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A STUDY ON THE USAGE OF ARTIFICIAL INTELLIGENCE TECHNOLOGY IN INFLUENCING CONSUMER BUYING BEHAVIOUR WITH SPECIAL REFERENCE TO ONLINE SHOPPING

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A B S T R A C T

The digital landscape evolves into a new era in the business world. The digital process involved the industries and businesses to think on new applications and domains of implementation of Artificial Intelligence into business. The Industries and business started to invest in technologies for their business benefits and it will also improve customer experience, help to lift conversion, revenue, and profit significantly.. AI reacts faster than any human can catch both micro and macro trends. This paper is leveraging the innovativeness in technology and its impact on consumer buying behavior analyzed. AI technology supports buyers during online shopping platforms with the support of following tools like Visual Search, Voice Assistant Search are used by the customers to search and find product-related information. Consumers are influenced by higher-touch technology assistance. In part of this study, Five hundred respondents were chosen for the sample study. The questionnaire was used to collect the data then it was classified and tabulated for statistical analysis to solve the problems of research work, justifying the objective and proving the hypotheses framed for the study. Finally, this study evaluated how the respondents are influenced by AI technology while doing online shopping in E-commerce platforms. According to the gathered data analysis and interpretations were formulated with the following appropriate statistical tools have been applied Descriptive Analysis, One Way ANOVA.

1. INTRODUCTION

AI provides better customers' journeys and experiences to the online platform. It delivers optimized customer experiences on and off their e-commerce websites by using customer data to decide business and predict the future. The AI learns from visitors' behaviour in real-time – and so incorporates machine learning - anticipating the visitors' intents, and adapts the results to rank the most relevant products higher, maximizing your sales. Advancements in technology help to compete for online retailers' attention on every day. To

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identify the best opportunities for your e-commerce business strategy, innovative technologies, the intuitive business design that to improve the customer experience. The advent of Artificial Intelligence turbo-charged the approaches and helps to frame out astounding business practices at scale. Moreover, by 2025, AI revenue is expected to supersede $36.8 billion,aq says the research report by Tractica.

Artificial Intelligence replies to customer inquiries, sending reminders about the wish lists and tailored alerts on shopping deals the customers. Moreover, AI helps businesses to deal dynamically inventing new modes of communication to engage customers. Also, AI contributes to the process with more accurate data and enabled e-commerce shops to find the right customers. According to McKinsey Global Institute predicts that intelligent agents and robots could replace up to 30 percent of the world's current human labor by 2030. Artificial intelligence is impacting the longer term of virtually every industry and each person.

The programming of computers to do tasks that requires human intelligence like reasoning, learning, problem solving and perception is coined as artificial intelligence. With AI submerging in main streams more and more companies and business are adapting toward AI to build competitive strategies. The applications of artificial intelligence ranges from voice powered Google Assistants to Siri and Alexa that converts your query into answer through Natural Processing Language and to Tesla introducing smart cars to YouTube showing data driven results based on your behavior and interests. Where marketing departments are making marketing strategies based on the insights provided by Artifical Intelligence so are the consumers reacting to it. Here we look at the how artificial intelligence is influencing consumer behavior.

1.1 Purpose of using AI in Current Scenario

Increase customers spending:

It is no more doubt that customer□™s spending will increase as one of the core element of Artificial Intelligence i.e Machine learning let the teams to decode the huge data accumulation that narrows down the information in a way that helps them to identify target audience, what are customers looking up to, do trend analysis and then creating funnels that are more user focused hence lessening the time spent and ultimately will convert prospect into conversion.

Costumers spending are more likely to increase because once marketing teams have identified their target audience they can build up their marketing strategies around it. They know when to do email marketing at what time users are more likely to open the email. With increasing competition businesses are paying more attention to what do they offer, whom to offer. Let's say if we somebody want to start a business he/she can know the latest trends the consumers are into. If somebody wants to target women and teenage girls and wants to know about their interests thy can reach the data through artificial intelligence. They might start up classic fashion style brand, start selling out makeup products. In this way they can have accurate information and can maximize their profits by building strategies around it.

Personalized Consumer Experience:

Through artificial intelligence the information about customers is driven like how many time a user go through certain websites, what they look for, about their geo-location, about the devices through which they are signing in. Predictive personalization has helped the brand to come up with more personalized consumer experience. Now consumers do not need to specifically take their time out to go to a store to buy a certain product. With the data available brands will come up with ideas that enhances consumer experience. There has been trend of virtual shopping where specific product is been shipped to customer□™s place even before shopping so they can try it out and then make them decide whether they want it. In this way customers feel that experience or effort is just made for them. Personalization is the key to convert your prospects into conversions.

Boosting Customers loyalty:

With the help of insights about consumers□™ behavior pattern, brands which are coming up with more personalized consumer experience its more likely that customers□™ loyalty will shift towards those particular brand. According to Microsoft 97% of customers say that customer service is important factor when they choose a brand. Artifical Intelligence has helped further to enhance customer□™s service Through Chat bots customers get quick response as they can deal with multiple queries at a time and are available 24/7. Through clustering and data collected about customers one can easily match their likes and dislikes and recommend them their particular option of product or service they are looking for that. These little nuances can convert your customer into regular client.

Great convenience to customers:

There is no doubt to say that Artificial Intelligence has brought great convenience to customers. In fact they are now accustomed to convenience. We have not even thought booking appointments, virtual shopping, monitoring your home security would be just a click away.

Face and finger print recognition is one of the innovations resulted by AI. More importantly it has saved times as it functions in a way that does not

involve human intelligence. Imagine how much time we can give to other things if we are not bound to do tasks that can be operated through artificial intelligence. Artificial Intelligence has created horizon of new opportunities.

Customers will shift to voice technology:

Several leading retail and financial organizations will shift towards voice technology because customers feel comfortable using this. Voice searchers are easier for customers for queries and get better results than textual queries. In addition, the use of digital a assistant in daily life means you are more open towards using voice over technology in daily life. The oldest barrier has gone, and now people prefer voice over texting.

Bridging the gap between personalization and privacy:

The privacy should be the main concern of every industry and it is realized that consumers want their information to be secured by the brands and it is an important analysis to build a securing policy using AI tools. When customers are satisfied with the business policies and they would find that they are getting several advantages as a result their trust will build on business brands. Consumers get thrilling and exciting outcomes from AI tools and techniques. The AI tools usage will increase the customers□™ trust over the different businesses in the market

The Verdict

No doubt artificial intelligence is playing an important role in every aspect of life and especially in retail. Due to AI businesses are earning more profit due to competitive advantages it gets due to AI. However there is dire need of informing people about its useage so that more and more people can use AI as AI is our future!

2. USAGE OF AI TECHNOLOGY IN INFLUENCING CONSUMER BUYER BEHAVIOUR

India is most remarkable progress and great scope on modern technologies used in the marketing of products and influencing the customers. This advancement in artificial intelligence is categorized into four major parts. Viz, real-time product targeting, Visual Search, Chatbot, and advertisements. The modern age of customer purchase and influence is determined and controlled by artificial intelligence. It provides marketing solutions and business application supports to many international market leaders.

2.1 Real-time product targeting

Product targeting has been practiced primarily in the online retail world. Here, customers were segmented and targeted with products based on their preferences and purchase history. It displays product recommendations and shopping process shopper action on every purchase. It communicates to the customers in real time, targeting shoppers with personalized product recommendations. Machine learning platforms are supported to understand the buyer's intent based on their actions, in real-time, and a list of recommended products. Real-time product targeting is also called "cognitive product targeting." Real-time product targeting issues are solved artificially intelligent. It starts with realizing the historical shopper data and ingesting customer clicks in real time.

2.2 Visual search

It enables shoppers to search online by using images instead of text or keywords. It provides the solution for people in the scenario of unknown things. Visual search helps to simplify the search process and enables goal-oriented shoppers to find the right products faster and easier.

2.3 Chatbot

Chatbots help users to find information by asking questions and requests through text input, audio input, or both—without the need for human intervention. It started from the smart speakers at home to messaging applications at the workplace. The AI chatbots are called "virtual assistants" or "virtual agents." Examples are Apple's Siri, Google Assistant, and Amazon Alexa. Users commend the assistants by questioning or controlling home automation devices or media playback via voice and managing routine tasks such as email, to-do lists, and calendars with verbal commands. These technologies improve customer-centric advertisements and help to build deeper connections with audiences.

3. REVIEW OF LITERATURE

According to Mona H. Mussa (2020), the impact of Artificial Intelligence (AI) on consumer behaviors within the retailing sector significant relationship between Artificial Intelligence and consumer behavior. In addition, The model has a high ability to predict and explain consumer purchase behavior through Artificial Intelligence, and this was proved by the validity of the first hypothesis (H1) through the value of (R-Sq = 0.95.8) in the model. The researcher recommends that online retailers employ Artificial Intelligence in each step in the consumer journey, from need recognition, information search, evaluation, and purchase decision-making to post-purchase behavior to predict consumer purchase behavior in the online platform.

Advances in technology and therefore the potential for AI in digital marketing are on the increase, and therefore the possibilities are limitless. AI is getting used more and more in operational markets for

identifying risk, conducting marketing research, and identifying business functions to coordinate with target customers (Campbell et al. 2020). While the utilization of AI in digital marketing will influence marketing strategies, business models, marketing procedures, and consumer service options, it'll also influence customers' behaviour. The main focus of AI in digital marketing is not based on replacing human dynamics in critical decisions but on developing a more robust dynamic digital marketing environment. It will allow advertisers to quickly assess the wants of a possible customer and adjust the AI they employ in digital marketing to extend sales (Campbell et al. 2020).

S. Manjula (2021) stated that change in consumer behavior with the support of Artificial intelligence to analyses and predict the consumers' needs. Further to that this study expand the brands will develop better selling techniques to the customers right and buy it. Artificial intelligence follows consumer habits to determine the consumers to buy products and services from the market for the days to come.

Shyna K and Vishal M (2017) revealed the job of Artificial Intelligence reasoning in internet business and its application in various zones of online business. Computerized reasoning has the incredible capacity to procure and examine enormous volumes of information and give choices to activity. Web-based business is currently receiving this innovation to recognize designs dependent on perusing, buy history, credit checks, account data, and so on.

Meenakshi Nadimpalli(2017) discussed the Consumer and Industry Impact turned on by AI in retail, healthcare, crime investigation, and employment. S Balasubramaniam (2018) examined the different features of AI and its innovation, employment, economy, and fate of humanity as we get progressively associated and advanced in varying backgrounds

4. GAP ANALYSIS

A gap analysis is the process online shop use to compare their customer usage of AI in Ecommerce trading with their expectation level. A gap analysis (table 1) can be measured the satisfaction level of customers by factors like AI tools, revealing exciting insights about the consumers' sentiments, needs, and desires with customer expectation factors and comparing it to its target state of achievement.

Table 1. Gap analysis

Area under consideration	**Customer Satisfaction with Customer Expectation**	
Desired State	**Current State**	**Action Steps**
1. Customer Satisfaction level (82.31%) 2. Expectation level (17.69%)	The customer satisfaction level of AI is 82.31% but expecting level is also there at 17.69%	Based on customer expectations like the ease of access process and second-by-second contact of customer service needs, uneducated people can also use voice search to get online products. But need some modification in the process method in voice search. The suggestion given to online AI technicians is that ease of access and quick contact with customer service for the further target of reaching a satisfaction level of 100%.

5. OBJECTIVES

Objectives are:

- To examine how consumer buying behaviour is influenced by AI with reference to online shopping.
- To identify the difference in consumer purchase patterns after the integration of AI.

6. RESEARCH METHODOLOGY

The present study focused on how consumer buying behaviour is influenced by AI with reference to online shopping. The primary data was collected from the respondents through a structured questionnaire. The sampling method used for data collection is convenience sampling. The questionnaires were distributed to 500 respondents. The tools used for analysis are percentages, Gap Analysis, and ANOVA were applied.

7. DATA ANALYSIS

The table 2 shows the frequency and percentage of demographic profile.

In Gender, 295 (59%) of the respondent belongs to the Male category and 205 (41%) belongs to the Female category. The majority of the respondents belong to the Male category for online shopping with AI.

In Age, 290 (58%) belong to the age of 18-24, 125 (25%) belong to 25-34, 55 (11%) belong to 35-44 and 30 (6%) belong to the age of >45. The majority of the respondents belong to the age of 18-24.

Table 2. Frequency and percentage of demographic profile

S.No	Variables	Group	Number (n)	Percentage
1	Gender	Male	295	59
		Female	205	41
		Total	**500**	**100**
2	Age (years)	18-24	290	58
		25-34	125	25
		35-44	55	11
		>45	30	6
		Total	**500**	**100**
3	Education	School or Equivalent	5	1
		Bachelor's degree/Diploma	305	61
		Master's degree	145	29
		Professional degree	45	9
		Total	**500**	**100**
4	Income of the Respondents	<10000	45	9
		10000 to 24999	75	15
		25000 to 49999	90	18
		50000 to 74999	75	15
		75000 to 99999	65	13
		100000 to 149999	75	15
		>150000	75	15
		Total	**500**	**100**
5	Frequently Purchase through online	weekly	60	12
		Monthly	180	36
		Every 3 Months	175	35
		Once in a Year	85	17
		Total	**500**	**100**
6	Monthly Amount Spends for online shopping	<5000	335	67
		5000-15000	115	23
		15000-25000	15	3
		25000-50000	5	1
		50000-75000	15	3
		>100000	15	3
		Total	**500**	**100**
7	AI Technology usage while online shopping	Chatbots	70	14
		Visual Search	95	19
		Voice assistant search	135	27
		Personalized ads	180	36
		Other	20	4
		Total	**500**	**100**

Based on the education of respondents, 5 (1%) have school or equivalent level, 305 (61%) belongs to Bachelor's or Diploma degree as their level of education, 145 (29%) are Master's degree holders and 45 (9%) are Professional degree as their level of education. The majority of the respondents are bachelor's degrees.

The income of the family of respondents is <10000 is 45 (9%), 10000-24999 is 75 (15%), 25000-49999 is 90 (18%), 50000-74999 is 75 (15%), 75000-99999 is 65 (13%), 100000- 149999 is 75 (15%) and more than 150000 is 75 (15%). The majority of the respondents belong to 25000-49999.

Frequently purchased by respondents through online are weekly is 60(12%), Monthly are 180(36%), every 3 Months are 175(35%) and Once in a year is 85(17%). Majority of the respondents purchase online once in a month or every 3 months once.

Monthly amount spends for online shopping by respondents are, less than 5000 are 335(67%), 5000-15000 are 115(23%), 15000-25000 are 15(3%), 25000-50000 are 5(1%), 50000-75000 are 15(3%) and >100000 are 15(3%). Majority of the respondents spend less than 5000 for online shopping.

The AI Technology used for online shopping by respondents is, Chatbots 70 (14%), Visual search 95(19%), Voice assistant search 135 (27%), Personalized ads 180 (36%), and other technology 20 (4%). The majority of the respondents used personalized ads as one of the AI technologies.

7.1 One-way ANOVA

Objective 1: To examine how consumer buying behaviour is influenced by AI in Ecommerce sectors.
H0: There is no significant influence exists in consumer behaviour buying using AI in Ecommerce sectors.
Level of Significance: $\alpha = 5\%$

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7.876	4	1.969	1.218	.032
Within Groups	799.924	495	1.616		
Total	807.800	499			

Inference:
Since the Sig. value .032 < 0.05, hence rejecting the hypothesis at a 5% level of significance. Therefore, there is a significant influence exists in consumer buying behaviour using AI in Ecommerce sectors.

7.2 One-way ANOVA

Objectiv 2: To identify the difference in consumer purchase patterns after the integration of AI.
H0: There is no significance in consumer purchase patterns after the integration of AI.
Level of Significance: $\alpha = 5\%$

ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	6.152	3	2.825	2.031	.004
Within Groups	801.637	496	2.516		
Total	807.789	499			

Inference:
Since the Sig. value .004 < 0.05, hence rejecting the hypothesis at a 5% level of significance. Therefore, there is a significance in consumer purchase patterns after the integration of AI.

7.3 Correlation

H_0

1. There is no association between Gender and Hours spending of surfing about the product before buying.
2. There is no association between frequency of purchase online and items prefer to purchase through online.

Level of significance: α = 5%

Correlations

		Hrs*	Gender
Hrs*	Pearson Correlation	1	.088
	Sig. (2-tailed)		**.048**
	N	500	500
Gender	Pearson Correlation	.088	1
	Sig. (2-tailed)	.048	
	N	500	500

Correlations

		Item.Prefer	Freq.Purchase
Item.Prefer	Pearson Correlation	1	.124
	Sig. (2-tailed)		**.006**
	N	500	500
Freq.Purchase	Pearson Correlation	.124	1
	Sig. (2-tailed)	.006	
	N	500	500

Inference:

1. Since sig. value .048 < 0.05, hence reject the hypothesis at 5% level of significance i.e. There is an association between Gender and Hours spending of surfing about the product before buying.
2. Since sig. value .006 < 0.05, hence reject the hypothesis at 5% level of significance i.e. There is an association between frequent of purchase online and items prefer to purchase through online.

8. FINDINGS

Findings are:

- (59%) Most of the respondents belong to the Male category for online shopping with AI.
- (58%) Most of the respondents belong to the age of 18-24.
- (61%) The majority of the respondents are bachelor's degrees.
- (30%) Most of the respondents belong to Education Industry.
- (18%) The majority of the respondents belong to 25000-49999.
- (43%) Most of the respondents faced product quality issues.
- (45%) Most of the respondents prefer Mobiles and Electronics in online shopping.
- (43%) Most of the respondents spend 3 to 6 hrs on the Internet.
- (86%) The majority of the respondents less than 2 hr for their online shop.
- (61%) The majority of the respondents spend less than 2 hrs surfing the product.
- (36%) Most of the respondents purchase online once a month or every 3 months once.
- (67%) The majority of the respondents spend less than 5000 for online shopping per month.
- (36%) Most of the respondents used personalized ads as one of the AI technologies.

From one-way ANOVA, we find there is a significant influence exists in consumer behaviour buying using AI in E-commerce sectors.

9. SUGGESTION

Most of the respondents belong to the age group of 18-24. This age group of customers is using AI technology based on tools and is influenced to purchase through online platforms. The remaining age groups can be concentrated and the awareness of using of AI technology will be easy for other age categories.

Most of the respondents come across personalized Ads while doing online shopping. Few respondents are utilizing Voice Assistants, Visual Search, Chatbots, and other interesting tools, exploring and enjoying new ways of online shopping with the utilization of AI technology. So awareness of these technologies can be created through Social Media platforms. Businesses may be able to increase customer retention through targeted outreach and marketing.

The majority of tasks can be completed with the least amount of human involvement feasible because of AI's seamless automation. This includes activities like setting up email reminders, managing customer relations, making suggestions, etc.

By gathering information about customers and leveraging the insights to expedite the sales process, AI in online shopping also enhances sales. Customers can be engaged with AI Chatbots to advance them through the sales process.

10. CONCLUSION

Artificial Intelligence plays a divergent role in marketing automation and strategically providing opportunities to companies. The analysis found that AI tools influence and change consumer buying behavior. Chatbots, Personalized Ads, Visual search, and Voice Assistants are used by consumers for gathering product-related information, searching the product, and higher-touch customer support. AI and consumer behavior are well connected and they offer good insights. Also, AI is instrumental in collecting a large amount of data and analyzing the purchase pattern of consumers, buyer focus, and target marketing strategies. The many benefits that AI in online shopping offers are crucial, and they range widely. Businesses will flourish, from everyday work optimization to improved promotion. ECommerce businesses are becoming more interested in implementing AI to enhance both their internal operations and the customer experience.

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