National Research Journal of Information Technology & Information Science
Volume No: 12, Issue No: 2, Year: 2025 (July- December)
PP: 180-188
ISSN: 2350-1278
Peer Reviewed & Refereed Journal (IF: 7.9)
Journal Website www.nrjitis.in

THE IMPACT OF AI ON WOMEN'S BUYING BEHAVIOR TOWARDS GROCERY SHOPPING

Shilpi Shrivastava

P.hd Scholar, SAGE University, Indore Assistant Professor, Shri Vaishnav Institute of Management & Science, Indore

Pratik Jain

Professor at SAGE Institute of Management Studies, SAGE University, Indore

Nidhi Dubey

Assistant Professor, Shri Vaishnav Institute of Management & Science, Indore

ABSTRACT:

This research paper aims to explore the impact of Artificial Intelligence (AI) on women's buying behaviour towards grocery shopping, with a focus on survey-based data collection. As AI technologies continue to evolve and integrate into retail platforms, they are significantly influencing consumer decision-making. Women, traditionally the primary grocery shoppers in many households, are increasingly interacting with AI tools such as recommendation systems, smart shopping apps, and automated delivery platforms.

The objective of this study is to analyze how these AI-driven features affect women's preferences, purchasing frequency, brand loyalty, and overall shopping experience. The research will utilize structured surveys to gather data from women across different age groups, occupations, and socio-economic backgrounds. Key variables to be examined include convenience, trust in AI systems, digital awareness, and the influence of personalized product suggestions.

This survey-based approach will enable a quantitative understanding of behavioural patterns and consumer attitudes towards AI in the grocery shopping context. The study will also assess the extent to which AI impacts impulse buying, product discovery, and satisfaction levels among female consumers.

Findings from this research will contribute valuable insights to the fields of consumer behaviour and retail technology. It will also offer practical recommendations for retailers and AI developers seeking to design more effective, inclusive, and user-friendly grocery shopping solutions that align with the evolving expectations of women consumers. By understanding these dynamics, businesses can better tailor their strategies to enhance customer engagement and loyalty in the AI-driven retail environment.

Key words: Artificial Intelligence (AI), Women's Buying Behavior, Grocery Shopping, Personalization.

INTRODUCTION

Artificial Intelligence (AI) is changing the way people shop, especially in the grocery sector. With features like smart recommendations, voice assistants, and automated delivery systems, AI makes shopping faster, more personalized, and more convenient. These technologies are becoming a regular part of everyday life, particularly in online and app-based grocery

ISSN: 2350-1278
Peer Reviewed & Refereed Journal (IF: 7.9)
Journal Website www.nrjitis.in

platforms.

In many households ,women are the main grocery buyers. Their choices are influenced by factors such as price, brand preference, quality, and now, interactions with AI tools. As AI continues to shape shopping experiences, it is important to understand how women respond to these changes—how they adapt, what they prefer, and how their buying habits are influenced.

Despite the rise of AI in retail, little research focuses specifically on how it affects women's grocery shopping behavior. This study aims to fill that gap by exploring how AI features like personalization, trust, convenience, and product suggestions impact women's preferences, purchase frequency, brand loyalty, and impulse buying. A survey-based approach will help gather insights from women across different age groups, professions, and backgrounds.

The findings will help retailers and AI developers create better, more inclusive tools that meet the needs of women consumers. This research also adds to the growing discussion on how AI is shaping everyday shopping behavior in a digital world.

OBJECTIVES OF THE STUDY

The main objective of this research is to explore the impact of Artificial Intelligence (AI) on women's buying behaviour towards grocery items. The study aims to:

1. **Examine** how AI features such as personalized recommendations, smart apps, and automated services influence women's grocery shopping preferences.
2. **Analyze** the role of AI in affecting purchase frequency, brand loyalty, and impulse buying among women consumers.
3. **Understand** how factors like convenience, digital awareness, age, and socio-economic background influence women's interaction with AI tools.
4. **Provide** insights and practical recommendations for retailers and AI developers to improve the shopping experience for women in AI-enabled retail environments.

LITERATURE REVIEW

(Singh, Nagar, Bala, & Karishma, 2024) The research investigates the connection of AI with consumer intentions of buying products based on demographic criteria, for which survey was done on 550 Delhi/NCR respondents. Researcher found the positive relationship between AI and consumer preferences and their shopping intentions also found difference in shopping intentions based on gender and income level. For sure the findings advocates the positive impact of AI on consumer shopping experience on grocery products and availability of required products with so ease may provide online retailers a base to predict the requirements and preference well in time.

- **(Bhatt & Singh, 2024)** The study emphasis on using TAM i.e. Technology Acceptance Model and used PLS-SEM to analyse the data on 231 online grocery shoppers across India, study concludes with the revealing the facts that AI with its innovative features like voice assistants, chatbots, recommendations, reviews has made the shopping experience more pleasant for the consumers by saving the time, widely open and convenient options and certainly enhanced the shopping intentions in buying grocery online and also suggest to develop the more AI technology oriented application to enhance the consumer base on online platform.

ISSN: 2350-1278
Peer Reviewed & Refereed Journal (IF: 7.9)
Journal Website www.nrjitis.in

- **(Yadav & Sharma, 2022)**The research focuses on the changed and impulsive consumer buying behavior after COVID 19, considering the generation born between 1997-2012. After the COVID period the online buying trend with the with the help of AI tools has become the more convenient and easy for consumer, on the other hand the influence impulse buying behavior by displaying time-sensitive offers, personalized deals, or visual stimuli has also increased. Studies suggest that while AI increases convenience, it also heightens the likelihood of unplanned purchases. Though the research do not talks about women consumers and grocery shopping but it indicates the frequent patterns that impulse buying can be both emotionally driven and situationally triggered, making it an important variable in understanding AI's psychological influence on shopping the products which are frequently used.
- **(Aggrawal, 2023)**Artificial intelligence is being considered as a revolution in every field so as in online shopping. Author describes AI as an important essential tool for grocery consumer and retailer both. It not only opens up the all time buying options for consumer, rather helps retailer also to manage their stock and minimize the overheads and maximize the profit. The chat bots, available visual and voice assistant inclined consumer to shop with more ease. Fair prices, timely addressed issues and queries and prompt logistics and delivery services motivates consumer towards online grocery shopping and many a times it encourages impulse buying habits. Article throw the light on the other benefits like fair consumer reviews, ratings, brand availability on online platforms, price comparison, order tracking and return policies.

(Manoranjan & Mahsweri, 2024) The article represents the working women buying behavior or Banglore region, the high tech city of India. The structured survey reveals that online shopping applications released half of their burdon of house hold shopping including grocery and food shopping. Working Women not only adapting online shopping platforms for convenience rather income, lifestyle, and mindset affect their choices. It is recommended that online merchandisers to make their strategies and presence more effective and fruitful for their potential women shoppers.

(Basha & Shyam, 2024) The mixed methods to accomplish the objective of investigating the impact of AI on grocery shopping finds that AI features boost the consumer engagement and sales through the online mediums. Though consumer responses vary based on their demographic state. Trust, data privacy and transparency issues are also addressed in the study and it suggests the more actionable insights for E. shopping platform to maintain consumer trust.

(Srinivasan, Wani, & Deshpande, 2021) Online grocery shopping is a quickly adapted and emerging a positive shopping experience in comparison to traditional shopping. The objective was to explore more, the impact of online grocery shopping on consumer and its pros and cons. Consumer tend to choose online shopping platform in order to save time, to get lower prices, cashless transaction, they find it more convenient. The online platforms more or less eliminated the dependency of physical disable people on others to buy for themselves. Study reveals the challenges faced by online platform in broader familiarity and adoption universally but also poised for wider adoption as first choice in near future.

(Maish, 2016) Story on Hybrid grocery delivery platform based in Indore spot the light on some interesting facts on the consumer buying behavior of the city. Encouraging consumer towards online platform in any two tier cities like Vadodra as due to fast growing cities and competitors like Big Basket and Grofers, where consumers when come to contact first time

ISSN: 2350-1278
Peer Reviewed & Refereed Journal (IF: 7.9)
Journal Website www.nrjitis.in

with such modes, it is really hard to keeping and building the consumer trust in relatively new online grocery concept. The another big concern in negative mindset of the consumer in delay in expanding home delivery scope in smart cities. The Hyper local model company and consumer both finds economic platforms like whats app as their most effective tool for online shopping.

(Bajpai, Shitole, & Bajpai, 2023) In the digital era, Indian grocery retailers—ranging from organized chains to traditional kiranas—are actively embracing AI to modernize their operations. AI to modernize operations, this shift has improved operational efficiency and customer satisfaction, especially in the pandemic era. AI tools enhance customer experience, and improve efficiency. Across the board, manual processes like inventory tracking, pricing, and transactions are transitioning to software-driven systems with RFID and digital payments. Despite these broader trends, there's a notable gap in research exploring how women specifically engage with AI in grocery shopping, especially concerning personalization, digital awareness, and impulse purchasing behaviors. This work investigates these gendered dimensions to inform retailers and developers on tailoring AI features for better inclusivity and trust.

RESEARCH METHODOLOGY

1. Research Design

This research follows a descriptive and quantitative design. It seeks to explore the impact of Artificial Intelligence (AI) features—such as personalization, smart apps, and automated services—on women's grocery shopping behavior. The study focuses on analyzing patterns, preferences, and behavioral outcomes using a structured survey.

2. Sampling Design

The target population comprises women consumers engaged in grocery shopping through online or AI-enabled platforms. A stratified random sampling technique is used to ensure representation across age groups, professions, and socio-economic backgrounds.

Sample Size: 100 respondents Sampling Frame: Women from urban and semi-urban regions of Indore Sampling Technique: Stratified Random Sampling

3. Data Collection Method

Primary data is collected using a structured questionnaire. The survey is distributed online via Google Forms and shared across email and social platforms. Respondents were screened to ensure they had experience using AI-based grocery services (e.g., Amazon Fresh, BigBasket, Blinkit, etc.).

Secondary data is collected from various research papers and articles available to know the researches done in this context.

4. Research Instrument

The structured questionnaire includes both demographic and behavioral questions. A 5-point Likert scale is used to measure agreement with AI-related features such as trust, personalization, convenience, and impulse buying.

ISSN: 2350-1278
Peer Reviewed & Refereed Journal (IF: 7.9)
Journal Website www.nrjitis.in

5. Variables Studied

Independent Variables:

- AI Personalization
- Convenience
- Trust in AI
- Digital Literacy

Dependent Variables:

- Purchase Frequency
- Brand Loyalty
- Impulse Buying
- Shopping Satisfaction

6. Data Analysis Tools &Statistical Tests

The following statistical tools are applied:

- Descriptive Statistics: Mean, Standard Deviation
- Reliability Test: Cronbach's Alpha to check internal consistency of Likert scale items
- Correlation Analysis: Pearson's Correlation to determine relationships among variables
- Regression Analysis: To test the influence of AI features on purchase behavior
- ANOVA: To test differences in behavior across age and income groups

Income(PA)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-50000	57	57.6	57.6	57.6
	50001-100000	15	15.2	15.2	72.7
	100001-300000	10	10.1	10.1	82.8
	300001-500000	10	10.1	10.1	92.9
	500001above	7	7.1	7.1	100
	Total	99	100	100	

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	15-25	31	31.3	31.3	31.3
	26-35	26	26.3	26.3	57.6

	36-45	26	26.3	26.3	83.8
	46-55	15	15.2	15.2	99
	55and above	1	1	1	100
	Total	99	100	100	

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Age	99	1	5	2.28	1.098
Frequecy	99	1	5	3.31	1.226
Awareness	99	1	3	1.35	0.594
ValidN(listwise)	99				

One-Sample Test

	Test Value= 0					
	t	df	Sig.(2-tailed)	Mean Difference	95%ConfidenceIntervaloftheDifference	
					Lower	Upper
Preference	28.03	98	0	1.313	1.22	1.41
Income(PA)	14.667	98	0	1.939	1.68	2.2

Correlations			
		Income(PA)	Preference
Income(PA)	Pearson Correlation	1	0.015
	Sig.(2-tailed)		0.886
	N	99	99
Preference	Pearson Correlation	0.015	1
	Sig.(2-tailed)	0.886	
	N	99	99

ISSN: 2350-1278
Peer Reviewed & Refereed Journal (IF: 7.9)
Journal Website www.nrjitis.in

ANOVA a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.576	3	1.525	1.277	.287b
	Residual	113.505	95	1.195		
	Total	118.081	98			

a. Dependent Variable: Age

b.Predictors:(Constant),Incomeeffect,recommendationonperception,TrustinAIRecommendation

Coefficients a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.658	0.469		3.534	0.001
	Trust in AI Recommendation	0.014	0.175	0.01		0.935
	Recommendation on perception	0.069	0.112	0.062	0.616	0.54
	Income effect	0.251	0.162	0.188	1.549	0.125

a. Dependent Variable: Age

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
Age*influence on buying behaviour	99	100.00%	0	0.00%	99	100.00%
Occupation*influence on buying behaviour	99	100.00%	0	0.00%	99	100.00%
Age*Influence on frequency	99	100.00%	0	0.00%	99	100.00%
Occupation*Influence on frequency	99	100.00%	0	0.00%	99	100.00%

ISSN: 2350-1278
Peer Reviewed & Refereed Journal (IF: 7.9)
Journal Website www.nrjitis.in

7. Justification For Tests

- Cronbach's Alpha ensures the reliability of the multi-item scales used.
- Correlation and regression help understand strength and direction of relationships.
- ANOVA is suitable for comparing multiple demographic groups simultaneously.

8. Limitations

- The sample is limited to urban and semi-urban women with internet access.
- Self-reported data maybe subject to social desirability bias.
- Rapid changes in AI tools may impact long-term generalization.

9. Expected Impact &Practical Implications

This study aims to offer insights into how AI technologies influence women's grocery shopping behavior. The results will help:

- Retailers enhance AI personalization for improved consumer engagement in exploring and buying their product.
- AI developers design inclusive tools based on gender-sensitive needs.
- Policymakers understand digital adoption patterns among women.

By examining behavioral shifts and demographic responses, this research contributes to building more customer-centric, AI-enabled shopping environments.

Summary &Research Gap

Collectively, AI in grocery retail drives personalization, efficiency, and consumer satisfaction, while also raising critical issues of trust, privacy, and digital literacy. Although general consumer insights are well- documented, there's an otable lack of focus on women's specific interactions with AI in grocery contexts—even in the fast growing Indore. However, specific research focusing on **women's interaction with AI in grocery shopping** remains limited. By investigating variables such as personalization, digital awareness, and impulse buying through a gendered lens, this study seeks to bridge this gap and offer practical insights for AI developers and retailers aiming for inclusivity and engagement.

REFERENCES:

1. Aggrawal, D. (2023). Exploring the Role of AI for Online Grocery Shopping through Enhancing Personalized Recommendations and Customer Segmentation. *Technoarete Transactions on Advances in Computer Applications · , 2* (3), 1-4.
2. Bajpai,A.R.,Shitole,M.V.,&Bajpai,D.A.(2023).ASTUDYONTHEIMPACTOFARTIFICIAL
3. INTELLIGENCEON.*TheOnlineJournalofDistanceEducationande-Learning,11*(2),1914-1923.
4. Basha,A.,&Shyam,R.(2024).ASTUDYONEFFECTOFARTIFICIALINTELLIGENCE ONCONSUMERBUYING BEHAVIOUR IN ONLINE GROCERY SHOPPING WITH SPECIAL REFERENCE TO. *NIU International Journal of*

ISSN: 2350-1278
Peer Reviewed & Refereed Journal (IF: 7.9)
Journal Website www.nrjitis.in

5. *HumanRights,11*(II),75-86.

6. Bhatt,P.,&Singh,A.K.(2024).ImpactofAIonConsumers'PurchaseIntentionTowardsOnlineGrocery Shopping in India. *Journal of Reliability and Statistical Studies , 17* (2).

7. Maish,M.(2016,February26). *Indore-based Shopit Daily aims to be the Uber of online grocery delivery*. Retrieved from Yourstory: https://yourstory.com/2016/02/shopitdaily

8. Manoranjan, H., & Mahsweri, V. (2024). The role of shopping apps and their impact on the online purchasing behavior patterns of working women in Bangalore. *Iternational Journal of Networking and Virtual Organizations , 31* (2).

9. Singh, S., Nagar, N., Bala, S., & Karishma. (2024). Impact of AI on Customers Purchasing Intention Towards Online Grocery Shopping: A Case Study of Delhi/NCR,India. *Journal of Informatics Education and Research , 2* (4), 2306-2313.

10. Srinivasan,S.,Wani,P.S.,& Deshpande,C.(2021,7).A Study on Consumer Preference for Online Grocery Shopping. *Atithya: A Journal of Hospitality* , 28-38.

11. Yadav,A.,&Sharma,S.(2022).ACONCEPTUALPERSPECTIVEOFONLINEIMPULSIVEBUYINGBEHAVIOR OF GEN Z: ROLE OF CUSTOMERS' EMOTIONS AND TRAITS IN THE NEW NORMAL ERA. *Prestige*

12. *InternationalJournalofManagement&IT-Sanchayan,11*(2),18-36.