A Study on the Usage, Impact and Challenges of AI Assistants in Consumer Goods Purchasing

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Abstract

In the current study, the researchers have used both primary and secondary data for analysing the impact of AI assistants on consumer shopping behavior in Kovilpatti. The researchers have applied convenient sampling method for selecting 100 sample respondents from the unknown population. Various statistical tools have been used for analysis such as Chi-Square test, Independent Sample T-test, ANOVA. The study found that majority of the respondents obtained personalised shopping experience while purchasing their desired goods using AI assistants. On the other hand, the respondents opined that AI assistant's suggestions are inaccurate. Conclusively, the research study highlights that there is no significance difference among the respondents based on their gender and educational qualification regarding the impact of AI assistants on consumer shopping behaviour.

Keywords: AI assistants, Consume shopping behaviour, Consumer products, Impacts, Problems

Introduction

Artificial Intelligence (AI) assistants are increasingly influencing consumer shopping patterns by providing customized recommendations and enhancing digital retail interactions (Huang & Rust, 2021). The widespread integration of AI technologies into e-commerce platforms has transformed how consumers search for products, evaluate options, and make purchase decisions (Grewal, Roggeveen, & Nordfält, 2017). Despite these benefits, issues related to the precision and reliability of AI-generated suggestions may affect consumer confidence and satisfaction (Ricci *et al*. 2011). In this context, the present study investigates the impact of AI assistants on consumer shopping behaviour in Kovilpatti using both primary and secondary data from 100 respondents. Additionally, it examines whether demographic

factors such as gender and educational qualification significantly influence perceptions and usage of AI-assisted shopping (Venkatesh *et al*. 2003).

Statement of the Problem

The increasing use of AI assistants has significantly influenced consumer shopping patterns by providing personalized recommendations and guidance. Although these tools enhance the shopping experience, doubts remain about the precision and dependability of their suggestions. In Kovilpatti, the real impact of AI assistants on consumers' buying decisions is not clearly understood. It is also uncertain whether demographic factors like gender and educational qualification affect consumers' perceptions and usage. Hence, this study seeks to analyze the influence of AI assistants on consumer shopping behaviour in Kovilpatti.

Objectives of the Study

- To identify the reasons for using AI assistants in purchasing consumer goods.
- To investigate the impact of AI assistants on consumer shopping behaviour.
- To examine the problems faced by the respondents while using AI assistants in purchasing consumer products.
- To offer findings and suggestion based on the study.

Hypotheses

H0: There is no significant association between the age of the respondents and their reasons for using AI assistants while purchasing goods.

H0: There is no significance difference among the respondents based on their gender regarding the impact of AI assistants on consumer shopping behaviour.

H0: There is no significant difference among the respondents based on their educational qualification regarding the problems faced by them while using AI in purchasing goods.

Review of Literature

Gantumur K (2025) studied in his research work entitled "The Impact of Artificial Intelligence on Online Shopping" that the study finds that artificial intelligence significantly benefits online shopping by enhancing personalization and customer interaction. However, for long-term acceptance and trust, businesses must prioritize ethical practices, safeguard user privacy, and foster consumer confidence.

Deephika Aggarwal (2024) expressed in his research work entitled "Artificial intelligence" that AI has transformed the online shopping experience by enabling businesses to provide personalized recommendations based on users' browsing and purchase behavior. This results in a more customized and convenient shopping journey, helping consumers save time and effort. Moreover, AI plays a key role in detecting and preventing fraud, ensuring safer transactions and enhancing customer trust.

Manjula S. (2021), expressed in his research work entitled *"The Impact of Artificial Intelligence on Consumer Buying Behaviors"* that the strong relationship between artificial intelligence (AI) and consumer behavior in the retail industry. The research confirms that AI is highly efficient in predicting and interpreting consumer purchasing trends, as evidenced by the validation of the first hypothesis. The author recommends that online retailers incorporate AI throughout every stage of the consumer journey beginning with need recognition and information search, continuing through evaluation and purchase decisions, and extending to post-purchase behavior to better predict customer actions on digital platforms. The study also reveals that AI aids in monitoring and understanding shifts in consumer behavior by analyzing and forecasting their preferences. Furthermore, the findings suggest that brands can leverage these insights to design more effective sales strategies. By studying consumer patterns, AI can anticipate future buying behavior, allowing businesses to provide more relevant products and service.

Lefteris Moussiader (2020), studied in his research work entitled "An Overview of Chatbot Technology," explored how recent technological advancements, particularly in artificial intelligence, have significantly influenced customer satisfaction in the e-retail sector. The convenience and time-saving benefits of shopping from home with the aid of AI technologies have encouraged more people to embrace digital platforms, indicating a shift in consumer behavior. While prior research has primarily examined the influence of Technology Acceptance Model (TAM) components on technology adoption, there has been limited focus on the Indian context. Specifically, there is a noticeable gap in studying the impact of AI tools like voice search and chatbots on consumer purchase intentions in India. This study aims to bridge that gap by extending the application of TAM components to the Indian online grocery market.

Manikandan G (2024), focused in his research work entitled *"Measuring the Influence of Artificial Intelligence (AI) on Online Purchase Decisions in the Case of Indian Consumers,"* highlights the substantial effect AI has on both individual consumer behavior and business

management practices. The research emphasizes the role of machine learning in shaping consumer actions and shows that AI can significantly cut down the time and costs involved in executing digital marketing strategies. This improvement contributes to achieving organizational goals more efficiently. Additionally, the study stresses that the integration of AI in digital marketing should be in harmony with the organization's evolving objectives and strategic direction.

Data Analysis and Interpretation

Reasons for Using AI Assistants in Purchasing Goods

It is important to analyse the reasons for using AI assistants in purchasing goods.

Table 1: Reasons for Using AI Assistants in Purchasing Goods

S. No.	AI Assistance in Purchase Goods	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
1.	Better Product Recommendation	42 (42.00)	35 (35.00)	18 (18.00)	3 (3.00)	2 (2.00)	100 (100.00)
2.	Personalized Shopping Experience	18 (18.00)	51 (51.00)	24 (24.00)	4 (4.00)	3 (3.00)	100 (100.00)
3.	Price Optimization	25 (25.00)	34 (34.00)	34 (34.00)	4 (4.00)	3 (3.00)	100 (100.00)
4.	Voice Activated Shopping	25 (25.00)	24 (24.00)	24 (24.00)	22 (22.00)	5 (5.00)	100 (100.00)
5.	Fraud Deduction& Secure Transaction	31 (31.00)	24 (24.00)	25 (25.00)	10 (10.00)	10 (10.00)	100 (100.00)
6.	Language and Accessibility Support	30 (30.00)	34 (34.00)	24 (24.00)	10 (10.00)	2 (2.00)	100 (100.00)
7.	Customized Offers	27 (27.00)	39 (39.00)	27 (27.00)	2.0 (5.00)	2 (2.00)	100 (100.00)
8.	Competitive Pricing	23 (23.00)	44 (44.00)	27 (27.00)	3 (3.00)	3 (3.00)	100 (100.0)
9.	Improved Decision Making	32 (32.00)	29 (29.00)	26 (26.00)	9 (9.00)	4 (4.00)	100 (100.0)
10.	Reducing Errors	25 (25.00)	36 (36.00)	22 (22.00)	11 (11.00)	6 (6.00)	100 (100.0)

Source: Primary Data

Table 1 expresses that out of 100 respondents, 42.00 per cent (42) of the respondents are agree with the statement 'Better Product Recommendation'. Expresses that out of 100 respondents, 51.00 per cent (51) of the respondents are agree with the statement 'Personalised Shopping Experience'. Expresses that out of 100 respondents, 34.00 per cent (34) of the respondents are agree with the statement 'Price Optimization'. Expresses that out of 100 respondents, 25.00 per cent (25) of the respondents are agree with the statement 'Voice Activated Shopping'. Expresses that out of 100 respondents, 31.00 per cent (31) of the respondents are agree with the statement 'Fraud Deduction& Secure Transaction'. Expresses that out of 100 respondents, 34.00 per cent (34) of the respondents are agree with the statement 'Language and Accessibility Support'. Expresses that out of 100 respondents, 39.00 per cent (39) of the respondents are agree with the statement 'Customized Offers'. Expresses that out of 100 respondents, 44.00 per cent (44) of the respondents are agree with the statement 'Competitive Pricing'. Expresses that out of 100 respondents, 32.00 per cent (32) of the respondents are agree with the statement 'Improved Decision Making'. Expresses that out of 100 respondents, 36.00 per cent (36) of the respondents are agree with the statement 'reducing errors'.

It is obvious that, majority (51.00 %) of the respondents are agree with the statement 'Personalised shopping experience'.

Significant Association between the Age of the Respondents and Their Reasons for Using AI Assistants while Purchasing Goods

H0: There is no significant association between the age of the respondents and their reasons for using AI assistants while purchasing goods.

H1: There is significant association between the age of the respondents and their reasons for using AI assistants while purchasing goods.

Table 2: Result of Chi-Square Test

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	95.471[a]	48	.000
Likelihood Ratio	43.281	48	.666
Linear-by-Linear Association	1.038	1	.308
N of Valid Cases	100		

Source: Computed Data

From the above schedule 2, the significance value of .000 is less than 0.05. Hence, the hypothesis rejected and it is concluded that there is significant association between the age of the respondents and their reason for using AI assistants in purchasing goods.

Impact of AI Assistants on Consumer Shopping Behaviour

It is essential to analyse the impact of AI assistants on consumer shopping behaviour. It is displayed in the table 3.

Table 3: AI Assistants on Consumer Shopping Behaviour

S. No.	AI Assistants in Shopping	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
1.	Product Search	31 (31.00)	49 (49.00)	17 (17.00)	2 (2.00)	1 (1.00)	100 (100.00)
2.	Price Comparison	23 (23.00)	45 (45.00)	23 (23.00)	9 (9.00)	0 (0.00)	100 (100.00)
3.	Reading Reviews	27 (27.00)	32 (32.00)	32 (32.00)	5 (5.00)	4 (4.00)	100 (100.00)
4.	Placing Orders	22 (22.00)	41 (41.00)	26 (26.00)	10 (10.00)	1 (1.00)	100 (100.00)
5.	Tracking Delivers	26 (26.00)	36 (36.00)	24 (24.00)	6 (6.00)	8 (8.00)	100 (100.00)
6.	Shopping Guidance	22 (22.00)	38 (38.00)	21 (21.00)	17 (17.00)	2 (2.00)	100 (100.00)
7.	Multichannel Support	17 (17.00)	38 (38.00)	29 (29.00)	8 (8.00)	8 (8.00)	100 (100.00)
8.	Product Availability	27 (27.00)	37 (37.00)	27 (27.00)	6 (6.00)	3 (3.00)	100 (100.00)
9.	Shopping Lists	32 (32.00)	31 (31.00)	28 (28.00)	8 (8.00)	1 (1.00)	100 (100.00)
10.	Returns and Exchanges	25 (25.00)	33 (33.00)	24 (24.00)	13 (13.00)	5 (5.00)	100 (100.00)

Source: Primary Data

From the above Table 3 shows that out of 100 respondents, 49 .00 per cent (49) of the respondents are agree with the statement 'Product Search'. Expresses that out of 100 respondents45.00 per cent (45) of the respondents are agree with the statement 'Price Comparison'. Expresses that out of 100 respondents, 32 .00 per cent (32) of the respondents are agree with the statement 'Reading Reviews'. Expresses that out of 100 respondents, 41.00

per cent (41) of the respondents are agree with the statement 'Placing Orders'. Expresses that out of 100 respondents36.00 per cent (36) of the respondents are agree with the statement 'Tracking Delivers'. Expresses that out of 100 respondents, 38.00 per cent (38) of the respondents are agree with the statement 'Shopping Guidance'. Expresses that out of 100 respondents, 38.00 per cent (38) of the respondents are agree with the statement 'Multichannel Support'. Expresses that out of 100 respondents, 37.00 per cent (37) of the respondents are agree with the statement 'Product Availability'. Expresses that out of 100 respondents, 32 .00 per cent (32) of the respondents are agree with the statement 'Shopping Lists'. Expresses that out of 100 respondents, 33.00 per cent (33) of the respondents are agree with the statement 'Returns and Exchanges'.

It is obvious that, majority (49.00 %) of the respondents are agree with the statement 'product search'.

Significant Difference among Respondents Based on Their Gender Regarding the Impact of AI Assistants on Consumer Shopping Behaviour

H0: There is no significance difference among the respondents based on their gender regarding the impact of AI assistants on consumer shopping behaviour.

H1: There is no significance difference among the respondents based on their gender regarding the impact of AI assistants on consumer shopping behaviour.

Table 4: Result of Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Impact Equal variances assumed	6.451	.013	.157	98	**.876**	.24000	1.52999	-2.79622	3.27622
Equal variances not assumed			.131	31.903	.897	.24000	1.83759	-3.50349	3.98349

Source: Computer data

From the above schedule 5.7 it is clear that the significance value of 0.876 is greater than 0.05. Hence, the hypothesis is accepted and it is concluded that there is no significance difference among the respondents based on their gender regarding the impact of AI assistants on consumer shopping behaviour.

Problems Faced by the Respondents While Using AI Assistants in Purchasing Goods

It is essential to analyses the respondents while using AI assistants in purchasing goods and it is displayed in the table 5.

Table 5: Problems Faced by the Respondents While Using AI Assistants in Purchasing Goods

S. No.	Problems	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Total
1.	Lack of Transparency	39 (39.00)	33 (33.00)	16 (16.00)	10 (10.00)	2 (2.00)	100 (100.00)
2.	Inaccurate Suggestions	17 (17.00)	45 (45.00)	21 (21.00)	13 (13.00)	4 (4.00)	100 (100.00)
3.	Limited Product Knowledge	27 (27.00)	31 (31.00)	29 (29.00)	9 (9.00)	4 (4.00)	100 (100.00)
4.	Biased Recommendations	17 (17.00)	35 (35.00)	26 (26.00)	16 (16.00)	6 (6.00)	100 (100.00)
5.	Technical Issues	24 (24.00)	33 (33.00)	20 (20.00)	14 (14.00)	9 (9.00)	100 (100.00)
6.	Limited Personalization	19 (19.00)	38 (38.00)	25 (25.00)	15 (15.00)	3 (3.00)	100 (100.00)
7.	Security Concerns	25 (25.00)	36 (36.00)	29 (29.00)	9 (9.00)	1 (1.00)	100 (100.00)
8.	Dependence On Data Quantity	20 (20.00)	42 (42.00)	29 (29.00)	8 (8.00)	1 (1.00)	100 (100.00)
9.	User Interface Issues	20 (20.00)	38 (38.00)	25 (25.00)	13 (13.00)	4 (4.00)	100 (100.00)
10	Limited Contextual Understanding	25 (25.00)	35 (35.00)	26 (26.00)	12 (12.00)	2 (2.00)	100 (100.00)

Source: Computer data

From the above table 5 Expresses that out of 100 respondents, 45.00 per cent (45) of the respondents are agree with the statement ‘Inaccurate Suggestions’. Expresses that out of 100 respondents 42.00 per cent (42) of the respondents are agree with the statement ‘Dependence On Data Quantity’. Expresses that out of 100 respondents, 39.00 per cent (39) agree with the

statement 'Lack of Transparency'. Expresses that out of 100 respondents 38.00 per cent (38) of the respondents are agree with the statement 'Limited Personalization'. Express that out 100 respondents, 38.00 per cent (38) of the respondents are agree with the statement 'User Interface Issues'.Expressess that out of 100 respondents, 36.00 per cent (36) of the respondents are agree with the statement 'Security Concerns'. Expresses that out of 100 respondents,35.00 per cent (35) of the respondents are agree with the statement 'Biased Recommendations'. Expresses that out of 100 respondents, 35.00 per cent (35) of the respondents are agree with the statement 'Limited Contextual Understanding'. Expresses that out of 100 respondents, 33.00 per cent (33) of the respondents are agree with the statement 'Technical Issues'. Expresses that out of 100 respondents, 31.00 per cent (31) of the respondents are agree with the statement 'Limited Product Knowledge'.

It is obvious that, majority (45.00 %) of the respondents are agree with the statement 'Inaccurate Suggestions'.

Significant Difference among the Respondents Based on Their Educational Qualification Regarding the Problems Faced by Them While Using AI Assistants in Purchasing Goods

In this analysis part, ANOVA has been applied for analysing the problems faced by the respondents while using AI Assistants in purchasing goods.

H0: There is no significant difference among the respondents based on their educational qualification regarding the problems faced by them while using AI Assistants in purchasing goods.

H1: There is significant difference among the respondents based on their educational qualification regarding the problems faced by them while using AI Assistants in purchasing goods.

Table 6: Result of ANOVA

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	508.098	5	101.620	1.683	1.683
Within Groups	5674.092	94	60.363		
Total	6182.190	99			

Source: Computed data

Table 6 depicts that the calculated value is greater than the table value (1.683 > 0.05). The Null hypothesis is accepted. Hence, "There is no significant difference among the respondents based on their educational qualification regarding the problems faced by them while using AI in purchasing goods.

Findings and Suggestions

Majority (51.00 %) of the respondents are agree with the statement 'Personalised shopping experience'.

Result of Chi-Square Test - The significance value of .000 is less than 0.05. Hence, the hypothesis rejected and it is concluded that there is significant association between the age of the respondents and their reason for using AI assistants in purchasing goods.

It is obvious that, majority (49.00 %) of the respondents are agree with the statement 'product search'.

Result of Independent Samples Test - the significance value of 0.876 is greater than 0.05. Hence, the hypothesis is accepted and it is concluded that there is no significance difference among the respondents based on their gender regarding the impact of AI assistants on consumer shopping behaviour.

It is obvious that, majority (45.00 %) of the respondents are agree with the statement 'Inaccurate Suggestions'.

Result of ANOVA - The calculated value is greater than the table value (1.683 > 0.05). The Null hypothesis is accepted. Hence, "There is no significant difference among the respondents based on their educational qualification regarding the problems faced by them while using AI in purchasing goods.

Suggestions

- As most respondents use AI assistants for personalized shopping and product search, companies should strengthen AI systems to deliver more precise and tailored recommendations.
- Since inaccurate suggestions were identified as a common issue, AI tools must be continuously improved through updated data processing and user feedback integration to enhance accuracy.

- As age has a significant relationship with the reasons for using AI assistants, businesses should develop age-oriented features and user-friendly interfaces to satisfy diverse age groups.
- Programs to improve digital awareness and technical skills can be introduced to enable consumers to use AI assistants more effectively in their purchasing activities.
- Online platforms should maintain clarity and transparency in AI-generated recommendations to increase consumer confidence and satisfaction.

Conclusion

The findings of the study indicate that AI assistants significantly contribute to improving consumer shopping behaviour by providing personalized experiences and simplifying product searches. Nevertheless, the issue of inaccurate recommendations continues to be a major concern among users. The results show that age has a significant association with the reasons for using AI assistants, whereas gender and educational qualification do not significantly influence the impact or the problems encountered while using AI for purchasing goods. In general, AI assistants positively affect consumer shopping behaviour, but enhancing their accuracy and dependability is crucial for achieving greater effectiveness and customer satisfaction.

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