating that personalized

suggestions play a key role in online shopping.

- The analysis shows that consumers are more likely to purchase products when influenced by AI-driven features such as recommendations and suggestions.
- The results indicate that AI enhances the overall shopping experience, making it easier and more convenient for consumers to make decisions.
- It is observed that AI contributes to increased sales by encouraging consumers to make quicker and more frequent purchase decisions.
- The findings suggest that consumers rely on AI recommendations for product selection, showing a growing trust in AI technologies.

Suggestions of the Study

- **Enhance Personalization Accuracy:** E-commerce platforms should improve AI algorithms to provide more accurate and relevant product recommendations based on consumer preferences.
- **Increase Transparency in AI Usage:** Companies should clearly inform users how AI systems work and how their data is used to build trust among consumers.
- **Strengthen Data Privacy and Security:** Strict measures should be taken to protect consumer data and address privacy concerns associated with AI-based systems.
- **Improve AI Chatbot Efficiency:** AI chatbots should be made more responsive and human-like to provide better customer service and support.
- **Provide Option for Human Interaction:** Platforms should offer a balance between AI and human assistance to cater to different consumer preferences.
- **Create Consumer Awareness:** E-commerce companies should educate users about the benefits and safe usage of AI technologies.

Conclusion

The study concludes that Artificial Intelligence has a significant influence on consumer buying behaviour in e-commerce

platforms such as Amazon. AI-driven features like personalized recommendations and chatbots play a vital role in shaping consumer purchase decisions and improving the overall shopping experience. The results show that consumers increasingly rely on AI for product selection, which enhances convenience, saves time, and boosts satisfaction. However, the study also highlights concerns related to data privacy and security, indicating the need for greater transparency and ethical use of AI technologies. Overall, Artificial Intelligence has become an essential component in modern e-commerce, contributing to both consumer engagement and business growth.

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