

ROLE OF ARTIFICIAL INTELLIGENCE IN ONLINE SHOPPING AND IT'S IMPACT ON CONSUMER PURCHASING BEHAVIOUR

G.JERCY, and T.Priyanka

Department of Commerce, St. Mary's College (Autonomous), Thoothukudi

Affiliated to Manonmaniam Sundaranar University, Thirunelveli, Tamil Nadu, India

ABSTRACT:

Role of artificial intelligence in online shopping and it's impact on consumer purchasing behaviour is the topic taken research. Objectives of the study are to assess the influence of AI technologies on consumer purchasing decisions in online Shopping to analyze the role of AI in enhancing the overall shopping experience for consumer to measure consumer perceptions of AI applications in online shopping. to examine changes in consumer behaviour patterns due to AI integration in online retail and to identify barriers to the adoption of AI in online shopping. primary and secondary data was used in this study to collect the data.. The convenience sampling technique is adopted to select 120 respondentsWho are used The impact of artificial intelligence on impulse buying behaviour of customers in online shopping is significant. Through personalized recommendations, targeted advertising, and real-time feedback.

KEYWORDS:

Artificial intelligence, consumer behaviour,online shopping,consumer preference and needs, technology.

INTRODUCTION:

The advent of Artificial Intelligence (AI) has revolutionized the online shopping landscape, transforming the way consumers interact with e-commerce platforms and enabling online retailers to provide personalized and seamless shopping experiences that drive customer engagement, loyalty, and retention. With theincreasing use of digital technologies, online shopping has become an integral part of modern retailing, accounting for a significant percentage of totalretail sales globally. As online shopping continues to grow in popularity, retailers are seeking innovative ways to enhance the shopping experience, increase customer satisfaction, and drive sales, and AIpowered technologies have emerged as a key driver of innovation in online retailing. By leveraging AI-powered chatbots, recommendation systems,

and predictive analytics, online retailers can offer tailored product suggestions, proactive customer support, and optimized marketing campaigns that cater to individual consumer preferences, behaviors, and needs.

REVIEW OF LITERATURE:

Dang(2019) in his research paper "The influence of Artificial Intelligence, Augmented Reality and Virtual Reality on Shopping Experiences of the Indian Buyers" explore the effect and implications of (AI) artificial intelligence, (AR) Augmented Reality and (VR) Virtual Reality on the shopping experience of the Indian consumers and to know whether AI is changing their shopping behaviour. Though AI (Artificial Intelligence) is not new terminology for the internet savvy people but it is totally new for the general consumer who purchase a variety of goods and services through online platforms with the assistance of artificial Intelligence technology. This paper will explore the new facts and new knowledge about the relationship between AI (Artificial Intelligence) and Shopping experience

Anli Suresh(2020) in his study "Consumer perception towards artificial intelligence in E-commerce with reference to Chennai city, India" stated that, in the modern era, people are much closer to technology and peoples mind are expecting new and innovative things which make their works easier and save time. Artificial Intelligence (AI) is one among those technologies which helps almost in all areas of individual's routine life. AI is the simulation of human intelligence process by machines, especially computer systems. The main aim of the study is to identify the consumer preferences towards the applications of AI in different areas of e-commerce. The concluding observations are that there is no relationship between usage and recompenses factors while there is significant relationship between the techniques factors. The most influencing areas of AI in e-commerce are real time product targeting, voice powered search and virtual personal shoppers.

Khrais(2020) in his study "Role of artificial intelligence in shaping consumer demand in E-commerce" stated that, the advent and incorporation of technology in businesses have reformed operations across industries. Notably, major technical shifts in e-commerce aim to influence customer behaviour in favor of some products and brands. Artificial intelligence (AI) comes onboard as an essential innovative tool for personalization and customizing products to meet specific demands. This research finds that, despite the contribution of AI systems in e-commerce, its ethical soundness is a contentious issue, especially regarding the

concept of explainability. Explainable Artificial Intelligence (XAI) is a machine learning field that inspects and tries to understand the models and steps involved in how the black box decisions of AI systems are made it provides insights into the decision points, variables, and data used to make a recommendation. This study suggested that, to deploy explainable XAI systems, ML. models should be improved, making them interpretable and comprehensible.

Saikat Gochhait(2020) in his research "Role of artificial intelligence (AI) in understanding the behaviour pattern: a study on e-commerce" explains that, the customer satisfaction is one of the pillars of strength for any successful retailer, hence the infiltration of AI it becomes easier in understanding and predicting consumer behaviour patterns and trends in E-commerce as with the use on Analytics only, it failed to demonstrate the behavioural patterns precisely due to the humungous quantity and variance of data paving the path for AI to enter the scenario as coupling with Analytics it can unleash its values to simplify. Purpose of the Research is to study the role of AI in understanding the behaviour pattern of E-commerce Customers. To understand how Artificial Intelligence can add value to increase the sales of an E-commerce Company - Creating more personalized marketing across multiple devices is by using artificial intelligence to eliminate redundancies and automate processes and enable trade in conversations.

Fazla Rabby (2021) in his study "Artificial intelligence in digital marketing influences consumer behaviour: a review and theoretical foundation for future research" stated that, tracking the customer journey has become more challenging because of the changing marketing environment. The market is getting bigger and better, with digital markets offering customers countless new options for shopping. Customers share their desires, attitudes, and beliefs through many avenues and mediums, as the need for exceptional customer experience grows across all digital platforms. Artificial intelligence (AI) is the answer to enhancing the digital experience while delivering personalized content. This seemingly endless source of customer-curated data is expanding. Many marketers turn to AI to extract the information and use it. AI empowers businesses to collect and act on detailed real-time customer insights, and through these insights. they can develop customized digital marketing experiences. This literature review looks at AI-based digital marketing applications that can enhance the online customer experience using the customer decision journey. It looks closely at how AI integrated digital marketing influences consumer buying behaviour.

STATEMENT OF PROBLEM:

Artificial intelligence (AI) has been rapidly developing, and its integration in online shopping platforms has completely changed how customers interact with e-commerce websites. However, as artificial intelligence (AI) algorithms become more accurate in predicting and influencing consumer behavior, there is increasing uncertainty about their impact on impulse buying. The concept of impulse buying, characterized by sudden, unplanned purchases driven by emotions and immediate desires, has long been a significant factor in consumer behaviour. With AI technologies such as personalized product recommendations, targeted advertising, and dynamic pricing strategies, there is a need to understand how these tools influence consumers impulse buying behaviour in online shopping environments.

OBJECTIVES:

1. To assess the influence of AI technologies on consumer purchasing decisions in online shopping.
2. To analyze the role of AI in enhancing the overall shopping experience for consumers.
3. To measure consumer perceptions of AI applications in online shopping.
4. To examine changes in consumer behaviour patterns due to AI integration in online retail.
5. To identify barriers to the adoption of AI in online shopping.

RESEARCH METHODOLOGY:

Sampling design	Convenience sampling design
Period of the study	November 2024 to March 2025
Data based	Primary data
Test for Analysis	Percentage Analysis, Descriptive Statistics, chi-square test, likert's scale

LIMITATION OF STUDY:

Though best efforts were taken to minimize the limitations, still the study is not free from limitations. Therefore, limitations are

1. The study covers only the city of Thoothukudi. So the results may not applied to other areas.
2. The whole population of respondents could not be approachable.
3. While collecting primary data biasness of respondents in answering the questions was a

barrier.

4. Reliability and accuracy of the study depends on the respondents' openness and truthiness.

RESULTS AND DISCUSSIONS:

Option	Mean	Std. Deviation
Age	1.6250	1.06954
Gender	1.6500	.47897
Marital status	1.6583	.47626
Educational Level	2.6583	.60106
Occupation	2.1667	1.12521
Monthly income	1.6833	.97000
Location	2.1333	.91609
Average Monthly Online Shopping	1.4333	.69492
How often do you shop online	1.9333	.95031
What types of products do you primarily purchase online	2.7333	1.50480
Do you compare prices on multiple websites before purchasing	1.7917	.95174
Are you aware that online platforms use AI to personalize your shopping experience	1.3417	.47626
Which of the following is a common use of AI in online shopping	1.9000	.92036
Have you ever felt that AI usage reduced risk like fraudulent and manipulation	1.3917	.49017

How does AI prevent fraud in online shopping	2.2500	109429
What is the main purpose of AI chatbots in e-commerce	2.0667	.95911
Which payment do you prefer for online shopping	1.9000	.84416
What is the biggest challenge you face with shopping online	1.8417	.74468
How does AI reduce card abandonment in online shopping	2.2333	1.12820
How does AI improve customer service in e-commerce	1.9750	.91176
AI use the personal data appropriately	1.3917	.49017
Offers and discount encourage you to shop on online shopping	2.1500	1.05041
How do you think AI is used in online shopping	2.3083	1.18673
AI driven features make my online shopping experience quicker and most efficient	1.3250	.47034
Have you interacted with AI based virtual assistant while shopping	2.1833	1.08452
AI products discovery suggestions are more useful than advertisement	1.2833	.45251
How effective do you think AI in helping to find desirable products	1.3167	.46713
Find it easier to compare through AI driven platform	1.3167	.46713

Which AI powered tool help to detecting fake reviews and misleading product rating	1.8167	.75574
AI tools expose me to a wider range of products making online shopping more interesting	1.2667	.44407
How 4 do you notice advertisement powered by AI while shopping online	2.0667	.95911
Do you feel while safe sharing personal data with AI	1.8000	.77351
What AI features help in real time order tracking	1.2917	.45644

Chi square test:

1.Comparison between age and AI use the personal data appropriately

Null Hypothesis (H0):

There is no significant association between age group and perception of AI using personal data appropriately.

Alternative Hypothesis (H1):

There is a significant association between age group and perception of AI using personal data appropriately.

Observed value

Age	Yes	No	Total
18-35	50	37	87
36-40	3	0	3
41-50	12	6	18
Above 50	8	4	12
Total	73	47	120

Expected value

Age	Yes	No	Total
18-35	52.5	34.1	87.0
36-40	1.8	1.2	3.0
41-50	11.0	7.1	18.0
Above50	7.3	4.7	12.0
Total	73.0	47.0	120

Chi-Square Tests

	Value	Df	Asymptotic Significance (2- sided)
Pearson Chi-Square	2.773 ^a	3	.428

Inference:

The table value for 3 degree of freedom at 5% level of significant is 3.841. It is found that the calculated value i.e., 2.773 is greater than the table value. Therefore , the Null Hypothesis (Ho) is rejected. Hence it is concluded that there is a significant relationship between age group and perception of AI using personal data appropriately.

2.Comparison between age and AI driven features make their online shopping experience quicker and most efficient

Null Hypothesis(Ho):

There is no significant association between age groups and the easier to compare through AI driven platforms.

Alternative Hypothesis (H1):

There is a significant association between age group and easier compare through AI driven platforms.

Observed value

Age	Yes	No	Total
18-35	58	29	87
36-40	2	1	3
41-50	11	7	18
Above 50	11	1	12
Total	82	38	120

Expected value

Age	Yes	No	Total
18-35	59.5	27.6	87
36-40	2.1	1	3
41-50	12.3	5.7	18
Above 50	8.2	3.8	12
Total	82	38	120

Chi- square test

	Value	Df	Asymptotic Significance (2-sided)
Pearson Chi-Square	3.569 ^a	3	.312

Inference:

The table value for 3 degree of freedom at 5% level of significant is 3.841. It is found that the calculated value i.e., 3.569 is greater than the table value. Therefore , the Null Hypothesis

(Ho) is rejected. Hence it is concluded that there is a significant relationship between age group and perception of AI using personal data appropriately.

Likert's scale:

Statement	Strongly agree	Agree	neutral	disagree	Strongly disagree	Total
1.AI changes the consumer buying behaviour	51	47	11	7	4	494
2. AI influence on my purchasing behaviour	25	63	20	8	4	457
3.AI makes my choice easier	37	40	28	10	5	454
4. AI impacts on identifying a right product	23	48	32	13	4	433
5. It helps to compare products from variable E-commerce platforms	29	48	18	13	12	429
AI makes the shopping experience more personalized	25	48	34	10	3	442
7.personalized recommendations from AI increase likelihood of purchasing products	39	45	19	12	5	461
8.chatbots for customer service when shopping online is effective	30	42	31	11	6	439

9. AI-based product reviews and ratings about product helps in buying behaviour	31	50	21	14	4	450
10.Is it comfortable with AI tracking your browsing and shopping behaviour to offer personalized recommendations	33	43	31	7	4	451
Total						4510

Particulars	Average	Rank
1.AI changes the consumer buying behaviour	4.15	I
2. AI influence on my purchasing behaviour	3.81	III
3.AI makes my choice easier	3.78	IV
4. AI impacts on identifying a right product	3.61	IX
5. It helps to compare products from variable E-commerce platforms	3.58	X
6. AI makes the shopping experience more personalized	3.68	VIII
7.personalized recommendations from AI increase likelihood of purchasing products	3.84	II
8.chatbots for customer service when shopping online is effective	3.66	VII
9. AI-based product reviews and ratings about product helps in buying behaviour	3.75	VI
10.Is it comfortable with AI tracking your browsing and shopping behaviour to offer personalized recommendations	3.76	V

FINDINGS FOR THE TABLE:

- Factors such as awareness of AI-driven personalization AI's role in reducing fraud (1.3917), and the common use of AI in online shopping (1.9000) highlight a moderate impact of AI on consumer behavior. Similarly, the preference for online payment methods (1.9000) and consumers' tendency to compare prices before purchasing (1.7917) reinforce this observation ,AI's role in reducing card abandonment (2.2333), the effectiveness of AI in improving customer service (1.9750), AI-driven advertisements (2.0667), and AI's ability to detect fake reviews (1.8167), indicate a moderate impact on consumer behavior. Similarly, perceptions of AI's handling of personal data (1.3917) and safety concerns regarding personal data sharing (1.8000) also reflect a medium correlation.
- The type of products purchased online (2.7333) is the only factor that shows a strong correlation, indicating that AI may play a significant role in shaping product preferences and influencing consumer choices, The belief in AI's overall role in online shopping (2.3083) stands out as the only factor with a strong correlation, suggesting that consumers widely recognize AI as an essential component in their shopping experience.
- The consumer agreed that AI changes their buying behaviour .
- The consumer neither agreed nor disagreed the following statementsAI influence on consumer purchasing behaviour , AI makes consumer choice easier ,AI impacts on identifying a right product , It helps to compare products from variable E-commerce platforms, AI makes the shopping experience more personalized ,personalized recommendations from AI increase likelihood of purchasing products ,chatbots for customer service when shopping online is effective , AI-based product reviews and ratings about product helps in buying behaviour and consumer feel comfortable with AI tracking their browsing and shopping behaviour to offer personalized recommendations.
- There is a significant relationship between age group and perception of AI using personal data appropriately.
- There is a significant relationship between age group and perception of AI using personal data appropriately.

SUGGESTIONS:

- The researcher has put forth the following suggestions based on the results of the study Educate customers about how AI systems analyze their browsing behaviour and preferences to personalize product recommendations, potentially influencing impact of buying decisions.
- The companies can adopt AI tools to increase the sales and satisfy the customers to the maximum.

CONCLUSION:

The convenience and accessibility of online shopping platforms powered by AI have made it easier for consumers to make impulsive purchases without much thought or consideration. The seamless user experience provided by these platforms play a significant role in encouraging impulse buying behaviour among customers. The continuous advancements in AI technology will only further enhance its impact on impulse buying behaviour in the future. As AI algorithms become more sophisticated and capable of understanding and predicting consumer preferences and behaviours, the influence they exert on customers' purchasing decisions will only grow stronger.

The main aim of research is to study the Knowledge, attitude and behaviour of the customers towards impact of AI systems in online shopping. It is revealed that people are aware of AI influence in online shopping. Majority of the people have prefer the AI powered product recommendations in their shopping experience, so it is elucidated that many people have adapted to the AI in their online shopping process

Most of the people opined that use of AI has increased their overall satisfaction level in online shopping. People think that AI product recommendations are better than traditional advertising methods. The major problems which people face are privacy or security concern on using AI in online shopping platforms which can be overcome by fraud detection systems or developing software to ensure secure transactions and build trust with customers. Overall, it is concluded that despite having various issues people are adopting AI in their shopping experiences which leads to impulse buying behaviour.

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