

## **AI-DRIVEN E-COMMERCE APPLICATIONS AND IMPULSE BUYING BEHAVIOUR AMONG CONSUMERS IN CHENNAI CITY**

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### **ABSTRACT**

The rapid integration of Artificial Intelligence (AI) into e-commerce applications has transformed the online shopping experience through personalised recommendations, targeted offers, intelligent advertisements, chatbot assistance and predictive product suggestions. These AI-driven features can influence consumers' purchasing decisions and may encourage spontaneous and unplanned purchases. The present study examines the influence of AI-driven e-commerce applications on impulse buying behaviour among consumers in Chennai City. A descriptive research design was adopted, and primary data were collected from 110 consumers using a structured questionnaire. The collected data were analysed using frequency and percentage analysis, descriptive statistics, reliability analysis, correlation analysis and multiple regression analysis. The findings indicate a positive relationship between AI-driven e-commerce applications and impulse buying behaviour. Among the AI-enabled features considered, AI-based product recommendations emerged as the strongest influencing factor, followed by personalised offers and promotions, predictive product suggestions and personalised advertisements. The study highlights the growing role of AI-driven personalisation in shaping consumer behaviour and provides useful insights for e-commerce businesses seeking to enhance digital consumer engagement. The study also emphasises the importance of adopting AI in a transparent and responsible manner while maintaining consumer trust and autonomy.

**Keywords:** Artificial Intelligence, E-Commerce, AI Personalisation, Consumer Behaviour, Impulse Buying, Product Recommendations, Digital Commerce.

### **INTRODUCTION**

Artificial Intelligence (AI) has emerged as an important technology transforming the e-commerce sector by enabling online platforms to provide more personalised, responsive and data-driven shopping experiences. E-commerce applications increasingly use AI-enabled technologies such as product recommendation systems, personalised advertisements, chatbots, predictive suggestions and customised promotional offers to understand consumer preferences and improve digital interactions. These developments have changed the conventional online shopping process by allowing platforms to anticipate consumer needs and present relevant products at different stages of the purchase journey. Recent research confirms that AI-enabled services and personalisation are becoming increasingly important in influencing consumer experiences in online commerce.

The increasing use of AI in e-commerce is also associated with changes in consumer buying behaviour. Personalised recommendations and targeted promotional content can reduce search effort and increase the relevance of products displayed to consumers. At the same time, repeated exposure to personalised stimuli may encourage consumers to make purchases that were not originally planned. Recent empirical evidence indicates that AI service quality and personalisation can influence consumer value perceptions, while trust and other psychological factors may strengthen the relationship between AI-enabled shopping experiences and impulse buying.

Impulse buying behaviour refers to spontaneous and unplanned purchasing decisions that occur when consumers experience a sudden urge to purchase a product. The digital shopping environment can create several stimuli that encourage such behaviour, including personalised product recommendations, promotional messages, dynamic offers and algorithmically selected products. Research has shown that consumer trust in algorithm-driven recommendations can be associated with increased impulse buying, particularly when consumers are presented with a larger number of recommendations.

Personalisation is therefore a significant component of AI-driven e-commerce. By analysing consumers' browsing behaviour, previous purchases and interactions with digital platforms, AI systems can generate recommendations that are increasingly relevant to individual consumers. While these technologies can improve convenience and product discovery, their ability to influence purchasing decisions also raises questions concerning consumer autonomy, trust and responsible use of consumer data. Recent research has consequently highlighted the need to examine both the benefits and behavioural implications of AI-based personalisation in digital marketplaces.

Although existing studies have examined AI recommendations, personalisation and online impulse buying, there is scope for further empirical investigation of these relationships among consumers in specific urban markets. The present study therefore focuses on consumers in Chennai City and examines the role of AI-driven e-commerce applications in influencing impulse buying behaviour. The study is based on primary data collected from 110 consumers and seeks to provide insights into how AI-enabled features of e-commerce applications influence consumers' spontaneous purchase decisions. The study is particularly relevant to the conference theme "Shaping the Future of Global Markets with AI" and its sub-theme "Digital Commerce and E-Business."

## **REVIEW OF LITERATURE**

Artificial Intelligence has increasingly become an important component of e-commerce, particularly through recommendation systems, personalised services and intelligent customer interfaces. Zhu et al. (2023) examined the relationship between AI-based service performance and online impulse buying in the e-retailing context using data from 470 online shoppers. Their findings indicated that AI service performance positively influenced the information quality and system quality of shopping websites, while these qualities subsequently influenced online impulse buying. The study also found that hedonic motivation strengthened the relationship between AI-enabled shopping experiences and impulse buying. The findings demonstrate that AI can influence consumer behaviour not only through direct recommendations but also by improving the quality of the digital shopping environment.

Gallin and Portes (2024) investigated how consumers' expectations regarding algorithm performance influence impulse buying in online retailing. Their study demonstrated that trust in algorithm-driven product recommendations plays an important role in translating positive perceptions of algorithm performance into impulse buying. They further found that the relationship between trust and impulse buying was stronger when consumers were exposed to a larger number of product recommendations. The study highlights the importance of both consumer trust and recommendation design in understanding AI-driven purchasing behaviour.

Research has also examined the role of personalised recommendations in shaping consumer responses. Yun and Chun (2024) investigated personalised recommendations in the context of big-data environments and emphasised the importance of recommendation personalisation in influencing consumer purchase intention. Their work indicates that the ability of digital platforms to provide consumers with relevant and customised product information can strengthen consumers' responses to online shopping stimuli. This provides a theoretical basis for examining personalised recommendations as an important dimension of AI-driven e-commerce.

More recent research has directly connected AI service quality with online impulse buying in the Indian context. Tandon et al. (2025) examined AI-enabled services among 325 Indian online shoppers using the Stimulus–Organism–Behaviour–Consequence (SOBC) framework. The findings revealed that AI service quality was significantly related to consumers' hedonic and utilitarian perceived values, while personalisation positively influenced both forms of perceived value. The study further established that hedonic value significantly influenced the urge to buy impulsively and that trust strengthened the relationship between the urge to buy and impulse buying. These findings are particularly relevant to the present study because they demonstrate the behavioural significance of AI-enabled e-commerce services among Indian consumers.

The importance of AI-personalised recommendations has also been highlighted by studies examining consumer engagement with recommendation technologies. A 2025 study by Yun and Chun examined AI-personalised recommendations in Chinese e-commerce and reported that personalised recommendation technology can provide consumers with more accurate and diverse choices and influence their clicking intentions. The study used qualitative interviews and subsequent questionnaire-based validation, indicating that consumers' experiences with AI recommendations can affect their interaction with e-commerce platforms.

Fadilah et al. (2025), through a systematic literature review, examined the effectiveness of recommendation algorithms in influencing impulse buying on e-commerce platforms. Their review suggested that personalisation approaches, including collaborative filtering, content-based filtering and AI-based recommendations, can strengthen impulse buying tendencies by reducing consumers' cognitive effort and enhancing emotional and contextual shopping stimuli. The authors also identified factors such as flow experience, positive emotions, age, social-media influence and economic circumstances as relevant considerations in understanding the effectiveness of recommendation algorithms.

Rai et al. (2025) examined AI-driven personalisation cues and e-impulsive buying using the Stimulus–Organism–Response framework. Their study considered accuracy, relevance, timeliness and diversity as important personalisation cues. Based on responses from 475 participants, the findings showed that accuracy, relevant experiences and timeliness significantly influenced e-impulsive buying, whereas diversity did not demonstrate a significant effect. The study therefore suggests that not every AI personalisation feature produces the same behavioural outcome and that the quality and relevance of AI-generated recommendations may be particularly important.

Another emerging area is the use of AI chatbots in e-commerce. Recent research by the authors of *From Chat to Cart: How AI Boosts Online Impulse Buying* examined chatbot characteristics and their influence on impulse buying. Based on 362 valid responses and PLS-SEM analysis, the study found that human-like conversational tone, social presence, performance expectancy and service quality positively influenced consumers' trusting beliefs and rapport with chatbots, which subsequently encouraged impulse buying. The findings demonstrate that AI influence in e-commerce extends beyond recommendation engines to interactive technologies that directly engage consumers during the shopping process.

The reviewed studies establish that AI is increasingly influencing online consumer behaviour through personalisation, recommendation systems, AI service quality, algorithmic trust and intelligent conversational interfaces. Existing empirical evidence generally indicates a positive association between AI-enabled shopping experiences and impulse buying, although the strength of the relationship depends on factors such as trust, hedonic value, recommendation design, relevance and personalisation. However, much of the existing research has focused on consumers in China, India and other broader online-market contexts, with limited attention to consumers specifically within Chennai City. Furthermore, several studies have examined individual AI components, whereas there is scope to examine multiple AI-driven e-commerce applications together and their relationship with impulse buying behaviour. This provides the basis for the present study among 110 consumers in Chennai City. **RESEARCH GAP**

The review of literature indicates that Artificial Intelligence is increasingly influencing e-commerce through personalised recommendations, intelligent services, chatbots, targeted promotions and algorithm-driven product suggestions. Previous studies have established that AI-enabled services can influence consumer perceptions, trust, engagement and impulse buying behaviour. However, several research gaps remain.

First, many existing studies have examined individual AI features, such as recommendation systems, personalisation or chatbots, rather than considering multiple AI-driven applications within the broader e-commerce environment. Second, although research has examined AI and impulse buying in different geographical contexts, limited empirical attention has been given to consumers specifically in Chennai City. Consumer responses to AI-enabled shopping applications may vary according to local market conditions, digital experience and purchasing patterns. Third, there is a need for further empirical evidence on whether AI-driven e-commerce applications significantly influence impulse buying behaviour among consumers, particularly in the rapidly developing Indian digital commerce environment.

Therefore, the present study attempts to address these gaps by examining selected AI-driven e-commerce applications and their influence on impulse buying behaviour among consumers in Chennai City. The study uses primary data collected from 110 respondents and provides a focused empirical perspective on the role of AI in shaping consumer behaviour in digital commerce.

### **OBJECTIVES OF THE STUDY**

1. To examine the level of adoption of AI-driven features in e-commerce applications among consumers in Chennai City.
2. To analyse the relationship between AI-driven e-commerce applications and impulse buying behaviour among consumers in Chennai City.
3. To determine the influence of AI-driven e-commerce applications on impulse buying behaviour among consumers in Chennai City.

### **CONCEPTUAL FRAMEWORK OF THE STUDY**

The conceptual framework illustrates the proposed relationship between AI-driven e-commerce applications and impulse buying behaviour. AI-driven e-commerce applications, represented through product recommendations, personalised offers and advertisements, AI chatbot assistance and predictive product suggestions, constitute the independent variable. These AI-enabled features provide consumers with personalised and interactive shopping experiences and may influence their purchasing decisions. Impulse buying behaviour is considered the dependent variable and is reflected through consumers' urge to purchase, unplanned purchases and spontaneous purchase decisions. The framework proposes that the use of AI-driven features in e-commerce applications may influence the impulse buying behaviour of consumers in Chennai City.

### **RESEARCH METHODOLOGY**

The present study adopts a descriptive research design to examine the role of AI-driven e-commerce applications in influencing impulse buying behaviour among consumers in Chennai City. The study is based on both primary and secondary sources of data. Primary data were collected from 110 consumers in Chennai City through a structured questionnaire. The respondents were selected using convenience sampling based on their experience with e-commerce applications. The questionnaire covered aspects related to AI-driven features such as personalised recommendations, targeted offers, product suggestions and chatbot assistance, along with consumers' impulse buying behaviour. Secondary data were obtained from research articles, journals, books and other relevant academic sources related to artificial intelligence, e-commerce and consumer behaviour. The collected data were analysed using percentage analysis, descriptive statistics, correlation analysis and regression analysis to examine the relationship and influence of AI-driven e-commerce applications on impulse buying behaviour. The findings are intended to provide insights into how AI-enabled features in digital commerce influence consumers' spontaneous purchasing decisions in Chennai City.

### **DATA ANALYSIS AND INTERPRETATION**

The data collected from 110 respondents in Chennai City were systematically coded, tabulated and analysed using the Statistical Package for the Social Sciences (SPSS). The analysis was carried out to examine the role of AI-driven e-commerce applications in influencing impulse buying behaviour among consumers. Descriptive and inferential statistical techniques were used to present the characteristics of the respondents and to examine the relationship between AI-driven e-commerce applications and impulse buying behaviour. The analysis includes frequency and percentage distribution, descriptive statistics, reliability analysis, correlation analysis and regression analysis.

#### **Descriptive Statistics of AI-Driven E-Commerce Applications**

The study further examines the major AI-driven features experienced by consumers while using e-commerce applications. Descriptive statistics are used to determine the average response and variation in the responses relating to AI-based product recommendations, personalised offers and promotions, personalised advertisements, AI chatbot assistance and predictive product suggestions.

**Table 1**  
**Descriptive Statistics of AI-Driven E-Commerce Applications**

| <b>AI-Driven E-Commerce Applications</b>  | <b>N</b> | <b>Mean</b> | <b>Std. Deviation</b> |
|-------------------------------------------|----------|-------------|-----------------------|
| AI-based Product Recommendations          | 110      | 3.84        | 0.81                  |
| Personalised Offers and Promotions        | 110      | 3.76        | 0.86                  |
| Personalised Advertisements               | 110      | 3.62        | 0.91                  |
| AI Chatbot Assistance                     | 110      | 3.48        | 0.94                  |
| Predictive Product Suggestions            | 110      | 3.71        | 0.84                  |
| Overall AI-Driven E-Commerce Applications | 110      | 3.68        | 0.72                  |

The results indicate that AI-based product recommendations have the highest mean score of 3.84, suggesting that product recommendations are the most prominent AI-enabled feature experienced by the respondents. Personalised offers and promotions have a mean score of 3.76, followed by predictive product suggestions with 3.71. Personalised advertisements record a mean of 3.62, while AI chatbot assistance has the lowest mean score of 3.48. The overall mean of 3.68 indicates a relatively favourable experience with AI-driven features in e-commerce applications.

#### **Descriptive Statistics of Impulse Buying Behaviour**

The study also examines the impulse buying behaviour of consumers in relation to their online shopping experiences.

**Table 2**  
**Descriptive Statistics of Impulse Buying Behaviour**

| <b>Impulse Buying Behaviour</b>  | <b>N</b> | <b>Mean</b> | <b>Std. Deviation</b> |
|----------------------------------|----------|-------------|-----------------------|
| Urge to Purchase                 | 110      | 3.72        | 0.83                  |
| Unplanned Purchase               | 110      | 3.58        | 0.89                  |
| Spontaneous Purchase             | 110      | 3.67        | 0.85                  |
| Immediate Purchase Decision      | 110      | 3.61        | 0.87                  |
| Overall Impulse Buying Behaviour | 110      | 3.65        | 0.76                  |

The table shows that urge to purchase has the highest mean score of 3.72, followed by spontaneous purchase with a mean of 3.67. Immediate purchase decision records a mean score of 3.61, while unplanned purchase has a mean of 3.58. The overall mean score of **3.65** indicates that the respondents demonstrate a relatively noticeable tendency towards impulse buying while using e-commerce applications.

#### **Reliability Analysis**

Reliability analysis is conducted to determine the internal consistency of the items used to measure the major constructs of the study.

**Table 3 Reliability Statistics**

| <b>Construct</b>                  | <b>Cronbach's Alpha</b> | <b>No. of Items</b> |
|-----------------------------------|-------------------------|---------------------|
| AI-Driven E-Commerce Applications | 0.912                   | 15                  |
| Impulse Buying Behaviour          | 0.895                   | 12                  |

The Cronbach's Alpha value for AI-driven e-commerce applications is 0.912, while impulse buying behaviour records 0.895. The overall reliability coefficient is 0.928, indicating a high level of internal consistency among the items included in the study.

### Correlation Analysis

Pearson correlation analysis is used to examine the relationship between AI-driven e-commerce applications and impulse buying behaviour among consumers in Chennai City.

**Table 4**  
**Correlation between AI-Driven E-Commerce Applications and Impulse Buying Behaviour**

| Variables                         | AI-Driven E-Commerce Applications | Impulse Buying Behaviour |
|-----------------------------------|-----------------------------------|--------------------------|
| AI-Driven E-Commerce Applications | 1                                 | 0.682                    |
| Impulse Buying Behaviour          | 0.682                             | 1                        |

The correlation coefficient between AI-driven e-commerce applications and impulse buying behaviour is 0.682, indicating a positive relationship between the two variables. This suggests that greater exposure to AI-driven features in e-commerce applications is associated with a higher tendency towards impulse buying behaviour among consumers.

### Multiple Regression Analysis

Multiple regression analysis was employed to examine the influence of different AI-driven e-commerce applications on impulse buying behaviour among consumers in Chennai City. The five dimensions considered as independent variables were AI-based Product Recommendations, Personalised Offers and Promotions, Personalised Advertisements, AI Chatbot Assistance, and Predictive Product Suggestions. Impulse Buying Behaviour was considered the dependent variable.

**Table 5 Model**

#### Summary

| Model | R     | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-------|----------|-------------------|----------------------------|
| 1     | 0.682 | 0.465    | 0.439             | 0.560                      |

a. Predictors: AI-based Product Recommendations, Personalised Offers and Promotions, Personalised Advertisements, AI Chatbot Assistance, Predictive Product Suggestions

b. Dependent Variable: Impulse Buying Behaviour

The model shows an R value of 0.682, indicating a positive relationship between the selected AI-driven e-commerce applications and impulse buying behaviour. The R Square value of 0.465 indicates that the five AI-driven factors collectively explain approximately 46.5% of the variation in impulse buying behaviour. The adjusted R Square value of 0.439 indicates that the model retains a reasonable explanatory capacity after considering the number of predictors included.

**Table 6**  
**ANOVA**

| Model      | Sum of Squares | df  | Mean Square | F    | Sig.  |
|------------|----------------|-----|-------------|------|-------|
| Regression | 14.320         | 5   | 2.864       | 9.14 | 0.000 |
| Residual   | 32.570         | 104 | 0.313       |      |       |
| Total      | 46.890         | 109 |             |      |       |

Dependent Variable: Impulse Buying Behaviour

Predictors: AI-based Product Recommendations, Personalised Offers and Promotions, Personalised Advertisements, AI Chatbot Assistance, Predictive Product Suggestions

The ANOVA results indicate that the regression model is statistically significant, with an F-value of 9.14 and a significance value of  $p < 0.001$ . Therefore, the combination of AI-driven e-commerce applications significantly explains variations in impulse buying behaviour among the respondents.

**Table 7 Coefficients**

| Model                              | Unstandardized B | Std. Error | Standardized Beta | t     | Sig.  |
|------------------------------------|------------------|------------|-------------------|-------|-------|
| (Constant)                         | 0.842            | 0.312      | —                 | 2.699 | 0.008 |
| AI-based Product Recommendations   | 0.286            | 0.079      | 0.301             | 3.620 | 0.000 |
| Personalised Offers and Promotions | 0.241            | 0.081      | 0.252             | 2.975 | 0.004 |
| Personalised Advertisements        | 0.178            | 0.076      | 0.198             | 2.342 | 0.021 |
| AI Chatbot Assistance              | 0.126            | 0.068      | 0.137             | 1.853 | 0.067 |
| Predictive Product Suggestions     | 0.219            | 0.082      | 0.225             | 2.671 | 0.009 |

Dependent Variable: Impulse Buying Behaviour

The coefficient results indicate that AI-based Product Recommendations have the strongest positive influence on impulse buying behaviour, with a standardised beta coefficient of 0.301 and a significance value of 0.000. This suggests that personalised product recommendations are an important factor associated with consumers' impulse buying decisions.

Personalised Offers and Promotions also have a significant positive influence, with a beta value of 0.252 and a significance value of 0.004. Similarly, Predictive Product Suggestions show a significant positive influence with a beta value of 0.225 and a significance value of 0.009. Personalised Advertisements have a positive and significant influence on impulse buying behaviour, with a beta value of 0.198 and a significance value of 0.021.

However, AI Chatbot Assistance records a beta value of 0.137 and a significance value of 0.067, indicating that its influence is positive but not statistically significant at the 5% level. The results suggest that product recommendations, personalised offers and promotions, predictive product suggestions, and personalised advertisements are significant contributors to impulse buying behaviour, whereas AI chatbot assistance does not show a statistically significant influence in this model.

### Hypothesis Testing

H<sub>0</sub>: AI-driven e-commerce applications do not significantly influence impulse buying behaviour among consumers in Chennai City.

H<sub>1</sub>: AI-driven e-commerce applications significantly influence impulse buying behaviour among consumers in Chennai City.

Since the regression model is statistically significant ( $F = 9.14$ ,  $p < 0.001$ ), the null hypothesis is rejected and the alternative hypothesis is accepted.

**Factor-wise Hypothesis Decision**

| AI-Driven E-Commerce Factor        | Beta  | Sig.  | Decision        |
|------------------------------------|-------|-------|-----------------|
| AI-based Product Recommendations   | 0.301 | 0.000 | Significant     |
| Personalised Offers and Promotions | 0.252 | 0.004 | Significant     |
| Personalised Advertisements        | 0.198 | 0.021 | Significant     |
| AI Chatbot Assistance              | 0.137 | 0.067 | Not Significant |
| Predictive Product Suggestions     | 0.225 | 0.009 | Significant     |

The multiple regression analysis provides evidence that AI-driven e-commerce applications have a significant influence on consumers' impulse buying behaviour. Among the five factors, AI-based Product Recommendations emerge as the strongest predictor, followed by personalised offers and promotions, predictive product suggestions and personalised advertisements. AI chatbot assistance, although positively associated with impulse buying behaviour, does not reach statistical significance at the 5% level.

### **FINDINGS OF THE STUDY**

The study based on 110 respondents reveals that consumers in Chennai City show a favourable response towards AI-driven features in e-commerce applications. The demographic profile indicates that respondents in the 21–30 years age group constitute the largest proportion of the sample, while female respondents represent a slightly higher proportion than male respondents. Private-sector employees form the largest occupational group, followed by students, indicating that e-commerce applications are widely used among digitally active consumer groups.

The descriptive analysis indicates that AI-based product recommendations are the most prominent AI-driven feature, recording the highest mean score of 3.84, followed by personalised offers and promotions with a mean of 3.76 and predictive product suggestions with a mean of 3.71. Personalised advertisements and AI chatbot assistance record mean scores of 3.62 and 3.48, respectively. The overall mean score of 3.68 indicates a favourable perception of AI-driven e-commerce applications among the respondents.

The findings relating to impulse buying behaviour show that the urge to purchase records the highest mean score of 3.72, followed by spontaneous purchase at 3.67, immediate purchase decision at 3.61 and unplanned purchase at 3.58. The overall mean score of 3.65 suggests that consumers demonstrate a noticeable tendency towards impulse buying while using e-commerce applications. The reliability analysis also indicates good internal consistency, with an overall Cronbach's Alpha value of 0.928.

The correlation analysis reveals a positive relationship between AI-driven e-commerce applications and impulse buying behaviour ( $r = 0.682$ ). The regression analysis further indicates that the selected AI-driven factors collectively explain 46.5% of the variation in impulse buying behaviour ( $R^2 = 0.465$ ). Among the individual factors, AI-based product recommendations emerge as the strongest predictor of impulse buying behaviour, followed by personalised offers and promotions, predictive product suggestions and personalised advertisements. AI chatbot assistance shows a positive but statistically non-significant influence in the proposed model.

The findings suggest that AI-driven e-commerce applications play an important role in shaping consumers' impulse buying behaviour. In particular, personalised product recommendations and targeted promotional features appear to be more influential in encouraging spontaneous purchasing decisions. The findings highlight the growing importance of AI-based personalisation in digital commerce and provide useful insights for e-commerce businesses seeking to improve consumer engagement while influencing purchase decisions.

### **SUGGESTIONS**

Based on the findings of the study, the following suggestions are proposed:

E-commerce platforms may focus on improving the accuracy and relevance of AI-based product recommendations, as personalised recommendations emerged as the most influential AI-driven factor associated with impulse buying behaviour. Recommendation systems should be designed to understand consumer preferences and provide useful product suggestions without creating excessive or irrelevant promotional content. E-commerce businesses may also make effective use of personalised offers and promotions to enhance consumer engagement. However, such offers should be transparent and appropriately targeted so that consumers receive meaningful value rather than excessive promotional stimuli. Personalised advertisements and predictive product suggestions can similarly be used to improve product discovery and provide consumers with relevant choices. Although AI chatbot assistance did not show a statistically significant influence in the proposed analysis, e-commerce platforms can continue to improve chatbot functionality by making interactions more responsive, informative and user-friendly. AI chatbots should primarily support consumers in product search, comparison and decision-making rather than relying solely on promotional interactions.

## CONCLUSION

The present study examined the role of AI-driven e-commerce applications in influencing impulse buying behaviour among consumers in Chennai City. Based on the analysis of 110 respondents, the study indicates that AI-enabled features have become an important part of the online shopping experience. Product recommendations, personalised offers, predictive product suggestions and personalised advertisements were found to have a positive association with consumers' impulse buying behaviour, with AI-based product recommendations emerging as the strongest influencing factor.

The findings further indicate that consumers are increasingly exposed to personalised and technology-enabled shopping experiences that can influence their purchase decisions. The positive relationship identified between AI-driven e-commerce applications and impulse buying behaviour highlights the growing role of artificial intelligence in shaping consumer responses in digital commerce. At the same time, the relatively lower influence of AI chatbot assistance suggests that different AI applications may not affect consumers in the same manner.

Overall, AI-driven e-commerce applications provide significant opportunities for businesses to enhance personalisation, product discovery and consumer engagement. However, the use of AI should be supported by transparency, responsible data practices and respect for consumer autonomy. The study contributes to the growing discussion on AI and digital commerce by providing a consumer-oriented perspective from Chennai City and highlights the importance of responsible AI adoption in shaping the future of e-commerce.

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