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A Study on Factors Influencing Consumer Preference for AI-Powered Online Purchasing

1*Aswathy Reghunath,2Dr. B. Rathnapriya**

1*Research Scholar,

Karpagam Academy of Higher Education Coimbatore.

2**Assistant Professor, Research Supervisor Karpagam Academy of Higher Education Coimbatore.

ABSTRACT

The online shopping landscape has changed drastically in this modern electronic commerce world, mainly due to increased growth of intelligent technologies such as artificial intelligence. Nowadays, many online platforms use AI tools such as product recommendations, chatbots, virtual assistants, and smart search options to make the shopping experience much smoother and easier. This study focuses on the factors influencing consumers to prefer AI-powered online buying. The research investigates important factors like convenience, personalized suggestions, trust in technology, ease of use, and about privacy concerns. Based on the responses collected from consumers, the study found that people are more likely to choose AI-powered platforms when they feel the process is simple, fast, and tailored to their needs .The sample was collected from 450 respondents from which the factor loading for the first component of factor analysis includes avoidance of complications, secured e-payment transaction ,enjoyment, trust ,ease of search and perceived ease of use However, some consumers still worry about data safety and accuracy of AI suggestions. Overall, the study highlights that improving transparency, protecting user data, and offering more reliable AI features can encourage more consumers to prefer AI-supported online shopping. This research provides useful insights for businesses that want to enhance their digital shopping services.

Keywords: Artificial Intelligence, Online Buying, Consumer Preference, trust, ease of search,convenience.

INTRODUCTION

The world of online shopping is changing faster than ever, mainly because e-commerce is growing quickly and Artificial Intelligence (AI) is becoming a major part of how people buy products online. Today, online purchasing is no longer just about scrolling through digital platforms. With the help of AI, it has evolved into a smart, customized, and highly interactive experience. AI tools now support many important parts of online retail, such as showing personalized product suggestions, predicting what customers might want next, answering questions through chatbots, and even allowing visual search. What makes AI so powerful is its ability to study huge amounts of data from browsing behavior and past purchases to personal preferences and real-time actions. By understanding these patterns, AI can predict what customers want with great accuracy. This helps shoppers find what they need faster, reduces the effort of searching, and often leads to a more satisfying online shopping experience. However, these benefits can only be realized if consumers are comfortable using AI and are willing to accept it.

Therefore, it is important to understand what influences a consumer's preference for AI-powered online purchasing. People balance the advantages such as convenience and personalized recommendations against concerns they may have. One major factor is trust: consumers need to believe that AI is giving fair, accurate, and unbiased suggestions. Privacy is another major concern, as AI tools work only when users share personal information. How clearly AI systems explain their recommendations they make also affects how comfortable users feel. Additionally, individual differences, like how open a person is to new technology or how they view digital risks, play a role in shaping attitudes toward AI.

This study aims to explore these factors in detail and provide meaningful insights that can help online retailers and AI developers. By understanding what consumers expect and what worries them, businesses can design AI tools that are not only efficient but also ethical, transparent, and aligned with user values. This will help build a trustworthy and sustainable future for AI-driven online shopping.

2. REVIEW OF LITERATURE

Jiwang Yin, along with Xiaodong Qiu (2020) underlined that the enlightening and interactive experience of intelligent technology such as artificial intelligence in online shopping platforms has become crucial nowadays which enhances the flow experience among customers which leads to a direct purchase intention. Jiwang argues that an efficient service experience created by AI can directly translate into a willingness to buy. Parallelly, Wael Sh. Basri and Abdullah Almutairi (2023) found the significance of trust in artificial intelligence acting as an intermediary among customers to choose artificial intelligence embedded online activities. Their research found that an individual's financial self-efficacy—the belief in one's ability to manage financial matters—is linked to the successful implementation of AI in crucial functions, such as fraud detection and transaction monitoring, through the mediating factor of user trust. Also, the study establishes AI's dual impact on enhancing user engagement and direct purchase behavior in retail.

Rabby, Chimhundu, & Hassan (2021) The review concluded that in modern era artificial intelligence is an essential factor which transform the primary customer experience. The core finding is AI enable retailers can achieve the exceptional customer experience by leveraging real-time customer data to provide personalized content and insights that customize the entire customer decision journey. This customization and optimization are viewed as a crucial benefit that allows AI-powered retailers to significantly outperform traditional businesses.

Conversely, Sanju Maharjan (2024), focusing on online buying platforms, highlighted that AI plays a positive role by enhancing the shopping experience and boosting customer engagement through highly effective personalized recommendations that simplify the decision-making process. This positive impact on purchase intention is, importantly, moderated by the consumer's trust and confidence in the online platform, indicating that while AI can streamline the process and increase short-term engagement and purchases, its ultimate success remains reliant on the foundation of user trust.

Renato Lopes da Costa et al (2022) propounded that the artificial intelligence serves as an efficient tool for enhancing online purchase experience of customers in e-commerce. Chatbots ,Recommendation Agents ,Virtual Try-On Systems (VTOs) were the tools mainly analysed in this study which resulted in the positive customer purchase intention, improved digital interaction between customers and brand leading to purchase intention. Dixit, R. S., Choudhary, S. L., & Govil, N. (2025) revealed the importance of trust in AI systems emerging as an important factor which positively affecting consumer's purchase intention while making artificial intelligence embedded online buying.The pleasure and enjoyment also acts as a major factor significantly influencing the intention to use. The habitual use of AI in daily life and shopping routines positively affects the adoption of AI for online purchase. The consumer's willingness to adopt new technology is a strong predictor of their acceptance of AI in online shopping.

The major findings from Aggarwal, Sharma, & Saxena emphasize the positive and transformative impact of Artificial Intelligence (AI) on the consumer online shopping experience. Here, the AI significantly enhances the e-commerce journey through increased personalisation, which averages consumer data to offer highly tailored product recommendations, leading to a more convenient experience and higher purchase likelihood. Also ,artificial intelligence increases customer support through chatbots and virtual assistants that provide instant, accurate assistance, boosting customer satisfaction while optimizing human labour.

2.1 RESEARCH GAP

The main gap evident in this review is the lack of detailed impact of trust and its long-term effects on the customers purchase intention. This study includes the key factors influencing customer awareness and to make purchase using artificial intelligence embedded online shopping. While, all studies converge on AI's positive link to personalization, flow, and purchase intention—often mediated or moderated by general user trust—they fail to dissect algorithmic trust and various individual factors affecting online purchase intention among general online users. Moreover, the literature is predominantly focused on immediate purchase intention and convenience, neglecting crucial long-term behavioral aspects like how consumers react to AI errors, the long-term impact of AI on customer loyalty beyond initial purchase.

2.2 STATEMENT OF THE PROBLEM

Artificial Intelligence (AI) has become an inevitable part of today's online shopping experience, serving features such as tailored product suggestions, automated instant customer support to queries, and smarter search options. These tools were mainly designed to make shopping easier, faster, and more relevant to meet individual needs. However, with these advantages, not all consumers feel comfortable relying on AI. Some users enjoy the convenience and personalization provided by AI-powered platforms, while others remain unsure about how their data is being used, whether the suggestions are truly accurate, and if the technology can be trusted. As a result, there is a noticeable gap between the capabilities of AI and the level of comfort consumers have in using it. The core problem, therefore, is to understand what factors influence a consumer's preference for AI-assisted online purchasing. By identifying these factors such as trust, privacy, ease of use, and perceived usefulness businesses can develop AI tools that better match consumer expectations and encourage wider acceptance of AI in e-commerce.

2.3 OBJECTIVE OF THE STUDY

- To identify the factors influencing consumer preference for making artificial intelligence powered online purchasing.

3 RESEARCH METHODOLOGY

3.1Data

The data for this study is primary in nature and has been collected using questionnaire and interview with online buyers using online based webstores for their purchase from Ernakulam district.

3.2 Sampling

By deploying convenience sampling ,data has been collected from online buyers across Ernakulam district .The study includes response from 450 online users ensuring diverse representation of the perspectives.

3.3 Framework of Analysis

The collected data has been analysed using descriptive statistics ,simple percentage analysis and factor analysis to identify key factors influencing consumer towards making artificial intelligence embedded online buying decision.

3.4 Significance of the study

The identification of key factors influencing customer preference towards AI-powered online buying holds commercial and intense strategic significance for mordern businesses, technology developers, and marketers. By descriptively assessing how factors like Trust, Perceived Usefulness, Ease of Use, and Secured E-Payment directly impact customer choices, this research provides the necessary data-driven blueprint for designing AI systems that move beyond novelty to become indispensable tools. Understanding which elements, such as Increased Convenience and Instant Support are most highly valued allows companies to prioritize development efforts, allocate resources efficiently, and establish a competitive advantage by building platforms which maximize customers overall satisfaction and foster long-term adoption, ultimately driving higher conversion rates and revenue growth in the rapidly evolving digital marketplace.

4.FINDINGS AND INTERPRETATION

4.1ANALYSIS

Variables	Description	Frequency	Percentage
Age	18—30	172	38.2
	31—43	147	32.7
	44—56	91	20.2
	57& Above	40	8.9
Gender	Male	206	45.8
	Female	244	54.2

Area of Residence	Rural	76	16.9
	Semi-urban	132	29.3
	Urban	242	53.8

Educational Qualification	Below high school	27	6
	High school/equivalent	81	18
	Bachelor's degree	179	39.8
	Master's degree	154	34.2
	Others	9	2
Occupation	Business/self employed	97	21.6
	Employee	155	34.4
	Home maker/retired	68	15.1
	Professional	65	14.4
	Student	50	11.1
	Others	15	3.3

Source: Primary data

4.1.1INTERPRETATION

i.Age

The age distribution reveals that most of the respondents fall within the age group 18–30 age counting about 38.2% of their total representative. The next more counted group was about 32.7% of second age group, The other two accounted for accounting for 20.2% and 8.9%,indicating that the older population is the least represented group in the dataset.

Interpretation

The younger segment, of the age group 18-30 age group often termed as digital natives, inhibits a higher level of comfort, adoption, and active use of AI-driven tools in e-commerce, through personalized recommendations, voice shopping assistants, and chatbot support. The older population representing about 57 & Above age group representing 8.9% of the population shows lower adoption rate intelligent technology like AI in their online purchasing habits.

ii.Gender

The gender distribution is distributed with 54.2% female and 45.8% male respondents participated in this study.

Interpretation

The study features a gender distribution that is slightly skewed toward female respondents, with 54.2% female participants compared to 45.8% male participants. While relatively balanced, this distribution is not equal and suggests that any findings drawn from the study are based on a sample where the female perspective holds a marginal majority.

iii.Area of Residence

The urban respondents are the major respondents accounting to 53.8% mainly due to heavily capturing trends influenced by city living, such as easier access to high-speed internet and developed commercial infrastructure. Semi-urban accounts for about 29.3% and rural about 16.9%.

Interpretation

The data on the area of residence shows a strong concentration of individuals from urban areas, which is the largest segment with 242 individuals (53.8%), accounting for more than half of the total sample. The second largest group is from semi-urban areas, represented by 132 individuals (29.3%), While the rural population represents only (16.9%) which indicates that urban people are more aware and actively making artificial intelligence embedded online buying.

iv.Education

The educational background shows that majority of sample holding Bachelor's degree accounting for 39.8% and Master's degree for 34.2%. High school/equivalent group has 81 individuals holding 18%, while those with Below high school education are the second smallest group at 27 individuals 6%.

Interpretation

The study's significant skew towards higher education, with over 74% of the sample holding a Bachelor's or Master's degree, suggests that the findings on AI-embedded online buying will predominantly reflect the behaviour of a digitally literate and sophisticated consumer base. This highly educated demographic is generally associated with a higher acceptance of new technologies and a greater likelihood of trusting and engaging with complex AI features like predictive analytics and personalized recommendations, thereby enhancing their overall experience

v. Occupation

The occupation data indicates that the largest segment of the sample respondents are employees,34.4%, followed by individuals who are Business/self-employed accounts for 21.6%. Together, these two categories account for over half of the sampled population. The remaining occupations are less represented: Home maker/retired individuals account for .68 (15.1%), Professionals for 65 (14.4%), and Students for 50 (11.1%).

Interpretation

The occupational profile, heavily weighted toward Employees (34.4%) and the Business/self-employed (21.6%), means the study on AI-driven online buying will largely capture the behaviour of working adults who prioritize speed and convenience. This majority is highly receptive to AI features that streamline purchasing and save time, a need further amplified by the demands of Professionals (14.4%) who also seek sophistication and security from AI tools. However, due to the underrepresentation of Students and the Home maker/retired groups, the findings will offer only a limited perspective on price-sensitive buying behaviors and the use of AI for budget optimization**.**

4.2 FACTOR ANALYSIS

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.858
Bartlett's Test of Sphericity	Approx. Chi-Square	5020.351
	df	105
	Sig.	.000

Rotated Component Matrix[a]				
	Component			
	1	2	3	4
Avoidance of complication	.689			
Secured e-payment transaction	.676			
Enjoyment	.647			
Trust	.641			
Ease of search	.636			
Perceived ease of use	.628			
Information availability		.817		
Improves Effectiveness		.771		
Perceived usefulness		.660		
Comfortability			.828	
Ease of navigation			.736	

Useful in price comparison			.625	
Increased convenience				.869
Instant support to queries				.685
Overall satisfaction				.599
Eigenvalues	6.603	1.608	1.276	1.003
% of Variance	44.019	10.721	8.508	6.687
Cumulative %	44.019	54.741	63.249	69.936

4.2.1 INTERPRETATION

The results obtained through factor analysis demonstrates a measure of sampling adequacy of 0.858 .This value indicates a acceptable limit as it is above the threshold limit of 0.50.Barlet's test of sphericity showed a significant result with chi-square value of 5020.35 which establish a significant correlation among variables ,making it suitable for factor analysis. The computed factor analysis categorized in to four components based on the proper value greater than 1.These components collectively shows a satisfactory level of explained variance.

The first component showing strongest factor variance of 44.019%, indicates a strong factor loaded value of variables including avoidance of complication (.689),secured e-payment transaction (0.676),enjoyment (.647),trust (.641),ease of search (.636),perceived ease of use (.628).The second factor component loading a variance value of 10.271%, including information availability of (.817),effectiveness (.771),perceived usefulness (.660),The third factor component loading a value of (.828) for comfortability,(.736) for ease of navigation,(.625) for price comparison using artificial intelligent technologies. The fourth factor component loaded (.828) showing convenience value,(.685) for instant support to queries,(.599) for overall satisfaction. These factors identified has a strong base for influencing consumer decision towards making online buying through online webstores. Thus, the artificial intelligence usage and its technology enhancement through online webstores directly influence consumers to make online buying and impacts consumer willingness to make online purchase decision.

4.3 MAJOR FINDINGS

- 18—30 is the biggest age group among the AI enhanced online shoppers ,suggesting that young middle age people are the most regular user of AI online shopping.
- The gender distribution skewed towards female respondents and male respondents only accounted for about 45.8%.
- The majority of users from urban area (about 53.8%) are more literate and opting for artificial intelligence enhanced online buying.
- A majority of respondents have achieved bachelor's degree education and above (with more than 39% which indicates relatively good digital literacy among the users covered.
- The occupation status indicates that the largest segment of the sample respondents are employees accounting for 34.4%, followed by individuals who are Business/self-employed accounts for 21.6%.
- The key factors influencing AI embedded online buying reflects various aspects such as security, trust, and operational ease, with high loadings on variables including avoidance of complication, secured e-payment transaction, Enjoyment, Trust, and Ease of search—highlighting users' preference for smooth, trustworthy, and effortless online interactions.
- The second component of factor analysis table captures the functional and informational value of the system, indicating the strong loadings for Information availability, Improves effectiveness, and Perceived usefulness.
- The third component of factor analysis matrix represents interface-related comfort and usability, with variables like comfortability, ease of navigation, and useful in price comparison loading strongly which acts a variable affecting consumer intention towards making online purchasing.

• The fourth component of the factors influencing customer to make artificial intelligence embedded online buying reflects outcome-oriented satisfaction factors such as increased convenience, instant support to queries, and overall satisfaction.

4.4 SUGGESTIONS

• Retailers should prioritize the trust, enjoyment, and security aspects of the AI-powered interface which ensures a high degree of avoidance of complication and a secured e-payment transaction process. This factor accounts for the largest share of consumer preference, indicating its critical importance.
• The shopping effectiveness can be improved using intelligent technology ,which helps the business to enhance the AI's ability to provide information availability and also demonstrate a clear improvement in the shopping process which directly affect the shopping effectiveness of consumers . Also, AI can improve consumers value by providing useful, comprehensive data to make overall experience more fruitful.
• The factor focusing on the comfortability and ease of navigation of the AI-powered platform highlights AI's utility in providing quick and accurate price comparison which helps consumers to make better value-based decisions.
• Instant support to queries such as advanced AI chatbots ensures high-quality, instant support for consumers which is the key factor affecting overall satisfaction and a perception which affects increased convenience.
• By offering more advanced and personalised features along with high speed internet capability ,AI-powered purchasing platforms can serve the needs of the sophisticated urban consumers.
• Developers should confidently prioritize the identified factors such as trust, convenience ,entertainment etc in their AI development roadmap.
• Trust and Secure e-payment transactions should be ensured for transparently communicating their data security which builds consumer confidence.
• Perceived ease of use and ease of navigation indicate that simplicity and a hassle-free experience are non-negotiable requirements for successful AI-powered online purchasing.

5.CONCLUSION

This research draws attention to the key factors influencing consumers preference towards making artificial intelligence enhanced online buying. The important factors include trust ,avoidance of complications, secured e-payment transaction, enjoyment, ease of search, perceived ease of use, information availability, effectiveness, usefulness, comfortability, ease of navigation, instant support to queries, overall satisfaction. This influences consumer to make a confident online buying option using artificial intelligence . In this study avoidance of complication, security in transactions, enjoyment ,trust and ease of search acts a strong factor loading component affecting artificial intelligence enhanced online buying followed by other factors such as information availability, effectiveness ,overall satisfaction etc. The results signify that literacy level digitally also affects consumers using modern technology embedded online buying. More adopting and improving technology friendly view point among consumers leads to broader adoption and use of artificially enhanced tools in electronic commerce. Above all the findings highlight the importance of target oriented educational & promotional strategies to facilitate the productivity of artificially enhanced technology in electronic retail context.

6.SCOPE FOR FURTHER RESEARCH

Further research should move beyond identified factors for testing prescriptive interventions. Specifically, future studies could employ experimental designs (A/B testing) to measure the impact of implementing key AI features (like advanced AI fraud detection, adaptive interfaces, or predictive recommendations) on specific performance metrics, such as customer retention rates, the reduction in cart abandonment which is linked to first component of factor analysis , and the increase in average order value connected to second component of the analysis. Given the demographic skew, research extend its need to explore the potential bias in AI adoption, specifically for investigating the strategies to increase AI acceptance and digital literacy among the underrepresented older and rural populations (e.g., assessing the effectiveness of simpler voice-based AI tools for the 57 & Above age group) to ensure inclusive e-commerce development.

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