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## Impact of Artificial Intelligence on Consumer Shopping Behaviour in Q-Commerce

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Received: 21 March 2026 Accepted & Reviewed: 25 March 2026, Published: 31 March 2026

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### Abstract

Q-commerce is new and expanding form of online shopping where products are delivered within a very short time usually 10-30 minutes. Q-commerce not only change how consumer shop but also re-shape supply chain models by combining artificial intelligence. As a result it bridges gap between traditional stores and online commerce creating hybrid model that offers both digital experience and physical speed. Introduction of Artificial intelligence in commerce Q-commerce (Q-commerce) has changed consumer expectations by making fast delivery. There are very little data on how AI -driven features like AI- enabled delivery tracking, personalized product recommendations, and convenience supporting tools effects consumer behaviour. A structure questionnaire with 5point Likert scale was used to gather primary data with a cronbach's Alpha score of 0.929, the is instrument shown excellent reliability. Multiple regression analysis was used to test main hypothesis related AI influence behaviour. Where one way ANOVA was used to examine whether age difference affect consumer response to AI.

The finding shows that AI plays important role in shopping consumer behaviour in Q-commerce. The various AI future studied, personalised the recommendation emerged as the strongest predictor of consumer satisfaction followed by the chart board services delivery tracking and overall convenience. The ANOVA rebuild there is no significant difference among age groups, suggesting the influence of AI consistent across demographics.

**Key words:** AI (Artificial intelligence), Q-commerce, Customer Behaviour, AI-driven Recommendations, chatbots, Customer satisfaction, Customer trust, Digital Convenience, Instant delivery services.

### Introduction

In the present digital era, technology has made every aspect of consumer life easier, particularly how consumers shop and make purchase decisions. Q-commerce is an emerging trend in e-commerce that focus on delivery essential goods such as groceries, personal care products, medicine etc to customers within minutes. The major drawbacks of Traditional e-commerce are long time delivery, limited personalization and weak customer support. whereas Q-commerce brought solution for drawbacks of traditional e-commerce by focusing on speed, convenience real time delivery tracking through AI technology. Artificial intelligence technology such as chat-bots,product recommendation and delivery tracking system play an important role in improving user experience and ensuring smooth order fulfilment these tools help companies understand consumer preference provide instance support. In recent years several Q-commerce platforms like zepto, Blinkit, and Insta-mart have revolutionized the Indian retail market by combining AI-driven solutions with ultrafast delivery models. There is limited academic research on how these technologies directly affect consumer shopping behaviour particularly in Indian context therefore, the study aims to Bridge-gap by examine the impact of AI on consumer behaviour in Q-commerce commerce platforms. The research explores how various air driven features such as recommendation, chatbot customer service and delivery tracking influence customer satisfaction trust and overall shopping experience.

## 1.2 Objectives of study

1. To understand the impact of AI driven product recommendation on consumers satisfaction in Q-commerce
2. To analyse the role of chat board customer service in shaping consumer trust and satisfaction
3. To analyse the effect of AI-powered delivery tracking system on consumer shopping behaviour.
4. To evaluate how AI enhances convenience and oral shopping experience in Q-commerce
5. To test the overall influence of AI on shopping decisions

**2. literature Review:** The rapidly blooming growth of artificial intelligence (AI) Digital technology has fundamentally altered the business environment. Traditional E-Commerce platform have progressed into Quick-commerce, offering customers quick delivery, high convenience services. A review of existing literature shows that AI has significant impact on consumer behaviour throw tools called recommendation system delivery tracking. But while the role of AI in E-Commerce has been deeply researched, but cue commerce contact remain unexplode. This chapter reviews a previous studies to established theoretical foundation for the present research identify the research gaps

**2.1 Artificial Intelligence and Consumer Behaviour** AI-driven technologies have converted the way consumers shop and interact with online platforms. Previous studies highlight that AI enhances personalization, convenience, and satisfaction by recommending products based on past purchase history and browsing behaviour (Smith & Brown, 2019). Similarly, chatbots provide instant customer support, thereby boost trust and engagement (Lee, 2020). These technologies help retailers better insights customer preferences and improve service efficiency. But excessive automation may reduce emotional connection and create dependency on algorithms, which could affect consumer decision-making

**2.2 Q-Commerce and Technological Transformation** Q-commerce and technological transformation: - Q-commerce defined rapid delivery of essential goods in 10 - 30 minutes. (Gerwal et al.,2023) Kyon commerce depends on small fulfillment centres (dark store) make sure ultra-fast delivery (chaterjee et al,2022). Q commerce depends on AI-driven logistic, demand for costing to reach consumer expectation. Companies like metaverse offers brand extension possibilities, accomplishing AI and Q-commerce plan of action by creating charming digital experience (Rauschnabel et al.,2022). Business which combines AI, Q-commerce can gain advantage in consumer acquisition, retention satisfaction.

## 2.3 International and Indian view

Internationally, platforms like Gopuff(US), Gorillas (Germany), and Zapp (UK) have introduced ultrasound delivery services (Fortune Business Insights, 2025).

In the fastest growing economy like India. Companies like Zepto and Blinkit have incorporated Q-commerce models to meet local demand emphasizing speed and customer satisfaction (Reuters, 2025).

**2.4 Consumer behaviour sense.** Customer prefers quick commerce for its time saving benefit even the prices are higher (careratings,2025). Security concerns exist, particularly regarding personal data collection yet they are out weighted by pre received value of rapid delivery (chatterjee et al.,2022)

**2.5 Research Gap** – “While previous studies have analysed AI in e-commerce and logistics, there is limited academic evidence on how AI-driven features — such as recommendations, chatbots, delivery tracking, and convenience — shape consumer shopping behaviour in Q-commerce. Existing research primarily focuses on operational efficiency and environmental impact rather than consumer perception . This gap stresses the need for the present study, which investigates the behavioural effects of AI adoption in Q-commerce through primary data.”

**3. Research Methodology Research Design:** “To study how AI affect consumer shopping behaviour in Q-commerce, this study uses a descriptive design.” **Sample size and Methodology:** Data collected from 60 respondents through stratified random sampling method. **Data collection:** A Google form survey with a Likert scale of 1 to 5. The data collection period for 40 days. **Study Tool:** Questionnaire format Demographic (age, gender, income etc) in section A, Section B-F aspects of AI (chatbots, tracking, recommendations, convenience) Cronbach's Alpha is approximately 0.929. **The study variables:** AI features (chatbots, tracking, recommendations, convenience) are examples of independent variables. The shopping habits of consumer are dependent variable.

**Hypotheses:** (General Hypotheses)

H<sub>0</sub>: Artificial Intelligence (AI) has no significant impact on consumer shopping behaviour in Q-commerce.

H<sub>1</sub>: Artificial Intelligence (AI) has a significant impact on consumer shopping behaviour in Q-commerce.

H<sub>02</sub>: There is no significant difference among different age groups in how AI influences shopping behaviour in Q-commerce.

H<sub>2</sub>: There is a significant difference among different age groups in how AI influences shopping behaviour in Q-commerce.

### Specific Hypotheses

H<sub>1</sub>: AI-driven product recommendations in Q-commerce influencing positively customer satisfaction.

H<sub>2</sub>: Customer satisfaction in Q-commerce is enhanced by chatbot-based customer support.

H<sub>3</sub>: Delivery tracking systems driven by AI boost consumer confidence in Q-commerce platforms.

H<sub>4</sub>: Q-commerce's application of AI enhance customers' total shopping experience and convenience.

Tools for analysis; **MS Excel** Statistical tests: **General Hypotheses Testing**

Multiple Regression Analysis to test whether AI (recommendations, chatbots, delivery tracking, convenience) significantly impacts consumer shopping behaviour.

- One-way ANOVA to test whether there is a significant difference among different age groups in how AI influences shopping behaviour.

### Specific Hypotheses Testing

Simple Regression (each IV separately):

- H<sub>1</sub>: AI-driven recommendations: customer satisfaction
- H<sub>2</sub>: Chatbots: customer satisfaction
- H<sub>3</sub>: AI-powered delivery tracking: consumer trust
- H<sub>4</sub>: AI-enabled convenience: consumer experience

(Each was tested by regressing the average of respective question items (IV) against the dependent variable.)

**4. Data analysis and interpretation:** The responses are coded and evaluated using MS EXCEL. The results are presented in form of descriptive statistics test and hypothesis testing with regression and ANOVA.

**4.1 Reliability Analysis** (Cronbach's alpha): As the Cronbach's alpha value is 0.929 (>0.7), the scale is considered highly reliable.

Hypothesis Testing

• General Hypothesis 1

H0: AI has no significant impact on consumer shopping behaviour.

H1: AI has significant impact on consumer shopping behaviour.

#### SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.9874646
R Square	0.9750864
Adjusted R Square	0.9732745
Standard Error	0.1544315
Observations	60

#### ANOVA

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>			
Regression	4	51.3383	12.8346	538.16	2.22E-43			
Residual	55	1.3117	0.02385					
Total	59	52.65						

  

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	0.0184648	0.077867	0.23713	0.8134	-0.13758	0.174513	-0.13758	0.174513
X Variable 1	0.3255946	0.027893	11.6728	2E-16	0.269695	0.381494	0.269695	0.381494
X Variable 2	0.299534	0.035462	8.44673	2E-11	0.228467	0.370601	0.228467	0.370601
X Variable 3	0.2855805	0.043896	6.50582	2E-08	0.197611	0.37355	0.197611	0.37355
X Variable 4	0.0711901	0.031445	2.26395	0.0275	0.008173	0.134207	0.008173	0.134207

The multi regression analysis was conducted to test the impact of Artificial Intelligence (AI) on consumer shopping behaviour in Q-commerce.

Interpretation: Since all four predictors have p-values less than 0.05, the null hypothesis (H<sub>0</sub>: AI has no significant impact on consumer shopping behaviour) is rejected. The findings shows that AI significantly influences consumer shopping behaviour in Q-commerce, with AI-driven recommendations growing as the strongest factor, followed by chatbot services, delivery tracking, and convenience.

#### General hypothesis 2

H20: There is no significant difference among different groups in how AI influence shopping behaviour.

H21: There is significant difference among different groups in how AI influence shopping behaviour.

## SUMMARY

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
21-25	34	119.5	3.514706	1.291444
25-35	20	58	2.9	1.173684
35-45	3	9.25	3.083333	0.083333
45-50	4	12	3	2

## ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	5.161588	3	1.720529	1.379632	0.25823	2.766438
Within Groups	71.08431	57	1.247093			
Total	76.2459	60				

**Interpretation:** the results show that the F-value is 1.38 with a corresponding p value of 0.258, which is greater than significance level of 0.05. This indicates that there is no statistically significant difference between the age groups in terms of the variable studied.

**Specific Hypotheses**

H<sub>01</sub>: AI-driven product recommendations in Q-commerce do not have a significant impact on customer satisfaction.

H<sub>1</sub>: AI-driven product recommendations in Q-commerce have a significant impact customer satisfaction.

## SUMMARY

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
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Within Groups	71.08431	57	1.247093			
Total	76.2459	60				

**Interpretation:** Since the predictors have p-values less than 0.05, the null hypothesis is rejected. (AI-driven product recommendations in Q-commerce do not have a significant effect on customer satisfaction.) is rejected. The findings indicate that AI-driven product recommendations in Q-commerce have a significant impact customer satisfaction.

H<sub>02</sub>: Chatbot-based customer service in Q-commerce does not significantly improve customer satisfaction.

H<sub>2</sub>: Chatbot-based customer service in Q-commerce significantly improves customer satisfaction.

Regression Statistics	
Multiple R	0.6590585
R Square	0.4343582
Adjusted R Square	0.4246057
Standard Error	0.8761503
Observations	60

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	34.18941763	34.189418	44.538	1.033E-08
Residual	58	44.52308237	0.7676394		
Total	59	78.7125			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	0.900312	0.373372581	2.4112966	0.0191	0.1529256	1.6476985	0.15292562	1.64769847
X Variable 1	0.6958793	0.104271748	6.6737086	1E-08	0.4871567	0.9046018	0.487156674	0.90460184

**Interpretation:** Since the predictors have p-values less than 0.05, the null hypothesis is rejected. (Chatbot-based customer service in Q-commerce does not significantly improve customer satisfaction) is rejected. The findings shows that Chatbot-based customer service in Q-commerce significantly improve customer satisfaction.

H<sub>03</sub>: AI-powered delivery tracking systems do not significantly improves customer trust in Q-commerce platforms.

H<sub>3</sub>: AI-powered delivery tracking systems improves customer trust in Q-commerce platforms.

☐ SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.6857811
R Square	0.4702957
Adjusted R Square	0.4611629
Standard Error	0.8478609
Observations	60

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	37.01815389	37.018154	51.495	1.484E-09
Residual	58	41.69434611	0.718868		
Total	59	78.7125			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	0.4795458	0.404641565	1.1851125	0.2408	-0.3304323	1.2895239	0.330432302	1.28952389
X Variable 1	0.7685097	0.107094357	7.176006	1E-09	0.5541371	0.9828824	0.5541371	0.98288239

**Interpretation:** Since the predictors have p-values less than 0.05, the null hypothesis is rejected. (AI-powered delivery tracking systems do not significantly enhance customer trust in Q-commerce platforms) is rejected. The findings shows that AI-powered delivery tracking systems significantly improves customer trust in Q-commerce platforms.

H<sub>04</sub>: The use of AI in Q-commerce does not significantly improve consumers' overall shopping convenience and experience.

H<sub>4</sub>: The use of AI in Q-commerce improves consumers' overall shopping convenience and experience.

#### SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.8244735
R Square	0.6797566
Adjusted R Square	0.6742351
Standard Error	0.6592467
Observations	60

  

ANOVA					Significance F			
	df	SS	MS	F				
Regression	1	53.50533762	53.505338	123.11	5.725E-16			
Residual	58	25.20716238	0.4346062					
Total	59	78.7125						

  

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-0.0488965	0.31142422	0.1570093	0.8758	-0.6722798	0.5744868	0.672279815	0.5744868
X Variable 1	0.9396174	0.084683826	11.095594	6E-16	0.7701043	1.1091305	0.770104292	1.10913048

**Interpretation:** Since the predictors have p-values less than 0.05, the null hypothesis is rejected. (The use of AI in Q-commerce does not significantly improve consumers' overall shopping convenience and experience.) is rejected. The findings show that the use of AI in Q-commerce significantly improve consumers' overall shopping convenience and experience.

## 5. Major findings

1. AI has impact on consumer shopping behaviour in Q-commerce. All the four features (recommendations, chatbots, delivery tracking, convenience) should statistically significant influence. Therefore, the null hypothesis was rejected.
2. No significant difference among the age groups in response to ai features. The means AI influence is universal across demographics. Therefore, alternative hypothesis was rejected.
3. Personalised product recommendations are the strong key indicators of consumer satisfaction. Among the all-tools product recommendation had productive on consumer satisfaction and shopping decisions.
4. Chatbot-based customer service improves customer satisfaction. Rapid response and quick problem resolution enhance user trust and satisfaction.
5. AI-driven Real time delivery tracking system reduces uncertainty and establishes credibility gains consumer trust.
6. AI-powered Convenience boost overall shopping experience of consumer. Feature like save preferences quick reorder and one click check out improve ease doing shopping.

**5.2 Conclusions:** The present study confirms that artificial intelligence plays an important role in determining the consumer shopping behaviour in Q-commerce. AI is not only just a supportive technology but also a driving force behind how consumers search for a product and make shopping decisions. AI-driven tools like personalized recommendations, chatbots, AI-powered delivery tracking, and convenience features significantly improve not only customer satisfaction but also trust and loyalty. As a result, consumers feel more confident and comfortable using Q-commerce platform. Among these features, personalized recommendation plays the most determining factor that understands consumers and their needs and helps product discovery. Chatbot is another feature that provides immediate service interaction and reduces wasted time. Chatbot are capable of personalizing responses based on past order and use data consumer experience like human interaction and improve consumer satisfaction by providing instant 24 X7 support. Similarly, AI-based delivery tracking directly promotes trust, which is an important element in digital commerce, by providing reliability and transparency. Real time tracking not only solve functional needs but also improve emotional trust and long-term loyalty by providing real time visibility of the order journey when customer sees where is the order who is delivering it and how much time it going to deliver strengthen trust in the brands. The features such convenience improved overall shopping experience by reducing the time efforts of the customer. One time click, re-order personalized product list, autofill details, payment option making shopping process fast. The present study emphasizes that business models like Q-commerce are still evolving; it is essential to adapt AI for their growth and success. Adoption of AI is no more optional because customers expect speed and transparency. Finally, the ANOVA results reveal that different age groups do not have a significant impact on how AI influences consumer behaviour. This means a feature appeals equally to young and adult users, showing that the posture effect of AI is universal across the age groups.

### 5.3 Suggestions

#### For Q-commerce companies

1. Invest more in AI driven personalization to customer satisfaction
2. Use AI to provide seamless convenient shopping experience.
3. Improve chatbot efficiency with the national and regional language process.

#### For Future Research

1. Compare Q-commerce with traditional commerce
2. Conduct studies with large samples across multiple cities
3. Focused only on four AI application (recommendations, chatbots, tracking and convenience)

### 5.5 Limitations of study

1. Sample size is limited
2. Conducted only in one region
3. Focused only on four AI applications (recommendations, chartbots, tracking and convenience)

#### Scope for the future Research

1. Study can be used for cross- country comparison
2. Future study can include other AI tools like voice assistance.
3. In long term studies the researcher can study how AI continues to change consumer behaviour

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