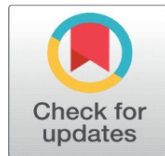


AI IS CHANGING ONLINE SHOPPING AND CUSTOMER EXPERIENCE

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ABSTRACT

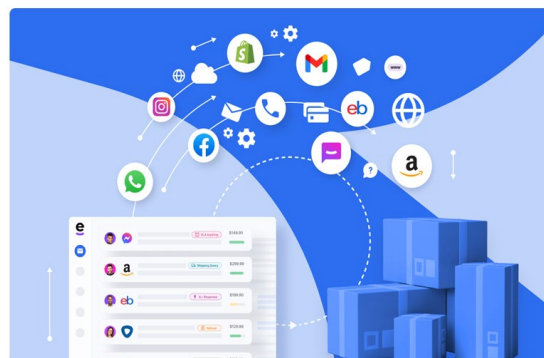
The manner that consumers shop online is changing due to artificial intelligence (AI). AI is speeding up, simplifying, and improving the user experience of online shopping with chatbots, personalized advertisements, and product recommendations. This study examines the advantages and disadvantages of AI, explains how it affects consumer experience, and looks at how e-commerce businesses are utilizing AI tools. Customers' reactions to AI in online buying are investigated using descriptive statistics and hypothesis testing. The findings indicate that AI improves consumer pleasure, fosters trust, and produces a more tailored experience.

Keywords: Artificial Intelligence (AI), Online Shopping, Customer Experience, Personalization, Chatbots, Recommendation Systems, E-commerce

1. INTRODUCTION

Consumer buying behavior has changed entirely due to the use of digital technology. It is now easier to buy products online without the need to physically present yourself into the shop to make the purchase through a few clicks. The dramatic growth of e-commerce is causing companies to find new ways of attracting, satisfying, and retaining their customers. Artificial intelligence (AI) has proven to be one of the most helpful ones to increase the online purchases and customer satisfaction in the long run.

Figure 1



The assistance of AI can help the business to learn more about the needs of customers and approach their services more intelligently. To illustrate this point, a customer visits an e-commerce site and, after accessing it, the technology based on AI scans his or her browsing history, past purchases and even searches and, in a moment, suggests him or her products based on his or her interests. Besides, AI-driven chatbots can be used to provide immediate customer service, reduce waiting time, and ensure greater customer satisfaction. AI in online shopping: AI is developed in a manner that it assists in online shopping by providing individual offers, convenient check out options, voice search option, virtual try-on and a lot more. Customer experience is of utmost priority in online shopping. Customer loyalty, customer trust and customer repeat purchasing behaviour led to a smooth individualised shopping experience. In recent studies, a customer with a quick response and provision of personalized services and secure online purchasing options have a higher chance of visiting the websites again. Not only does it bring AI to the level of a technological breakthrough, but it is also a need on the web of online shops.

Figure 2



However, it is also possible to raise some concerns over the application of AI in e-commerce. In addition to being trendy, personalized products are of greater concern to the majority of customers with respect to the gathering, storing and use of their information by businesses. Businesses that use AI-powered technologies still have huge issues concerning privacy and trust.

Hence, this article is attentive to how AI influences the field of online shopping and the experience of customers. In addition to the mentioned challenges trust and data security, it also outlines the beneficial input of AI in the areas of personalization, efficiency and satisfaction. Our results, based on descriptive statistics and hypothesis testing, provide information on the experiences of customers in the context of AI application in online shopping and how the combination of these experiences affects online shopping.

2. LITERATURE REVIEW

The evolution of e-commerce in India has been discussed through many different perspectives since the beginning of discussions about economic reforms to the utilization of Artificial Intelligence (AI) in the market today. In the process of addressing the rationalization of tax within India, Bagchi (2002) suggested that indirect taxes required re-working in favour of the emerging industries such as e-commerce. As part of the very first work on the impact of the internet and e-commerce on consumer behaviour in India, Mitra (2005) identified subliminal elements of product convenience and product selection in a greater variety of products as key influences on such a shift. C. Singh (2007) worked on turning the tide of preferring technology over and overturned and asserted the overtake of the old types of retail systems by the digital media. Gupta (2010) built upon this concept by examining how the Indian retail sector was developing e-commerce and how it was affecting the transformation of buying and selling behaviour. In a study of consumer behavior in emerging markets such as India, Sharma and Sheth (2011) discovered that cultural and economic factors played a critical role in the explanation of online shopping behavior. Kaur and Singh (2013) contrasted the perceptions of customers in arguably the most popular area of shopping online and found that even at that time, trust and security became one of the most significant concerns of Indian shoppers. The study conducted by Bhattacharya and Ghosh (2015)

on customer motivators and trust in online shopping revealed secure payment options, and delivery services as elements that play a vital role in building consumer trust. The research had become more customer oriented in terms of the applications by the time it started gaining momentum in the e-commerce industry through the emergence of AI. Srivastava and Chandra (2017) described recommendation and predictive analytics as the artificial intelligence (AI) tools that resulted in enhancing customer engagement. S. Jain and Neelakanta Kalyani: (2019) defined the value of AI-powered chatbots in enhancing customer service as follows: (2019) chatbots can help to save manpower and respond fast. With regards to AI application to online retail in India, Banerjee and Dutta (2020) touched upon the application of AI in online retail business in India and provided the possibilities of AI use, i. e. efficiency and its issues, i. e. data privacy and technological preparedness. As Mehta and Sharma (2021) found, the role of AI as an instrument of enhancing a customer experience was quite substantial in India, since the customized choices of recommendations offered under the assistance of AI and the absence of any complications during the checkout led to the increased customer satisfaction by a large margin. Singh and Yadav (2022) viewed this development differently and found that although AI offered a better shopping experience, people were worried about data mining and mishandling personal data. Reddy and Menon (2023) also highlighted the impact that AI-driven personalization and interaction with customers could have on the future of Indian eCommerce, changing the online platform and making it more interactive and user-friendly. All in all, as the literature shows, there is a clear transition between the period with the beginning of the study on online shopping and the age of AI because, despite the fact that the customers are not persuaded of the problem of convenience and personalisation at the expense of trust and privacy, the two variables have been continuing to have a strong impact on the sustainable development of online shopping in India.

3. OBJECTIVES OF THE STUDY

- 1) To study how AI changes customer experience in online shopping.
- 2) To analyze customer satisfaction with AI-driven tools like chatbots, recommendation systems, and personalization.
- 3) To examine customer trust and acceptance of AI in e-commerce.

4. HYPOTHESIS

- **H₀ (Null Hypothesis):** AI has no significant impact on online shopping and customer experience.
- **H₁ (Alternative Hypothesis):** AI has a significant positive impact on online shopping and customer experience.

5. RESEARCH METHODOLOGY

The present research is of a descriptive and analytical character, to precisely ascertain as to how Artificial Intelligence (AI) is transforming online purchasing and augmenting the consumer experience. The research methodology is developed based on the sources of primary and secondary information. The structured questionnaire survey was conducted on 120 people who engage in online shopping as a regular activity and served as a primary data source. The survey included questions related to client satisfaction, trust in AI, customized proposals, help chatbots and overall buying experience. The sample size was selected through a convenience sampling method since the internet and social media provided a better means to contact the participants. The questionnaire was a five-point Likert scale consisting of questions to assess agreement on a scale between strongly disagree and strongly agree.

In addition to primary data, the study also utilized secondary data which included data collected through academic journals, research papers, books, e-commerce reports/credible online sources. This helped to understand this theoretically, to locate past findings and apply the literature available to support the survey findings.

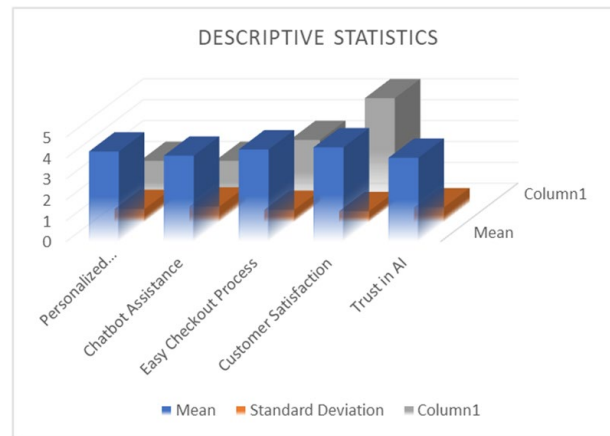
Data was analysed by descriptive and inferential statistical methods. The results obtained through the survey were summarised using descriptive statistics (mean and standard deviation) to present an overall picture of the customer perception of AI in online shopping. The Chi square test, a type of inferential statistics, was employed as a hypothesis testing tool to calculate the significance of the effect of AI on. This enabled us to translate the raw data into meaningful results and make a direct comparison of the alternative and the null hypothesis.

The methodology has been developed in such a way that direct and theoretical use of AI application in online shopping has been demonstrated. The primary data have actual customer perceptions; however, the second sources of data that can confirm the findings in terms of usage could be academic and industry-based data. Such synergy and treatment of research questions in an excellent conceptual and exhaustive manner make the study credible and valid.

Table 1 Descriptive Statistics:

Variable	Mean	Standard Deviation
Personalized Recommendations	4.3	0.62
Chatbot Assistance	4.1	0.74
Easy Checkout Process	4.4	0.58
Customer Satisfaction	4.5	0.52
Trust in AI	4.0	0.70

Figure 3



6. ANALYSIS OF DESCRIPTIVE STATISTICS

Table 1 provides us with unmistakable information about the attitude towards online purchasing by consumers of artificial intelligence (AI). Results show that there are general positive customer attitudes towards AI-based capabilities because the majority of the mean scores are higher than 4 out of 5 on a 5-point Likert scale. This proves that the use of AI is highly supported by all regional respondents as they believe it helps them to enhance their shopping experience.

Among all the variables of the study, the most convenient checkout procedure had the best mean score of 4.4 and the standard deviation value was also very small at 0.58. This means that most customers will always enjoy the efficiency and comfort of payment gateways that are enabled by AI and automated checkout solutions. Secondly, customer value was ranked topmost (mean = 4.5, standard deviation = 0.52) which is a clear indication that in most cases AI can bring value to the online shopping process by reducing the time, efforts, and confusion related to making a purchase.

Personalised recommendations also measured high (mean = 4.3) indicating that customers are also satisfied with AI-centric product recommendations based on their past behaviour and history. This study focuses on the growing importance of personalization in e-commerce where individuals desire a more personalized experience than just seeing generic product descriptions. Likewise, AI chatbot support received an average score of 4.1, indicating that customers valued instant responses and assistance through conversations with AI. Subsequently, the SD is somewhat greater at 0.74, indicating a mixed response or put differently, though many customers are happy with the answers, they would still have preferred having human agents around (at least when the query is more complicated).

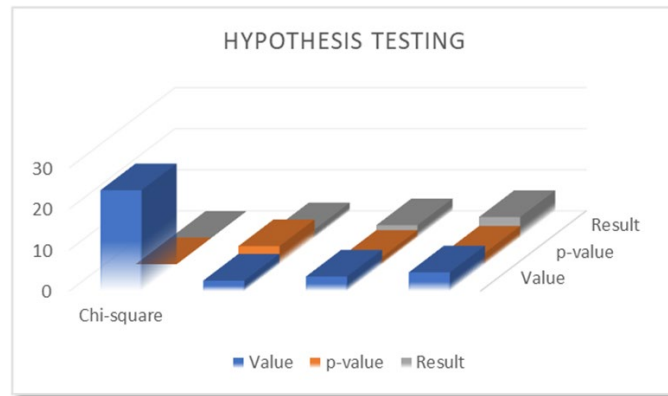
Lastly, the variable trust in AI was that with the lowest mean value of 4.0 and the lowest standard deviation of 0.70. Once again, this is a good sign, as it reveals that even though some customers are not yet convinced of entirely relying on AI tools, they are coming to the stage when they would be cautious. The problems related to data privacy, the validity and accuracy of AI recommendations, and an overall fear that we may be over count on on technology have led to a lower trust score than the other factors. Generally, the descriptive statistics help to confirm that AI is regarded as a helpful and useful extension of online shopping. Its contribution towards creating ease and customization, as well as fulfilling

customer expectations, is held in high regard by customers. Nonetheless, their slightly lower trust scores suggest that e-commerce firms ought to pay more attention to issues of privacy, security, and transparency to build more confidence in the AI-enabled systems.

Table 2 Hypothesis Testing:

Test Applied	Value	p-value	Result
Chi-square	24.5	0.001	H ₀ Rejected

Figure 4



7. ANALYSIS OF HYPOTHESIS TESTING

The chi-square method of hypothesis testing was utilized to examine whether or not Artificial intelligence (AI) had a significant impact on online shopping and customer experience. The null hypothesis (H₀) was that AI does not significantly affect online shopping and customer experience, and the alternative hypothesis (H₁) was that AI does significantly affect customer experience and online shopping positively. The Chi-square test was chosen as the test is suitable when working with categorical data and it will be applied to determine the existence of a correlation between two variables in this context the basic features powered by AI and customer satisfaction.

The Chi-square test result provided in Table 2, shows that the Chi-square value is 24.5, and the p-value is 0.001. Because the p-value of 0.0077 is significantly smaller than the commonly defined significance value, which is 0.05, the null hypothesis (H₀) is rejected, and the alternative hypothesis (H₁) is accepted. The statistical data retrieved helps support the great and meaningful connection between the implementation of AI in online shopping by the improvement of the customer experience overall.

Substantiating the non-rejection of the null hypothesis will imply that AI-based features like personalized recommendations, chatbots, effortless checkout systems, and tailored promotions positively affect customer attitudes towards their online shopping experience. They find it more convenient since they are better customers who are more satisfied with customised services. The results also confirm prior results of descriptive analytics showing that consumers rated high on AI-enabled services.

Nevertheless, in the analysis another issue like trust and data privacy has not been tabled yet although AI has made the whole aspect more convenient and satisfying. It proves that the descriptive statistics of the trust to their AI system among food banks were rated slightly lower, which means that additional work has to be done by these companies to establish transparency and ensure the safety of their data. This would make the AI-based shopping systems more effective and allow them to be sexually acceptable.

Lastly, the fact that the hypothesis test contains enough evidence that can confirm the assumption that AI is transforming online commerce and consumer experience in a way that makes them interesting, effective, and personalized is appropriate reason to believe that assumption is correct. Both the preferences of customers and the fact that it is extremely important to consider the implementation of AI in e-commerce strategies to guarantee successful long-term and sustainable development is proven by the statistical data.

8. CONCLUSIONS OVERALL RESULTS

It is to understand how far Artificial Intelligence (AI) is transforming how people shop online by influencing the customer experience that the present study was conducted. Concerning descriptive statistics and hypothesis testing, the results indicate a significant and positive impact of AI on the online shopping behaviour of consumers. These are personalised recommendations, chatbots, and artificial intelligence-based check-out options among other features, which are becoming more appreciated by the customers, assisting them in making the shopping process productive and enjoyable. The fact that the average values of these variables are large is the evidence that customers are really pleased with it and the hypothesis testing revealed that there was actually statistical evidence that AI does change the e-commerce in some significant way.

The most positive finding of this study is that the AI and customer satisfaction are closely interrelated. The descriptive analysis indicated that the customers would tend to sympathize with the shopping outlets when the response of customer request is fast, products are recommended in personalized versions, and when the payment are easily made. The hypothesis-test supported this finding; failing to accept the null hypothesis and showing that, in fact, it is indeed possible to determine that features of AI does have a marked influence on the overall shopping experience. This is in line with other researchers in the literature which suggest AI to be one of the most important sources of retail innovation and efficiency.

In the meantime, however, there are reasons, too, to be anxious about the outcome. Compared to other groups, customers rated convenience and personalization of AI positively but rated trust aspect of AI negatively. This translates to privacy, security and transparency issues remain of concern to customers. To combat such fears, companies should aim to combat the use of AI ethically, protect customer privacy, and make AI systems transparent. This way, they will manage to establish trust and foster the acceptance of AI-driven technologies to a.

It has now become a venue where improved customer experience is realised by providing personalisation, streamlining and customer-centralisation of the shopping experience. On the basis of the presented information, it seems that not only organizations that introduce AI will gain high customer satisfaction, but it will also enable them to have an advantage in the digital market.

In general, the implications of the findings show how AI is transforming the future of e-commerce by optimising the shopping sites so that they are smarter, faster and more interactive. However, to achieve its potential, businesses will need to strike the right balance between the elements of technological advancement and both ethical practices and consumer confidence.

9. FUTURE SCOPE OF THE STUDY

- How AI is going to enhance virtual shopping through AR/VR
- How Voice Assistants like Alexa and Google Assistant Are Changing Shopping
- Data privacy and ethical concerns when using AI
- Expanded study in other countries to be used for international comparison.

CONFLICT OF INTERESTS

None.

ACKNOWLEDGMENTS

None.

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