

Effect of Artificial Intelligence on Consumer Awareness and Purchase Intention in Online Shopping

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DOI: <https://doi.org/10.47772/IJRISS.2026.100700720>

Received: 28 July 2026; Accepted: 03 August 2026; Published: 11 August 2026

ABSTRACT

The current study investigates the impact of artificial intelligence on consumer awareness and purchase intention in online shopping. With the advancement of artificial intelligence technologies like personalized recommendations, chatbots, predictive analytics, and targeted advertising, online shopping has changed dramatically in terms of how consumers identify products and make purchases. This study aimed to investigate how much AI increases consumer awareness, improves engagement, and purchase intention in online shopping. A qualitative methodology was used and the analysis of qualitative data was performed to investigate the influence of artificial intelligence on consumers' behaviors in the digital market through the review of the relevant literature. The findings show that AI plays a significant role in enhancing consumer awareness through personalized marketing, real-time customer assistance, and recommendation of products. Furthermore, AI has been found to have a positive influence on the purchase intention of consumers in terms of increasing consumer trust in online platforms. Nevertheless, data privacy, algorithmic bias, and trust are some of the major challenges in adopting artificial intelligence. This study concludes that artificial intelligence is an important determinant of consumer awareness and purchasing behavior in online shopping.

Keyword: Artificial Intelligence, Consumer Awareness, Online Shopping, Purchase Intention, Consumer Behavior

INTRODUCTION

The development of digital technology has revolutionized the global retail industry through the adoption of e-commerce. Internet connectivity, smartphones, and digital payment methods have facilitated the use of online e-commerce for the purchase of products and services. In light of rising competition among online retail stores, firms have adopted artificial intelligence to improve customer experience and service delivery as well as influencing customer purchasing decisions. AI refers to the computer's capability of carrying out tasks assigned to human beings in terms of learning, reasoning, decision-making, and problem solving. The artificial intelligence technologies used for online shopping include personalization recommendations, chatbots, predictive analytics, virtual assistants, and marketing automation (Dwivedi et al., 2021).

Awareness is a crucial element in the process of online purchasing since it dictates how much consumers are aware of and understand a particular product or service that is being sold to them. In online market environments, where consumers have access to large amounts of data as well as product alternatives, there is need for AI-enabled technologies to be used to assist consumers in identifying the products that meet their needs and preferences. With the help of machine learning algorithms and data analytics, online retailers can analyze the browsing history, purchasing behavior, demographics, and interests of the consumer to offer him customized recommendations. It helps in reducing information overload as well as increasing the consumers' knowledge about the available products in the market (Huang & Rust, 2021). Thus, with the help of AI, consumers receive personalized information.

In addition to the above, the introduction of artificial intelligence in online purchasing has greatly impacted the purchase intention, which is the probability that a consumer will buy a certain product after considering different alternatives. This is greatly influenced by a number of factors, which include the perceived usefulness of the product, trust, convenience, knowledge of the product, and shopping experience. Artificial intelligence helps in achieving these factors by providing instant customer services via chatbots, making personal product recommendations, forecasting customers' preferences, and quick decision-making. The use of artificial intelligence to interact with customers makes online purchasing convenient by giving instant answers to queries and twenty-four hours customer service.

Additionally, the growth in the use of AI technology in the e-commerce field can be attributed to its capability to enhance marketing efficiency. In traditional marketing techniques, marketers usually use general methods of promotion that do not take care of individual consumer needs. Conversely, through the use of AI technology, companies can create personalized marketing campaigns using information regarding consumer behavior and predictive analytics. The technology uses data generated by consumers and analyzes it to predict future consumer behavior, hence enabling the firms to provide consumers with advertisements that are customized to meet their demands. Personalized marketing has been shown to increase consumer awareness, enhance customer engagement, and help to make the right purchasing decisions since consumers tend to react positively to advertisements that suit them (Davenport et al., 2020).

Yet another significant role that AI plays in e-commerce is in the increase of customers' trust and ease of shopping experience. Trust continues to be one of the key factors influencing consumers' decisions to buy products using digital platforms since there are a lot of uncertainties in regard to product quality, payment security, and privacy protection of consumers' data when buying products online. The use of AI technologies helps to increase consumer trust through providing such services as safe payment authentication, fraud detection, personalization of interaction with customers, and fast customer service. Moreover, intelligent recommendations increase consumers' trust in their choice of products through recommending products based on validated customer preferences and past experience of buying.

While there are many advantages in using AI technology in the e-commerce industry, some problems have persisted. The first problem is related to the issue of data privacy and security. AI technology relies significantly on the gathering and analyzing of personal consumer data for providing personalized services. Therefore, consumer concerns with regard to how their personal data is being collected, processed, and stored have increased over time. The data breach, data leak, and misuse of consumer data have added to this concern. This might hinder the consumer's willingness to adopt AI technology if the organization fails to be accountable for data management (OECD, 2021).

The issue of algorithmic bias is another major challenge that comes from the use of AI in online shopping. AI algorithms are trained based on historical data; however, biased data can lead to recommendations or results that do not reflect the varied consumer tastes and preferences. This might result in limited visibility for products among some customers or inequality in marketing among various customer categories. Moreover, over-reliance on automation can lead to a decrease in the human touch when it comes to customer service in cases where empathy and problem-solving skills matter.

In addition to this, with the increased advancement of AI technologies, the level of competition among online merchants has increased to a great extent, and therefore, innovation has become a key requirement for the success of businesses. Those organizations which are successful in using AI technologies in their customer relationship management approaches would be able to comprehend consumer behavior and market trends and thus create competitive advantages. With the further advancements in AI technologies, companies need to focus more on developing intelligent systems to provide personalized online shopping experience, which can increase consumer awareness and purchase intention (Mariani et al., 2023).

Hence, an analysis of the effects that AI technology has on consumer awareness and purchasing intention has now become essential in this current era of the Internet. In the wake of the continuing changes being brought about by AI in the Internet marketing environment, the need for evidence-based approaches to implementation as well as issues associated with privacy, ethics, and consumer trust arises. The study of AI, consumer awareness, and purchase intention will contribute to existing literature on digital marketing and consumer behavior.

Statement of the Problem

The fast adoption of the technology of artificial intelligence has completely changed the online shopping environment by allowing companies to offer personalized recommendations, automated customer support services, predictive analytics, and marketing strategies. Through the use of these technologies, the efficiency of online shopping sites and consumer experience has been greatly enhanced. However, despite all these developments in the field, most of the online shops have not been able to deal with the problem of influencing consumer awareness and purchase intention. Consumers are faced with so much product information that makes it quite hard for them to recognize which products will meet their needs. Even though artificial intelligence has been designed to solve such a problem, its effect on consumer awareness and purchase decision is not well known.

In addition, although some prior works have recognized the power of artificial intelligence to increase the customer's involvement and aid decision-making process, the results have been ambiguous regarding its effect on forming consumers' purchase intention. While some consumers find the suggestions made by AI technology helpful and convenient, others are skeptical about such technology because of the worries associated with data privacy, bias, transparency, and the protection of the individual's information. Such issues may decrease the trust of the consumers in AI-powered platforms for shopping online, which, in turn, will affect the ability of AI technology to influence purchase behavior. Due to the fact that organizations currently make huge investments in AI-driven marketing techniques, it is vital to learn whether these technologies are really effective or not.

Moreover, increased use of AI by e-commerce websites has resulted in the creation of a knowledge vacuum regarding the effects of different AI technologies as a whole on consumers' behavior during the e-shopping process. The current body of research is concentrated on the study of particular AI applications, not on their collective effect on consumer awareness and purchasing intent. This makes it impossible for firms to adopt an appropriate AI strategy for addressing customer needs.

This study addresses the following problem: there is the need to investigate the effect of artificial intelligence on consumer awareness and purchase intention when buying things online. The objective of the study is to have a better insight into the influence of artificial intelligence technology on consumer behavior, as well as the opportunities and challenges that exist in adopting it. The results obtained will contribute to knowledge about digital marketing, as well as be useful for companies wishing to improve the level of customer engagement and purchase outcomes.

LITERATURE REVIEW

Concept of Generative Artificial Intelligence

Generative Artificial Intelligence (Generative AI) is a type of artificial intelligence that generates original content in the form of text, images, audio, video, and computer codes based on pattern learning through machine learning

algorithms trained on massive data sets. It is different from conventional AI technologies in that the former does not merely interpret and classify the information but rather generates output in response to prompts given by users. Generative AI is extensively used in businesses and e-commerce for marketing, customer services, and content generation, thus enhancing customers' engagement and decision-making (Dwivedi et al., 2023; Feuerriegel et al., 2024).

Consumer Awareness

Consumer awareness involves the level at which consumers have knowledge and awareness about the products and services, brands, prices, qualities, and rights as consumers prior to making purchase decisions. In online shopping, consumer awareness is achieved because of the availability of accurate information about products, reviews, customized recommendations, and digital communication from marketing. It should be noted that artificial intelligence contributes greatly to the rise in consumer awareness through product recommendation according to customer preferences. Awareness on the part of the consumer helps make better decisions on the part of consumers and improves the overall experience of shopping online. The awareness of the consumer needs to be noted as one of the main factors that influence consumer decision-making.

Purchase Intention

Purchase intention means the probability of buying a certain product or service based on information and available alternatives. It is one of the crucial stages in consumer behavior and is affected by such things as value perception, trust, quality of the product or service, convenience, and customer experience. In the case of online shopping, the role of artificial intelligence in boosting purchase intention is seen in the provision of personalized product recommendations, intelligent customer service, and predictive product suggestions, which make the online shopping experience more pleasant for consumers. Good interaction with the technology boosts consumer confidence and leads to better purchase intentions (Ajzen, 2020; Mariani et al., 2023).

Empirical Review

Huang & Rust (2021) studied the importance of the use of artificial intelligence in promoting the awareness of consumers and engaging with them through digital marketing strategies. In this study, there is a literature synthesis on the empirical evidence generated due to the use of artificial intelligence in e-commerce platforms with the use of recommendation systems, machine learning and customer interaction techniques. From the analysis of empirical research and evidence from organizations, it was identified that the use of AI helps in increasing the awareness level of the consumers due to provision of personalized product recommendations according to the browsing and buying patterns of the customers. It was found that the use of AI decreases information overload and promotes the process of product discovery and makes the customers aware of those products that are relevant for them.

Torres and Delgado (2023) examined consumer engagement with artificial intelligence-enabled chatbots through online shopping. The research adopted a quantitative research design that utilized online consumers who had engaged with chatbots previously in e-commerce platforms. Data analysis was performed using the structural equation modeling approach to determine the effect of chatbot interaction on customer engagement and consumer behavior. It was found out that AI chatbots greatly increase consumer awareness through provision of relevant product information and personalized help at a point when consumers inquire about products. This has led to greater product knowledge and satisfaction among consumers.

Le (2023) conducted research about the determinants of customers' purchase intention using AI-driven chatbots in Vietnam. The study applied the quantitative survey methodology in the study and collected data from 492 respondents who have experience interacting with the chatbots while shopping online. Structural Equation Modeling was utilized in the analysis of the relationship between information credibility, perceived usefulness, chatbot adoption, and purchase intention. It was found out that information credibility, perceived intelligence, interactivity, and consumers' attitude towards AI greatly enhanced chatbot adoption and in turn, had a positive impact on purchase intention.

Chen (2023) studied the comparative effects of artificial intelligence (AI) chatbots versus human customer service on consumers' purchase intentions during online shopping experiences. This study was done using four controlled experiments among online consumers buying search and experience goods. Results show that AI chatbots had positive effects on purchase intentions when correctly paired with product types. Processing fluency and service quality perceptions were mediating effects of the relationship between AI-based customer service and purchase intention, whereas certainty in demand was a moderating effect.

In a study conducted by Nagy and Hajdu (2022), consumer attitudes towards AI technology use while shopping online in Hungary were examined. In this research, the Technology Acceptance Model (TAM) was used, and data was gathered through questionnaires from 439 consumers who purchased online. Structural equation modeling was utilized to analyze factors influencing the acceptance of AI. The results showed that among all factors analyzed, trust and usefulness of the technology were found to be significant predictors for consumers to accept AI technology. However, privacy, data security, and transparency concerns hampered the acceptance of AI because of low consumer trust.

According to Zhang et al. (2023), the impact of recommendations made by artificial intelligence chatbots on consumer adoption was analyzed. For this purpose, a sample of 530 artificial intelligence chatbot users was investigated, and structural equation modeling based on the Elaboration Likelihood Model was conducted to analyze the data obtained. It was revealed that while the recommendation of artificial intelligence chatbots had a strong effect on consumer adoption through cognitive and emotional trust, consumer worries about algorithm transparency and credibility were important obstacles to adoption.

THEORETICAL FRAMEWORK

Technology–Organization–Environment (TOE)

Technology-Organization-Environment (TOE) framework is a concept introduced by Tornatzky and Fleischer (1990) in order to identify the determinants of technological innovations' adoption and implementation in organizations. According to this theory, technological adoption depends on three interdependent contexts: technological context that represents technological availability; organizational context comprising resource allocation in the company, size, management, and technological capability of the organization; and environmental context covering such factors as competition, customers' expectations, regulations, and industry trends. Even though TOE framework has been initially designed to determine factors of organizational technological adoption, it has been widely used in research related to implementation of new technologies including AI technologies (Baker, 2022).

The TOE framework is quite significant to this current research since it provides a comprehensive view of how the organization adopts AI technology and impacts consumer awareness and purchase intention during online shopping. In terms of technology, the use of AI technologies like personalized recommendation system, predictive analytics, and chatbots contributes towards enhancing the awareness of the consumers through providing personalized and precise information about the products. On the other hand, the organizational context explains how firms that have a sufficient technological infrastructure and expertise along with having a proper organizational strategy to implement the AI solution are much able to do so. Furthermore, the environmental context discusses the role of competitive pressure, change in consumer expectations and digital transformation in pushing the organizations to adopt AI technology that helps in building customer trust and increasing purchase intention. Hence, the TOE framework offers an appropriate theory for this research.

RESEARCH METHODOLOGY

Research designs are always described as the plan of the research process aimed at defining the variables and their interrelationships. In the present research, the research design employed is systematic qualitative content analysis. The research uses the secondary data collection approach in which the sources of data and information are the sources of published information. Data will be collected from reliable sources like published literature

including scholarly journals, government documents, industry reports, and even online databases. These sources of information will be analyzed systematically to define the trends and patterns related to the research problem. The systematic search will be conducted using databases such as Google Scholar, ResearchGate, JSTOR, and others. The inclusion criteria involved the studies on Effect of Artificial Intelligence on Consumer Awareness and Purchase Intention in Online Shopping, particularly those conducted between 2020 and 2025. Overall, 25 sources of information were analyzed and reviewed. The collected materials were analyzed by means of content analysis.

Data Presentation and Analysis

Effect of Artificial Intelligence on Consumer Awareness in Online Shopping

The application of AI in e-commerce has led to increased awareness of consumers when it comes to the discovery of products in online shopping platforms. AI allows businesses to personalize and provide consumers with relevant information. AI technology such as recommendation engines, predictive analytics, virtual assistants, and chatbots use the browsing history, purchase behavior, and consumer preferences to recommend products that meet consumers' interests. This way, the personalized experience makes it possible to reduce information overload and ensure that consumers get access to new products through personalized experience that they would not access through traditional search methods. Moreover, the application of AI in e-commerce provides immediate responses to inquiries related to products, details about the products, customers' reviews about the products, and real-time update regarding the availability of the products. Through the features provided by AI, the awareness of the products among consumers is heightened (Huang & Rust, 2021; Dwivedi et al., 2021).

Influence of Artificial Intelligence on Consumers' Purchase Intention in Online Shopping

Nowadays, artificial intelligence is becoming an essential element affecting consumers' purchase intention, due to better shopping experience and fewer uncertainties of online transactions. AI systems help to make personalized product recommendations, offer intelligent customer support, use dynamic pricing, and make predictive suggestions to help customers better assess the products. With the help of algorithms of machine learning, artificial intelligence determines consumers' preferences and provides relevant suggestions that make products more useful and convenient for customers. Artificial intelligence chatbots also boost customer's trust by giving instant answers to their questions, solving any problems, and helping them to buy products. Such contacts create trust towards online platforms and stimulate consumers to make purchases. Additionally, using predictive analytics, companies can predict consumers' needs and provide appropriate promotions, which have a positive impact on consumers' decision-making process. As AI technology is developing and making online shopping better and easier, consumers will be more inclined to buy products from companies that use intelligent technologies (Mariani et al., 2023; Verhoef et al., 2021).

Challenges Associated with the Adoption of Artificial Intelligence in Influencing Consumer Awareness and Purchase Intention in Online Shopping

Although there are many advantages of applying artificial intelligence in online shopping, there are also certain obstacles that impede the effectiveness of technology in increasing awareness and purchase intentions of the customers. First, one of the issues that arise is data privacy, since the main component of using artificial intelligence is collecting and analyzing personal information of consumers. Consumers are wary of how their data is stored, processed, and used, and, therefore, are less likely to trust the platform. Besides, the recommendation generated by AI could be misleading because of the bias of the training data set, which means that people would not get proper product exposure and satisfaction. The inability to trace the AI decision process is another obstacle that could lead people to distrust the AI recommendations. There are also other issues that impede the successful application of AI, such as technical limitations, cybersecurity risks, high costs of implementation, and the lack of interaction with the customer in customer services (Dwivedi et al., 2023; UNESCO, 2021).

DISCUSSION OF FINDINGS

i) The findings shown above clearly indicate how artificial intelligence (AI) has immensely helped increase the level of awareness among consumers in online shopping by ensuring that the business organizations are able to offer personal and relevant information all through the customer journey. The AI-driven tools such as the recommendation system, prediction analytics, virtual assistants, and the chatbots have been used to analyze the consumer's browsing history, purchasing behavior, and other preferences to offer them with information on products that match their preference. This process prevents the problem of information overload and ensures that the consumers are able to find relevant products. This is as explained by the study carried out by Torres and Delgado (2023) in regard to the customer interaction with AI-driven chatbots in online shopping environment. It was indicated that the use of AI chatbots has greatly increased the consumer awareness through the provision of relevant and timely information on the products.

ii) From the analysis of results, it becomes clear that Artificial Intelligence has emerged as one of the major factors that affect consumer's buying behavior because it improves the overall process of online shopping and decreases uncertainty that arises during online purchases. This can be explained based on the study conducted by Chen (2023), who examined the comparative impact of the use of AI chatbot and customer service provided by humans on consumers' purchase intention in online shopping. The results indicated that use of AI chatbot improved consumers' purchase intention when it was well-matched with product type. Processing fluency and service quality were found to be mediating the impact of AI customer service on purchase intention, while demand certainty moderated the effect

iii) First, based on the results of the analysis conducted, it can be seen that although there are many advantages of artificial intelligence in online shopping, several problems exist which prevent the technology from being effective in enhancing the knowledge of consumers about products and services as well as making them more interested in purchasing these goods and services. Firstly, one of the major problems is the privacy problem associated with AI because for AI to work, it needs consumers' personal data to generate relevant recommendations for them. This research supports the research conducted by Nagy and Hajdu (2022) on consumer acceptance of artificial intelligence in online shopping in Hungary. According to the results of their research, trust and perceived usefulness of AI have been identified as the strongest factors influencing the acceptance of this technology. However, privacy, security, and transparency issues have a negative impact on trust.

CONCLUSION

The study explored the effect of artificial intelligence on consumer awareness and purchase intention in online shopping through literature review of existing scholarly works on the use of AI technologies in e-commerce. From the literature review, it was established that the role of artificial intelligence in modern online shopping has been critical since organizations are now able to offer personalized recommendations, AI-based chatbots, predictive analytics, and targeted advertising, which help enhance consumer experience during the shopping process. This research paper shows that the use of these technologies has improved consumer awareness through provision of useful product information, personalized marketing communication, and customer service that helps consumers make informed purchasing decision. Furthermore, the study shows that artificial intelligence plays a critical role in improving the purchase intention of consumers through increased convenience, increased customer engagement, improved trust, and reduction of uncertainties of online purchases. However, even with these benefits, privacy issues, algorithmic bias, transparency, and cybersecurity continue to pose challenges towards the wide adoption and acceptance of AI technology in online shopping. Thus, it can be concluded that artificial intelligence plays a critical role in determining consumer awareness and purchase intention.

RECOMMENDATIONS

On the basis of the results of this study, it is recommended for online sellers to focus on using new generation AI technologies like personalized recommendations, intelligent chatbots, and predictive analytics to increase the

level of consumer awareness and improve the purchase intentions of consumers. It is essential to make sure about the privacy and security of the collected consumers' data through strict privacy and cybersecurity practices that satisfy the requirements of data protection legislation. It will help in building trust among consumers regarding the usage of AI-based platforms. Moreover, there should be continuous evaluation and improvement in the AI algorithms to avoid any kind of biasness and keep the recommendation process fair, precise, and up to date for the different types of consumers. Employee training and regular monitoring of AI technologies can be helpful in keeping the services effective in addressing complicated consumer concerns. Finally, it is necessary for policymakers and regulatory bodies to work on ethical guidelines for the application of artificial intelligence in the e-commerce domain. Future researchers are suggested to conduct empirical research on this topic with the help of quantitative or mixed methods in other industries and geographical locations.

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