

Impact of Artificial Intelligence on Consumer Online Buying Behaviour and its Role in E-Commerce

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Abstract

Artificial intelligence has become popular now-a-days. The businesses use this technology to increase their sales, maintaining customer relationship, attracting customers, etc. AI tools have been used by the e-commerce companies to help their customers to choose right product for them. AI is significantly changed the online retail sector by enhancing the customer experience, streamlining activities, growth of business. This paper is descriptive in nature and based on secondary data which has been collected from various journals, books, internet, etc. The aim is to know the impact of artificial intelligence on online buying behaviour and its role in e-commerce. AI is used in many areas and it has positive as well as negative aspects on the buying behaviour.

Keywords: Artificial intelligence, Consumer behaviour, Online shopping, E-Commerce

1. Introduction

As science and technology advance, numerous new technologies are progressively making their way into the industrial production stage. Artificial intelligence, the cutting-edge technology of the twenty-first century, has steadily risen across a range of industries and shown signs of replacing more conventional labour-intensive sectors (Chenzhuoer Li, Runjie Pan, Huiyu Xin, & Zhiwen Deng, 2020).

Artificial Intelligence (AI) has significantly changed the online retail sector by boosting the experience of customers, streamlining activities, and stimulating growth of businesses. Artificial Intelligence systems examine a consumer's past purchases and browsing activity to offer tailored product recommendations. This makes it more likely that buyers will discover and buy goods that grab their interest (Aggarwal, Sharma, & Saxena, 2024). E-commerce has achieved amazing success in recent years. Despite the convenience that e-commerce offers, people are also demanding more and more of it. Artificial intelligence technology's growth creates new possibilities and trends for e-commerce development (Song, Yang, Huang, & Huang, 2019).

AI has greatly expanded corporate opportunities, particularly in the marketing domain. With highly individualised customer service and on-demand customer support, the company can improve the client experience while reducing time-consuming and expensive procedures. In order to increase customer loyalty and, consequently, profit, market analysts look for ways AI may improve their customers' purchasing experiences (Abu Daqar & Smoudy, 2019).

Artificial intelligence responds to consumer questions and provides personalised alerts about sales and wish list reminders. Additionally, AI assists companies in proactively developing new communication channels to interact with clients. Additionally, AI improves the process by providing more precise data and enabling e-commerce sites to locate appropriate customers (K. Ramya & K. Karthikeyan, 2023).

2. LITERATURE REVIEW

Khrais (2020) Concluded that as organisations recognise their role in shaping customer needs, the use of AI in e-commerce is expected to grow in the future. E-commerce companies now have the chance to grow their platforms as a result of the quick advancement of research technology and easier access to the internet. Notably, customer happiness and retention are influenced by AI in e-commerce. The changes and use of AI in e-commerce are concentrated on the customers. E-commerce may therefore create sophisticated customer relationship management systems and strengthen interactions with customers.

Pallathadka, et al. (2023) In their research paper highlighted AI application in e-commerce, business management and finance such as chatbots, handling customer data, image search, cybersecurity, stock management, portfolio management, sales. With the primary objective of creating standardised, trustworthy product quality control procedures and the pursuit of innovative, cost-effective customer outreach and service strategies, artificial intelligence (AI) has been applied in the financial and e-commerce sectors to enhance operational efficiency, supply chain management, and customer experience.

Fedorko, Kráľ, & Bačák (2022) The main goal of the study is to describe the basics of artificial intelligence and e-commerce and their advantages. The objective is also to assess the significance of artificial intelligence and its application in the context of e-commerce.

Song, Yang, Huang, & Huang (2019) concluded that Artificial intelligence algorithms have advanced quickly, are being used more and more frequently, and are having an increasing influence on elements like customer satisfaction and retention in e-commerce transactions. Artificial intelligence will eventually play a significant role in e-commerce's advancement.

Chenzhuoer Li, Runjie Pan, Huiyu Xin, & Zhiwen Deng (2020) conducted a study and found that among consumers who have contacted artificial intelligence customer service, 28.5% showed resistance, while 71.5% accept or remain neutral toward it, indicating widespread social acceptance. Consumers generally accept AI customer service due to its 24-hour availability, objective position, and future potential. Consumer resistance stems mainly from AI service quality lagging behind human service in targeting and effectiveness. Additionally, when AI cannot meet consumer needs, transitioning to human customer service is difficult.

3. OBJECTIVES OF THE STUDY

- To study the impact of artificial intelligence on consumer online buying behaviour.
- To study the role and application of artificial intelligence in e-commerce.

4. RESEARCH METHODOLOGY

The methodology used in this paper is descriptive in nature. The secondary data has been used from various research papers, journals, books, etc.

5. DISCUSSION

5.1 Application of AI in e-commerce, business management and finance

Pallathadka, et al. (2023) in their article highlighted AI application in e-commerce, business management and finance.

- **Sales:** Customer acquisition marks the beginning of sales. By evaluating your business objectives alongside various data sources, artificial intelligence can suggest the most suitable opportunities for acquiring clients. Additionally, artificial intelligence and machine learning can be utilized for price optimization to enhance profitability. These technologies can also play a role in refining consumer recommendations and conducting market basket analysis to boost sales.
- **Recommendation systems:** Machine learning algorithms can analyze historical data concerning preferences of customers and their behaviors. They can accurately forecast customer decisions and recommend the most appropriate products to them. This capability aids e-commerce companies in boosting sales and enhancing client satisfaction.
- **Credit Scoring, Loan Underwriting, Portfolio management:** Based on the examination of historical data, machine learning algorithms can categorise historical data and forecast future data. These algorithms greatly aid in portfolio management, loan underwriting, and credit scoring. It assists businesses in reducing risk.
- **Customer relationship management:** In previous times, CRM relied on its employees to collect a large amount of data in order to serve customers. Artificial intelligence, on the other hand, can now forecast which customers will purchase and how to better serve them. Applications of artificial intelligence could help with trend analysis and activity planning according to the most recent trends. Machine learning techniques can help advanced CRM learn and get better over time.
- **Chatbots:** Chatbots are being used by the majority of financial and e-commerce websites to increase client satisfaction and offer better services. Machine learning and artificial intelligence techniques are used in the development of these chatbots, enabling them to mimic human interactions. With the ability to learn from historical data, they can offer optimal recommendations to customers.
- **Handling customer data:** E-commerce platforms handle vast amounts of data, and machine learning algorithms can conduct analytical studies on historical data related to marketing, human resources, sales and purchasing patterns. These analyses can aid in maximizing profits, increasing sales, and optimizing resources, helping e-commerce and fintech companies customise their products according to the customer.
- **Human Resources:** AI engines find the right source to obtain the candidate. AI bots conduct video interviews, including initial screening. This can expedite and improve the hiring process. However, the work of an HR professional does not end with recruitment and selection. The commitment of workers is another crucial area that AI can enhance. Machine learning has the ability to suggest novel training methods.
- **Image search:** The image search facility on e-commerce platforms is powered by artificial intelligence, utilizing image processing algorithms to boost customer service. Customers can search for items using images, eliminating the need for keyword searches.
- **Stock management:** Artificial intelligence algorithms assist e-commerce businesses in stock management by conducting analytical studies on previous sales information. They identify correlations

between present and future sales, enabling managers to forecast sales and adjust stock levels accordingly.

- **Cybersecurity:** Machine learning (ML) algorithms have the ability to identify system vulnerabilities and offer appropriate security measures to ensure the safety of e-commerce platforms. Additionally, financial institutions utilize these algorithms effectively for detecting and preventing fraudulent activities.

5.2 AI and online shopping experience

Virtual try-on technology driven by AI is also becoming more and more popular, enabling customers to perform virtual trials on products before buying. By offering more precise suggestions, optimising the checkout procedure, and modifying prices in response to demand, artificial intelligence (AI) holds capacity for significantly improving the online shopping experience. In order to create a detailed user profile, AI can examine a person's browsing, purchase, and demographic data. Customised recommendations can then be made using this profile (Aggarwal, Sharma, & Saxena, 2024). (Abu Daqar & Smoudy, 2019) found that personalised customer service has a significant impact on the customer experience during the entire purchasing process. Additionally, AI will improve customer satisfaction by reducing the waiting period in call centres and other after-sales support services. According to (Ameen, Tarhini, Reppel, & Anand, 2021) study, AI enabled services provide convenience to customers but there are significant compromises that users of AI-enabled services may have to make, including a loss of privacy, control, and human interaction, as well as time consumption and feeling annoyance. All of these factors can negatively impact users' experiences with AI-enabled services.

Consumer acceptance of artificial intelligence in online buying is largely dependent on developing trust. Customers will view an AI-powered webshop or app as less helpful and develop a negative attitude towards it if they lack faith in it, which will lower online traffic (Nagy & Hajdú, 2021).

5.3 AI and online retailing and marketing

In recent times, the impact of AI on digital marketing has grown swiftly, allowing marketers to personalize their sales and marketing approaches in ways that go beyond expectations. By leveraging a vast array of data, marketers have been able to adapt their strategies to surpass what their customers had previously envisioned (Rabby & Hassan, 2021).

Businesses may better understand their target customers' requirements and preferences, identify them in digital marketing platforms, and increase transparency by utilising AI. Digital marketing platforms' AI tools are incorporated into live chat with chatbots, which interact with customers by quickly answering their questions in a user-friendly manner (Rabby & Hassan, 2021).

AI-powered tools are able to analyse vast amounts of data rapidly. Therefore, by using them to evaluate past and present consumer data, one may readily learn more about them and predict their future behaviour. Among other things, this could lead to the development of customised marketing campaigns or the identification of the most usual customer complaints. By merely examining the reports produced by AI, a business will be able to ascertain precisely what its clients desire, how to provide it, and how to update its offerings to better meet their needs. When AI evaluates and sorts the consumer data in a database, it can spot questions or problems that arise most frequently (Biswas & Patra, 2023).

5.4 AI and online buying behaviour

Bansal & Bansal (2023) in their research paper proposed some advantages and disadvantages of AI in online buying behaviour and they are:

Advantages of AI in online buying behaviour

- **Personalised recommendations-** AI makes personalised suggestions based on what a customer has bought, how they have browsed and what they have ordered in the past.
- **Stock management-** This enables executives to view the stock instantly and promptly make it available to customers. Customers will find it simpler to locate goods that satisfy their needs as a result.
- **Easy search-** It is easy for customers to find the products since AI algorithms generate precise results that are pertinent to their search.
- **Detection of fraud-** AI logarithms also protect the customers from fraud activities and make them aware.
- **Voice assistant-** Customers find it simpler to regularly assess the service when voice assistants are available. Customers are more likely to make a purchase when using voice-based assistants like Google Assistant, Alexa to make their shopping experiences more convenient and interesting.
- **Chatbots-** Chatbots are AI-powered natural language processors that understand human language to provide customer self-service, answer inquiries, assist with navigation, and complete transactions.
- **Visual search-** This AI tool finds products through image scanning or clicks, allowing quick product evaluation. Google Lens enables users to scan items to locate them across websites.
- **Customised product-** This feature enables the company to offer personalized content, tailored product suggestions, customized websites, AI-driven chatbots, and much more to its clients. This approach benefits customers by delivering products and services, while also helping the company boost its sales.

Challenges of AI in online buying behaviour

- **Privacy concerns-** When user information is gathered without permission, privacy issues occur. AI raises privacy problems because websites on e-commerce platforms gather consumer data. AI uses the user's location, search history, and personal information, just like personal suggestions. But a few times, these private information is misused.
- **Filter bubbles-** AI tools use customer search data and history for suggestions. However, filter bubbles can limit product search results by relating them only to previous information.
- **Dynamic pricing-** AI tools charge varied prices through the use of dynamic pricing algorithms. The prices they charge vary according to the customer's past browsing activity.
- **Over reliance on AI automation-** The suggestions and recommendations made by AI systems sometimes restrict consumers. Beyond that search history string, the website does not show anything more. Customers are consequently compelled to depend solely on the automation technology. Alternative offers are not available for customers to take advantage of or pass up. Consumers must read reviews and do their own research before making a purchase, even though they can use AI recommendations.
- **Fake reviews and scams-** Customers read other customers' reviews and ratings before purchasing a product or using a service to see how other customers feel about it or how satisfied they are. These kinds of reviews and ratings are produced by shopping sites using AI tools and technology. Customers may be mislead and their faith in online purchasing platforms eroded if this AI is occasionally utilised to produce false product reviews or ratings.

6. CONCLUSION

Artificial intelligence has been used by the e-commerce companies now-a-days and it enhances the online

shopping experiences of customers and there are some positive as well as negative aspects of AI like privacy, cybersecurity, trust, which have impact on the customers. In this digital era, AI has been used by most of the companies to know about their customers, their preferences and suggest products according to their interest. The customers also use AI for choosing different products, like in the category of beauty products, customers try different products virtually, etc. Hence, AI is useful for both businesses and customers.

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