

A Study on the Impact of Artificial Intelligence on Online Customer Satisfaction

Mr. S.Arun Logesh,

II year MBA,

Department of Management Studies,

Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Chennai,
India.,

lokiarun560@gmail.com.

Dr. S.Raja,

Associate Professor,

Department of Management Studies,

Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Chennai,
India,

ksrja22486@gmail.com.

Abstract:

The study's objectives are to automate the purchasing process and provide tailored recommendations, artificial intelligence has simplified the communication between online retailers and their customers. AI has been instrumental in modernizing the retail industry. The different advantages that customers have noticed when buying with AI-enabled online shops are compiled in this article. To ascertain how AI is changing online businesses and how it affects customer satisfaction, we sampled 334 online shoppers. Multiple regression analysis was used to examine the data. and exploratory factor analysis (EFA). Customer satisfaction with AI-enabled online retailers was found to be positively impacted by chatbots, personalised shopping experiences, instant interaction, and AI-based product recommendations.

Keywords: Online Retailing, Product Recommendations, Automation, Artificial Intelligence,

I.INTRODUCTION:

The marketplace model, which is the modern definition of e-commerce, pertains to the application of facilitating product-related transactions between various vendors and customers worldwide. Through internet-enabled smart mobile and computer devices, the transactions are completed online. The various types of e-retail businesses include business-to-business, where manufacturers and other businesses sell their products to wholesalers (Stefko et al., 2019); business-to-customer, or B2C, where businesses sell to end users; and consumer-to-consumer, or C2C, where individuals sell products to one another.

The study focuses on consumer-to-consumer (C2C) transactions, wherein online marketplaces or shops sell goods and services to customers or end users. Generally speaking, items are delivered by delivery partners via vendors, and payments are made online or by Cash on Delivery.

The online retail sector has greatly improved consumer convenience and ease of living (Omonedo & Bocij, 2014). With just a few clicks, customers can obtain the goods or services they require at whenever. The E-Commerce platform offers items that are not accessible nearby and can be delivered right to your door. This procedure conserves energy and time. Digital transactions have supplanted physical transactions.

Artificial Intelligence

The idea of artificial intelligence (AI) within business is currently popular. Systems with AI capabilities hold the capacity to improve the human experience. According to Chui (2017), AI stands for artificial intelligence is the engineering and science used for the production of intelligent, decision-making computers. AI systems use data gathered from several sources to make quick decisions or offer a workable solution.

Artificial intelligence (AI) typically makes good conclusions because it uses real-world or comparable data as input. The procedures designed to ensure a certain task runs smoothly are linked to the entire system. By doing this, the system gains the capacity for determine the proper rationale behind the process meaning and produces the intended outcomes (Fenwick et al., 2019).

AI is critical to every sector of the economy, including healthcare. AI enables data mining, highly accurate patient diagnosis, and appropriate treatment planning according to a patient's most common medical diseases. Additionally, it aids in robotic surgeries, medication administration, drug discovery, and medical imaging (Panch et al., 2018).

Objectives:

Primary Objective

- A Study on the impact of Artificial intelligence on online Customer Satisfaction.

Secondary Objectives

- To determine the factors determining the Role of Artificial Intelligence in transforming the E-retailing Business.
- To measure the impact of AI-enabled Retailer services on Customer Satisfaction for Online Retailing.

Review of Literature:

Businesses benefit greatly from AI compared to other market participants. Providing real-time discounts, tracking preferences, and making product recommendations to users are a few significant uses of AI (**Davenport et al., 2020**).

The system collects information from user search habits, the frequency with which a user visits a certain product category, the kind of things a user loves and would want to purchase, and other comparable, useful data. After analysis, recommendations are generated that are likely to influence a person to purchase pertinent goods. In a similar vein, chatbots—AI-based applications—play a major role in resolving concerns that clients may have when making purchases (**Michiels, 2017**). These chatbots, which are installed on e-commerce websites, are further instances of artificial intelligence. They are designed to respond to queries entered by customers (**Lee, 2020**). Retail giants such as Amazon have amassed an astonishing 35 per cent of their total revenue by cross-selling and upselling products that are available on their platform, which includes their e-commerce website and application. The platform that Amazon developed, which is powered by artificial intelligence, is well-known as among the company's greatest success stories to date. Product suggestion technology, which is drawing in more customers in Amazon's targeted market, is the primary factor driving the company's growth (**Tou et al., 2019**).

Additionally, chatbots can recommend deals and discounts. Consequently, internet buyers are more likely to purchase those things since they feel fortunate to have found them for a lower price than they had anticipated (**Roggeveen et al., 2021**). The global e-retail market has exceeded \$4.8 billion, which is unquestionably a significant amount and shows that a greater number of customers are turning to e-retail due to the companies' appealing e-commerce platforms. According to research by Gartner, in the next several years, artificial intelligence-based systems will oversee over 80% of customer interactions (**Yablonsky, 2019**).

Artificial intelligence has shown to be beneficial to the retail industry in recent years, increasing the number of sales and streamlining procedures to help firms function efficiently. Small retail companies are leveraging AI to grow their businesses because they recognize the value of Artificial Intelligence and machine learning in this industry. Twigg is a startup that aims to enhance the intelligence of search engines (Demchuk et al., 2019).

Research Methodology:

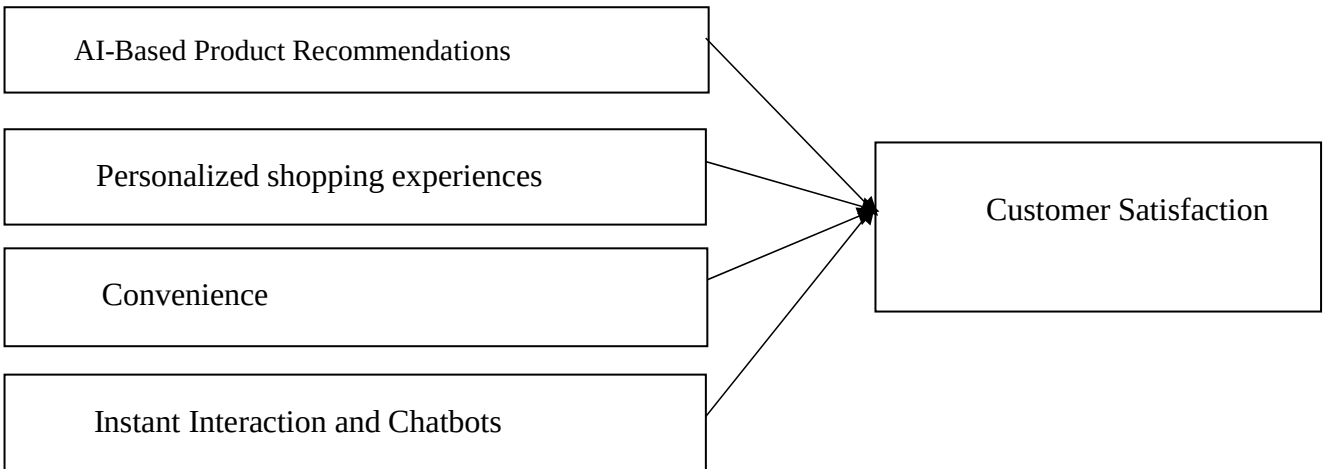
For investigating the Impact of Artificial Intelligence (AI) on online customer satisfaction, a mixed-methods approach will be utilized to gain comprehensive insights into the phenomenon.

A longitudinal design will be adopted to track changes in online customer satisfaction over time as AI technologies are implemented and refined. This design allows for the observation of trends and patterns in customer satisfaction as AI applications evolve. This methodology aims to provide solid results that can inform businesses and policymakers about the consequences of AI adoption for enhancing online customer satisfaction.

Research Design:

This study is based on the core information gathered from the consumers, who are the direct and end-users of the retail services. A Survey method has been used to collect the data. (Malhotra, 2007; Chawla & Sondhi, 2011). The characteristics of the research is quantitative. In this study the method of deduction is found to have greater acceptance than the inductive one due to its approximation to scientific research (Sardar & Sheikh, 2021; Daoud et al., 2020).

Conceptual Framework of the Study:



Hypothesis:

Ha1: AI Based Product Recommendations positively influence Customer Satisfaction.

Ha2: Personalized shopping experiences positively influence Customer Satisfaction.

Ha3: Convenience positively influences Customer Satisfaction.

Ha4: Instant Interaction and Chatbots positively influence Customer Satisfaction.

Data Collection Methods:

The types of data used in this study can be mainly classified into two:

1. Primary data
2. Secondary data

Primary data

This is the data, which is a collection by the researcher and is necessary for time. The tool used to collect this data is the questionnaire, here, for this project the research has collected other relevant information on Customers.

Secondary data

The data, which are already collected, are called secondary data. The Data may be available within the company. The data is collected from the company, book, internet, journal, etc.

Sample size: 334

Statistical Tools Used:

- Anova
- Correlation
- Chi-Square

Data Analysis:

In this chapter, the results of the statistical analysis of the questionnaire data are presented. The statistical operations were carried out utilizing IBM SPSS Statistics 23.0.

ANOVA						
		sum of squares	df	mean square	f	sig.
Ai based product	between groups	17.779	2	8.889	.715	.490
	within groups	4163.405	335	12.428		
	total	4181.183	337			
personalised shopping	between groups	31.591	2	15.795	.865	.422
	within groups	6132.622	336	18.252		
	total	6164.212	338			
Convenience	between groups	27.746	2	13.873	.721	.487
	within groups	6465.829	336	19.244		
	total	6493.575	338			
instant interaction	between groups	65.519	2	32.760	1.403	.247
	within groups	7822.200	335	23.350		
	total	7887.719	337			
customer satisfaction	between groups	72.535	2	36.268	1.504	.224
	within groups	8075.929	335	24.107		
	total	8148.464	337			

Inference:

As the p-value of all the factors of artificial intelligence in online customer satisfaction is greater than 0.05, we accept the null hypothesis

There is a significant between ages concerning the factor of artificial intelligence in online customer satisfaction

		age	Ai based product	personalised shopping	convenience	instant interaction	customer satisfaction
age	Pearson Correlation	1	-.047	-.055	-.065	-.087	-.094
	Sig. (2-tailed)		.389	.311	.231	.111	.085
	N	340	338	339	339	338	338
Ai based product	Pearson Correlation	-.047	1	.433**	.362**	.415**	.391**
	Sig. (2-tailed)	.389		.000	.000	.000	.000
	N	338	338	337	337	336	336
personalised shopping	Pearson Correlation	-.055	.433**	1	.488**	.485**	.521**
	Sig. (2-tailed)	.311	.000		.000	.000	.000
	N	339	337	339	338	337	337
convenience	Pearson Correlation	-.065	.362**	.488**	1	.555**	.474**
	Sig. (2-tailed)	.231	.000	.000		.000	.000
	N	339	337	338	339	338	338
instant interaction	Pearson Correlation	-.087	.415**	.485**	.555**	1	.576**
	Sig. (2-tailed)	.111	.000	.000	.000		.000
	N	338	336	337	338	338	338
customer satisfaction	Pearson Correlation	-.094	.391**	.521**	.474**	.576**	1
	Sig. (2-tailed)	.085	.000	.000	.000	.000	
	N	338	336	337	338	338	338

Hypothesis

Null hypothesis H0: There is no relationship between age and to factor of artificial intelligence in online customer satisfaction

Alternate hypothesis H1: There is a relationship between age and to factor of artificial intelligence in online customer satisfaction

Inference

Here p-value is greater than 0.05, accepting a Null hypothesis which means there is no relationship between age and factors. As there is a relationship, we should check for the type of correlation. As the signs are negative here, we conclude that there is a negative correlation between age and factors.

Chi-Square

:

Gender			
	Observed N	Expected N	Residual
Male	256	170.0	86.0
Female	84	170.0	-86.0
Total	340		

Test Statistics	
	Gender
Chi-Square	87.012 ^a
Df	1
Asymp. Sig.	.000

0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 170.0.

Limitation of the Study

- The research is restricted to the C2C segment of the e-commerce/online retail sector, and may not capture the dynamics of other segments like B2B and B2C.
- The longitudinal design means the study may span a significant period, which could limit the ability to capture the rapid pace of change in AI technologies and their applications in e-retailing.
- The research is focused on online customer satisfaction, and may not capture the broader societal and economic impacts of AI adoption in e-retailing.

Findings:

- **Improved Personalization:** Better customization: It's been discovered that the consumer experience is greatly improved by the application of AI-powered customization algorithms in e-commerce platforms. Artificial Intelligence (AI) was able to deliver highly personalized product recommendations, information, and offers that more closely matched individual customer tastes by evaluating customer data and browsing activity. Increased client happiness and loyalty resulted from this.
- **Enhanced Conversational Experiences:** The incorporation of chatbots and virtual assistants driven by machine learning and the use of natural language processing has led to customer service being more effective and smooth. Consumers expressed more satisfaction with the personalized character of the interactions in addition to the promptness and correctness of the responses to their questions.
- **Reduced Response Times:** Numerous standard customer care procedures, like order tracking, returns processing, and simple troubleshooting, might be automated by AI-driven systems. Customer satisfaction ratings increased due to the quicker response times and shorter wait times.
- **Improved Order Fulfillment:** AI algorithms were used to streamline the supply chain and logistics, which led to faster shipping, fewer delivery delays, and more precise order processing. The dependability and promptness of their internet orders were valued by the customers.
- **Predictive Analytics for Proactive Support:** Artificial Intelligence systems anticipated possible problems or requirements before they materialized by examining usage trends and client data. This made it possible for businesses to actively engage with clients, resolve issues, and provide solutions, therefore improving the clientele's entire experience.

Suggestion:

- To provide highly personalized content, experiences, and product suggestions, AI-powered algorithms can examine user data, browsing history, and preferences. This makes it easier for customers to find what they're looking for, which boosts customer happiness and loyalty. AI-driven chatbots can offer round-the-clock customer service, addressing frequently asked inquiries, resolving problems, and assisting clients with the purchasing process.
- When compared to traditional customer care, these chatbots can provide a more responsive and natural contact, enhancing the overall customer experience.
- To predict and proactively handle client demands, artificial intelligence (AI) can be employed to evaluate customer behaviour, purchasing patterns, and feedback. This could lead to less effort from the consumer, quicker issue resolution, and increased satisfaction. Through the study of text-based interactions, social media comments, and product reviews, AI-powered sentiment analysis can assist businesses in better understanding the feelings and impressions of their customers. This data can assist with strategic decision-making for overall consumer satisfaction additionally product and customer service improvements. By using AI to customize offers, interactions, and content based on user preferences and behaviour, you can personalize the customer experience.

II.CONCLUSION

The study's objective was to identify the variables that influence how AI is used in the e-retailing industry and how an AI-enabled retailer affects consumers' overall satisfaction with online shopping.

The results of the study indicated that customer satisfaction, AI-based product suggestions, customized shopping encounters, convenient instant interaction, and chatbots are the variables that most strongly indicate how an AI-enabled retailer affects consumers' overall satisfaction with online shopping.

AI's ability to improve online customer service and engagement could revolutionize how businesses communicate with and cater to their clientele. Companies could raise consumer satisfaction and loyalty, develop their business, and improve the overall customer experience by utilizing AI-driven initiatives. Maybe even more revolutionary things in the future and significant applications of AI technology as it develops, which will completely rewrite the rules when it comes to online customer pleasure.

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