



International

Journal of Recent Research and Applied Studies

(Multidisciplinary Open Access Refereed e-Journal)

ISSN:2349-4891

ARTIFICIAL INTELLIGENCE IN PRODUCT RECOMMENDATIONS AND CUSTOMER SATISFACTION: A STUDY AMONG ONLINE SHOPPERS IN VELLORE DISTRICT

¹VICHITRA.V, & ²Dr. T.BHARATHI,

¹Ph.D. Research Scholar (Part-Time), D.K.M. College for Women (Autonomous), Vellore – 632 001. (Affiliated to Thiruvalluvar University, Serkkadu)

²Assistant Professor and Research Guide, Department of Commerce, D.K.M. College for Women (Autonomous), Vellore- 632 001. (Affiliated to Thiruvalluvar University, Serkkadu)

Abstract

Artificial Intelligence (AI) is increasingly being used in online shopping to provide customers with personalized product recommendations. This study focuses on the influence of AI-based product recommendations on customer satisfaction among online shoppers. The study is based on primary data collected from **86 respondents** through a structured questionnaire. A descriptive research method was adopted to understand the awareness, usage, preference and satisfaction of customers towards AI recommendations. The collected data were analyzed using percentage analysis, **Chi-square test and ANOVA**. The findings reveal that most respondents are young female undergraduate students with a monthly income below Rs. 20,000. Meesho is the most commonly used online shopping platform among the respondents. The study also shows that most respondents are aware of AI-based recommendations and have a positive preference towards them. The ANOVA results indicate that there is no significant difference in customer satisfaction among the various aspects of AI-based product recommendations. The study concludes that AI-based product recommendations can make online shopping more convenient and improve customer satisfaction by providing relevant and useful product suggestions.

Keywords: Artificial Intelligence, AI-Based Product Recommendations, Online Shopping, Customer Satisfaction, Online Shoppers.

Introduction

In recent years, Artificial Intelligence (AI) has emerged as a key technology shaping the e-commerce landscape, especially in the way online retailers deliver personalized product suggestions to shoppers. By analysing a customer's browsing patterns, past purchases, search history and stated preferences, AI-powered recommendation systems are able to put forward products that closely align with individual tastes. In doing so, they cut down the time customers spend searching, help them come across products they might otherwise miss and support more informed buying choices. Zhang et al. (2021) drew attention

to the expanding influence of AI within recommender systems and its capacity to interpret what users want. In a related study, Chinchanchokchai et al. (2021) observed that a customer's background and level of product knowledge can shape how they react to AI-generated recommendations. Along similar lines, Hollebeek et al. (2024) pointed out that AI-driven technologies contribute to stronger consumer engagement, greater perceived value and richer customer experiences by making interactions more personal. As online shopping continues to expand at a rapid pace, it has become increasingly important to understand how consumers view AI-based recommendations. When suggestions are

relevant and dependable, they tend to boost customer satisfaction; when they are poorly matched or unreliable, they can instead detract from the overall shopping experience. It is against this backdrop that the present study sets out to explore Artificial Intelligence in Product Recommendations and Customer Satisfaction among Online Shoppers in Vellore District.

Objectives

1. To study the demographic profile of online shoppers in Vellore District.
2. To examine the association between demographic factors and customer satisfaction with AI-based product recommendations.
3. To compare the level of customer satisfaction across different demographic groups of online shoppers.

Hypotheses

Null Hypotheses (H ₀)	Alternative Hypotheses (H ₁)
There is no significant association between the age of online shoppers and their perception of AI-based product recommendation	There is a significant association between the age of online shoppers and their perception of AI-based product recommendation
There is no significant difference in customer satisfaction with AI – based product recommendations among different income groups of online shoppers.	There is a significant difference in customer satisfaction with AI – based product recommendations among different income groups of online shoppers.

Review of Literature

Zhang et al. (2021) These researchers explored how artificial intelligence is applied within recommender systems, explaining that such systems draw on users' past behavior to forecast future preferences for products and services. Their work illustrates AI's role in enabling personalized recommendations through behavioral analysis,

making it directly relevant to AI-driven product suggestions in online retail.

Bawack et al. (2022) Using a bibliometric approach, this team reviewed AI applications in e-commerce across 4,335 documents and 229 articles from top information-systems journals. Recommender systems emerged as a central research theme, alongside personalization, trust, sentiment analysis and optimization underscoring AI's expanding role in understanding and engaging online shoppers.

Pillarisetty and Mishra (2022) This review examined AI tools and their effect on customer experience specifically within online fashion retail, noting that AI is increasingly deployed to craft personalized and meaningful shopping journeys. Their findings back the idea that AI applications shape customer satisfaction and overall experience in e-commerce.

Ezeife and Karlapalepu (2023) this survey reviewed e-commerce recommendation systems built around sequential patterns, showing that accuracy improves when models incorporate consumers' past clicks and purchase sequences. This underscores how important prior browsing and buying behavior is for generating relevant personalized suggestions.

Hollebeek et al. (2024) this team conducted a systematic review spanning 89 studies on how consumers engage with AI-based technologies, identifying accurate service delivery, perceived value, and reduced consumer effort as recurring themes. Their findings suggest AI can enhance consumer interactions by delivering more precise, personalized service while easing the burden on consumers.

Meng and Xiao (2026) this study explored consumer satisfaction with AI-generated product advice via ChatGPT, applying the Theory of Consumption Values to examine functional, emotional, epistemic, social, and conditional dimensions. Most of these values correlated positively with satisfaction, with functional value showing the strongest link and trust serving as a key mediating factor offering solid support for research into AI-based recommendations and customer satisfaction.

Sasikala et al. (2026) this study investigated AI-driven personalized

recommendation systems among 160 Indian online shoppers, focusing on perceived relevance, trust and purchase intent. It offers valuable insight by grounding the topic of AI-powered recommendations and consumer behavior within an Indian context.

Research Methodology

Data Collection

The study is based on both primary and secondary data. Primary data were collected from online shoppers in Vellore District using a structured questionnaire designed to examine their perceptions of Artificial Intelligence in Product Recommendations and Customer Satisfaction. Secondary data were collected from journals,

books, research articles, previous studies, websites and other relevant online sources.

Study Area

The study was conducted among online shoppers in Vellore District, Tamil Nadu.

Sample Size

A total of 86 valid responses were collected from online shoppers and considered for the study.

Sampling Method

The study adopted a convenience sampling method to collect data from online shoppers in Vellore District.

Analysis and Interpretation

Table 1
Demographic Variables

Demographic Variables		No. of Respondents	Percentage
Gender	Male	11	12.79 %
	Female	75	87.21 %
	Total	86	100 %
Age	Below 20 Years	46	53.49 %
	21 – 30 Years	22	22. 58 %
	31-40 Years	10	11. 63 %
	Above 40 Years	8	9.3 %
	Total	86	100%
Educational Qualification	Undergraduate	49	56.98 %
	Postgraduate	18	20.93 %
	M.Phil	8	9.3 %
	Ph.D.	8	9.3 %
	Others	3	3. 49 %
	Total	86	100 %
Occupation	Student	57	66.28 %
	Government Employee	5	5. 81 %
	Private Employee	15	17. 44 %
	Business/ Self Employed	2	2.33 %
	Others	7	8.14 %
	Total	86	100 %
Monthly Income	Below Rs. 20000	57	66.28 %
	Rs. 20001 - Rs. 40000	18	20. 93 %
	Rs. 40001 – Rs. 60000	5	5. 81 %
	Above Rs. 60000	6	6.98 %
	Total	86	100 %
Frequency Of Online	Weekly	11	12.79 %

Shopping	Monthly	27	31.4 %
	Occasionally	17	19.77 %
	Rarely	31	36.05 %
	Total	86	100 %

From the table 1.1 it shows that the demographic profile of the 86 respondents **75 (87.21%) are female** and **11 (12.79%) are male**, indicating that female respondents form the majority. In terms of age, **46 (53.49%) respondents are below 20 years**, followed by 22 (22.58%) in the age group of 21–30 years, 10 (11.63%) aged 31–40 years and 8 (9.30%) above 40 years. Regarding educational qualification, **49 (56.98%) are undergraduates**, followed by 18 (20.93%) postgraduates, 8 (9.30%) M.Phil holders, 8 (9.30%) Ph.D. holders and 3 (3.49%) with other qualifications. With respect to

occupation, **57 (66.28%) are students**, followed by 15 (17.44%) private employees, 5 (5.81%) government employees, 2 (2.33%) business/self-employed and 7 (8.14%) in other occupations. In terms of monthly income, **57 (66.28%) respondents earn below Rs. 20,000**, while 18 (20.93%) earn Rs. 20,001–40,000, 5 (5.81%) earn Rs. 40,001–60,000 and 6 (6.98%) earn above Rs. 60,000. Regarding the frequency of online shopping, **31 (36.05%) respondents shop rarely**, 27 (31.40%) shop monthly, 17 (19.77%) shop occasionally and 11 (12.79%) shop weekly.

Table 2

Online Shopping Platform Used Frequently

Online Shopping Platform Used Frequently	No. of Respondents	Percentage
Amazon	17	19.77 %
Flipkart	17	19.77 %
Meesho	45	52.33 %
Myntra	3	3.49 %
Others	4	4.65 %
Total	86	100 %

The findings from table 1.2 indicates that **Meesho is the most commonly used online shopping platform among the respondents**, with 45 respondents (52.33%) preferring it. Amazon and Flipkart are used by 17 respondents each (19.77%), showing a moderate level of preference. A small number of respondents use other platforms, accounting for 4 respondents (4.65%), while Myntra is used by only 3 respondents (3.49%).

Table 3

Awareness and Usage of AI Based Product Recommendations

Awareness And Usage of AI Based Product Recommendations	Yes	No
Awareness	67	19
Purchase	35	51
Preference	59	27

The table 1.3 shows that **67 respondents are aware of AI-based product recommendations**, while 19 are not aware of them. **35 respondents have purchased products based on AI recommendations**, whereas 51 have not. Further, **59 respondents prefer AI-based product recommendations**, while 27 do not prefer them.

Chi – Square Distribution

Table 4
AI-Based Product Recommendation

AI-Based Product Recommendation	Chi-Square Value	p-Value	Significant (Yes/No)
AI recommends products that match my interests	24.683	0.017	Yes
AI recommendations are relevant to my previous searches or purchases	27.451	0.007	Yes
AI helps me discover products that I might not have found otherwise	22.936	0.028	Yes
AI saves my shopping time	25.814	0.011	Yes
I trust AI-generated product recommendations	29.327	0.004	Yes
AI influences my purchase decision	26.572	0.009	Yes

The chi-square analysis shows that there is a significant association between the age of online shoppers and their perception of AI-based product recommendations. The chi-square values for the six statements are **24.683 (p = 0.017)**, **27.451 (p = 0.007)**, **22.936 (p = 0.028)**, **25.814 (p = 0.011)**, **29.327 (p = 0.004)**, and **26.572 (p = 0.009)** respectively. Since all the p-values are **less than 0.05**, the results indicate that age significantly influences shoppers' perceptions regarding the relevance, usefulness, discovery, time-saving ability, trust and purchase influence of AI-based product recommendations.

Result

The null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted. Therefore, there is a significant association between the age of online shoppers and their perception of AI-based product recommendations.

Analysis of Variance

Source of Variation	Sum of Squares (SS)	df	Mean Square (MS)	F-value	p-value
Between Groups	3.07	3	1.02	1.465	0.224
Within Groups	237.67	340	0.699		
Total	240.74	343			

The calculated **F-value is 1.465** and the **p-value is 0.224**. Since the p-value is greater than **0.05**, there is **no significant difference** among the mean customer satisfaction levels for the four AI-based product recommendation statements.

Result

The null hypothesis is **accepted** at the 5% level of significance. Hence, there is **no significant difference in customer satisfaction among the different aspects of AI-based product recommendations**.

Findings

The study found that the majority of the respondents are female (87.21%). More than half of the respondents are below 20 years of age (53.49%). Most of the respondents are undergraduates (56.98%) and students form the largest occupational group (66.28%). The majority of respondents have a monthly income of below Rs. 20,000 (66.28%). In terms of online shopping frequency, most respondents shop online rarely (36.05%). Meesho is the most frequently used online shopping platform among the respondents (52.33%). The study also found that 67 respondents are aware of AI-based product recommendations, while 59 respondents prefer using them. However, only

35 respondents have purchased products based on AI recommendations. The Chi-square test was used to examine the relationship between demographic factors and customer satisfaction with AI-based product recommendations. The ANOVA result showed that there is no significant difference in customer satisfaction among the different AI-based product recommendation statements. Overall, the findings show that respondents have good awareness and a positive preference towards AI-based product recommendations, but actual purchases based on these recommendations are comparatively lower.

Conclusion

The study concludes that AI-based product recommendations play an important role in improving the online shopping experience and customer satisfaction. Most of the respondents are aware of AI recommendations and show a positive interest in using them while shopping online. These recommendations help customers identify suitable products, save time and make shopping more convenient. However, the number of respondents who actually purchase products based on AI recommendations is comparatively lower. The statistical results also show that there is no significant difference in customer satisfaction across the different aspects of AI-based recommendations. Overall, the study suggests that AI-based product recommendations can contribute to better customer satisfaction when they are accurate, relevant and based on the needs and preferences of customers.

References

1. Bawack, R. E., Wamba, S. F., Carillo, K. D. A., & Akter, S. (2022). Artificial intelligence in e-commerce: A bibliometric study and literature review. *Electronic Markets*, 32, 297–338.
2. Cabrera-Sánchez, J.-P., Ramos-de-Luna, I., Carvajal-Trujillo, E., & Villarejo-Ramos, Á. F. (2020). Online recommendation systems: Factors influencing use in e-commerce. *Sustainability*, 12(21), 8888.
3. Chinchanchokchai, S., Thontirawong, P., & Chinchanchokchai, P. (2021). A tale of two recommender systems: The moderating role of consumer expertise on artificial intelligence based product recommendations. *Journal of Retailing and Consumer Services*, 61, 102528.
4. Choa, E., & Rha, J.-Y. (2026). Does consumer autonomy matter? Consumer perceptions of AI-driven recommendations and the mediating role of consumer autonomy in consumer satisfaction. *International Journal of Human-Computer Interaction*.
5. Ezeife, C. I., & Karlapalepu, H. (2023). A survey of sequential pattern based e-commerce recommendation systems. *Algorithms*, 16(10), 467.
6. Feng, Y. (2023). Enhancing e-commerce recommendation systems through approach of buyer's self-construal: Necessity, theoretical ground, synthesis of a six-step model, and research agenda. *Frontiers in Artificial Intelligence*, 6, 1167735.
7. Feng, L., Yuan, H., Ye, Q., Qian, Y., & Ge, X. (2024). Exploring the impacts of a recommendation system on an e-platform based on consumers' online behavioral data. *Information & Management*, 61(2), 103905.
8. Hollebeek, L. D., Menidjel, C., Sarstedt, M., Jansson, J., & Urbonavicius, S. (2024). Engaging consumers through artificially intelligent technologies: Systematic review, conceptual model, and further research. *Psychology & Marketing*, 41(4), 880–898.
9. Malekpour Alamdari, P., Jafari Navimipour, N., Hosseinzadeh, M., & Safaei, A. A. (2020). A systematic study on the recommender systems in the e-commerce. *IEEE Access*.
10. Mazzù, M. F., Andria, A., Baccelloni, A., & De Angelis, M. (2025). The impact of humans vs. AI recommendation on consumer reactions to products exposure. *Electronic Commerce Research*.
11. Meng, K., & Xiao, J. J. (2026). Can ChatGPT relate to you? Exploring consumer satisfaction with AI-generated product advice through the lens of consumption values. *Journal of Retailing and Consumer Services*, 88, 104496.

12. Peruchini, M., da Silva, G. M., & Teixeira, J. M. (2024). Between artificial intelligence and customer experience: A literature review on the intersection. *Discover Artificial Intelligence*, 4, 4.
13. Pillarisetty, R., & Mishra, P. (2022). A review of AI (artificial intelligence) tools and customer experience in online fashion retail. *International Journal of E-Business Research*, 18(2), 1–12.
14. Sasikala, M., Shobhana, N., & Kamaladevi, M. (2026). Impact of AI-driven personalized product recommendation systems on online purchase intention: Indian e-commerce shoppers' perceived relevance and trust. *Minnesota Journal of Business Law and Entrepreneurship*.