

Artificial Intelligence-Driven Supply Chain Management and Its Impact on Customer Experience in Quick Commerce: An Empirical Study of Zepto

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Abstract

The rapid growth of quick commerce has transformed the retail and grocery delivery system in India. Artificial Intelligence (AI)-driven Supply Chain Management (SCM) has become an essential factor in improving operational efficiency, inventory management, delivery speed, and customer satisfaction in quick commerce platforms. This study focuses on examining the impact of Artificial Intelligence-driven Supply Chain Management on customer experience in Zepto, one of India's leading quick commerce platforms. The study is based on primary data collected from 131 respondents through a structured questionnaire.

The research examines the relationship between AI-driven supply chain practices, delivery efficiency and customer experience. Statistical tools such as Percentage Analysis, Correlation, and ANOVA were used to interpret the data. The findings reveal that AI-enabled supply chain practices have positive relationship between delivery efficiency and customer experience. Customers highly value fast delivery, accurate stock availability, personalized recommendations, and real-time tracking systems.

Keywords: Artificial Intelligence, Supply Chain Management, Quick Commerce, Customer Experience, Zepto, Delivery Efficiency.

1. INTRODUCTION

The digital transformation of retail businesses has faster the growth of quick commerce in India. Quick commerce refers to ultra-fast delivery services that provide groceries, household products, and daily products within a short period, generally within 10 to 30 minutes. Platforms such as Zepto have transformed online shopping by using Artificial Intelligence (AI) in their supply chain operations.

Artificial Intelligence-driven Supply Chain Management helps organizations to improve inventory planning, demand forecasting, warehouse management, delivery routing, and customer interaction. AI technologies help companies to analyze customer behaviour, optimize stock levels, reduce delivery time, and improve operational performance.

Zepto uses AI-based systems for inventory management, order allocation, delivery optimization, and personalized product recommendations. These features make shopping more convenient and improve customer satisfaction. In a competitive market, customer experience has become key factor to retain users and ensuring business success.

This study examines how Zepto's AI-driven supply chain practices influence customer experience and delivery services.

Need For the Study

Quick commerce in India is growing rapidly due to changing consumer lifestyles and increasing demand for instant delivery services. Customers expect faster delivery, accurate product availability, reliable tracking systems, and convenient shopping experiences. To meet these expectations, companies are using Artificial Intelligence in their supply chains.

Even though AI is used in supply chain operations, very few studies have examined how it directly affects customer experience in quick commerce. This study is important because it shows how AI-driven Supply Chain Management impacts customer satisfaction, trust, convenience, and service quality in Zepto.

Scope of the Study

The study focuses on customers using Zepto for online shopping and grocery delivery services. It examines the role of Artificial Intelligence in improving:

- Inventory management
- Product availability
- Delivery efficiency
- Personalized recommendations
- Customer satisfaction
- Service quality
- Customer retention

The study will be useful for researchers, marketers, supply chain experts, and quick commerce companies.

Limitations of the Study

- The study is limited to 131 respondents.
- The study focuses only on Zepto users.
- The responses are based on customer perception and personal opinion.
- Due to time constraints, the study could not cover a wider geographical area.
- The study focuses only on selected variables related to AI-driven SCM and customer experience.

2. REVIEW OF LITERATURE

Verma and Sinha (2022) focused on customer satisfaction in quick commerce platforms. The study revealed that delivery speed, order accuracy, and service reliability are major factors influencing customer loyalty. The researchers explained that quick commerce companies rely on technology-driven logistics to meet customer expectations. Real-time tracking systems and efficient inventory management were found to improve customer confidence and convenience. The study concluded that operational efficiency directly impacts customer experience in online delivery platforms.

Sharma and Gupta (2021) studied the role of Artificial Intelligence in inventory management systems. The researchers found that AI-based inventory management helps companies maintain accurate stock levels and reduce stock shortages. The study emphasized that predictive analytics enables organizations to forecast demand effectively and avoid inventory-related issues. AI technologies also help in minimizing wastage and improving order fulfillment efficiency. The study concluded that AI-based inventory systems ensure product availability and reduce delays, which boosts customer satisfaction.

Chatterjee et al. (2021) examined the impact of Artificial Intelligence on customer service and customer engagement. The study found that AI-enabled systems such as chatbots, recommendation engines, and automated support services improve customer interaction and convenience. The researchers stated that customers prefer personalized experiences and faster responses through AI technologies. The study concluded that AI-based engagement builds trust, satisfaction, and loyalty, making AI integration a key factor in shaping customer experience in digital commerce.

Kamble, Gunasekaran, and Sharma (2020) explained that Artificial Intelligence plays a significant role in improving Supply Chain Management performance. The study highlighted that AI technologies help organizations in demand forecasting, inventory optimization, warehouse automation, and route planning. The study observed that AI systems reduce operational costs, improve delivery efficiency, and enhance service quality. It also emphasized that AI-driven analytics improve decision-making and flexibility, helping companies achieve higher customer satisfaction in retail supply chains.

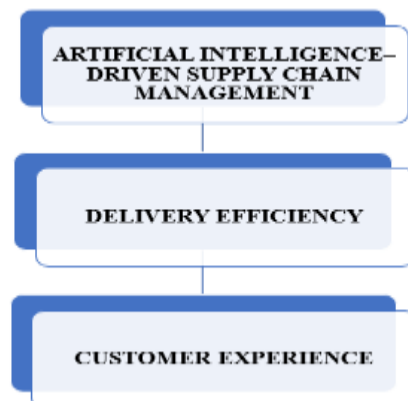
Ramanathan (2020) study examined how digital technologies affect customer experience management. The researcher found that customers expect transparency, convenience, and real-time updates when shopping online. Features such as live order tracking, automated notifications, and digital payment systems improve customer trust and satisfaction. The study concluded that digital innovations strengthen customer relationships, improve reliability, and enhance overall service quality.

Davenport and Ronanki (2018) discussed the practical applications of Artificial Intelligence in business operations. The study explained that AI helps organizations improve efficiency, automate repetitive tasks, and enhance customer service quality. The study found that AI supports better decision-making through predictive models and data analysis. Businesses adopting AI were observed to gain competitive advantages by improving operational performance and customer satisfaction. The researchers concluded that AI has become a strategic tool for modern organizations.

Research Gap

Previous studies have focused on Artificial Intelligence in supply chain operations and customer satisfaction separately. However, limited research has been conducted on the impact of AI-driven Supply Chain Management on customer experience in the quick commerce industry, particularly with reference to Zepto. Therefore, this study fills the gap by focusing on AI's impact on customer experience in Zepto.

Model of the Study



Objectives of the Study

- To examine the impact of AI-Driven SCM on Delivery Efficiency and Customer Experience.
- To analyse the relationship between Delivery Efficiency and Customer Experience.
- To examine whether demographic factors influence Customer Experience.

3. RESEARCH METHODOLOGY

Research Methodology is the step-by-step process used to achieve the objectives of the study. It includes the research design, sampling method, data collection, pilot study, reliability testing, and statistical tools. The methods adopted in this study are explained below.

Sampling

The study is based on Convenience Sampling Technique, a non-probability sampling method. The respondents were selected based on their experience of using Zepto, a quick commerce platform.

Data Collection

The study is based on both primary and secondary data. Primary data were collected through a structured questionnaire administered to 131 Zepto users. The questionnaire was designed to collect information regarding demographic characteristics, Artificial Intelligence–Driven Supply Chain Management practices, Delivery Efficiency, and Customer Experience. Secondary data for the study was collected through journals, books, websites, research articles, conference papers, and online sources related to Artificial Intelligence, Supply Chain Management, quick commerce, and customer experience.

Pilot Study

A pilot study was conducted with 30 respondents to check the clarity and suitability of the questionnaire. Cronbach's Alpha was used to test internal consistency and confirm the reliability of the scale.

Overall Reliability:

Cronbach's Alpha	No.of Respondents
0.84	30

(Source: Computed)

Cronbach's Alpha value obtained was **0.84**, which indicates a good level of reliability. Since the reliability value exceeds the recommended threshold value of 0.70, the questionnaire was considered reliable and suitable for the final survey.

Statistical Tools Used:

The collected data were analysed using Statistical Package for Social Sciences (SPSS) and MS Excel.

The statistical tools used in this study are:

Descriptive Analysis

- Percentage Analysis

Inferential Analysis

- Correlation Analysis
- One-Way ANOVA

Data Analysis and Interpretation

Table 1: Demographic Profile of the Respondents

S. NO	Variables	Frequency	Percentage
1	Age (In Years)		
	18-25	12	9.2
	26-35	59	45.0
	36-45	36	27.5
	46-55	20	15.3
	56 and above	4	3.1
	Total	131	100.0
2	Gender		
	Male	66	50.4
	Female	65	49.6
	Total	131	100.0
3	Educational Qualification		
	High School or Below	13	9.9
	Under -Graduate	76	58.0
	Post – Graduate	38	29.0
	Others	4	3.1
	Total	131	100.0
4	Occupation		
	Student	9	6.9
	Private Employee	79	60.3
	Government Employee	30	22.9
	Business / Self - Employed	11	8.4
	House wife	2	1.5
Total	131	100.0	
5	Monthly Income		
	Nil	11	8.4
	Less than Rs 25,000	5	3.8
	Rs25,001- Rs 50,000	61	46.6
	Rs.50,001 – Rs 75000	43	32.8
	Rs75,001- Rs 1,00,000	6	4.6
	Above Rs.1,00,000	5	3.8
	Total	131	100.0
6	Device Used for Online Shopping		
	Smartphone	128	97.7
	Laptop / Desktop	2	1.5
	Tablet	1	.8
	Total	131	100.0
7	Frequency of Using Zepto		
	Daily	76	58.0

	Weekly	35	26.7
	Monthly	11	8.4
	Occasionally	9	6.9
	Total	131	100.0
	Type of Products Usually Ordered		
8	Grocery	68	51.9
	Food	40	30.5
	Electronics	8	6.1
	Apparel	15	11.5
	Total	131	100.0
	Order Size / Volume		
9	Single item	16	12.2
	2–3 items	29	22.1
	4–5 items	6	4.6
	More than 5 items	80	61.1
	Total	131	100.0

Source: Computed data

Inferences:

The table shows that the majority of respondents belong to the age group of 26–35 years (45%). Male respondents (50.4%) are slightly higher than female respondents (49.6%). Most of the respondents are Under-Graduates (58%). The largest group of respondents are private employees (60.3%). The majority of respondents earn between Rs.25,001 – Rs.50,000 per month (46.6%). Most respondents use smartphones for online shopping (97.7%) and use Zepto daily (58%). Grocery products are the most commonly ordered items (51.9%), and the majority of respondents usually order more than five items (61.1%).

INFERENCE ANALYSIS

Hypothesis 1

To study the influence of Artificial Intelligence–Driven Supply Chain Management on Customer Experience in Zepto.

H₀: There is no significant relationship between Artificial Intelligence–Driven Supply Chain Management and Customer Experience in Zepto.

H₁: There is a significant relationship between Artificial Intelligence–Driven Supply Chain Management and Customer Experience in Zepto.

Correlation Analysis between AI-Driven SCM and Customer Experience

Variables	Correlation Value (r)	P-value
AI–Driven Supply Chain Management and Customer Experience	0.465	0.000

(Source: Computed)

Interpretation

The correlation value between Artificial Intelligence–Driven Supply Chain Management and Customer Experience is 0.465, which indicates a moderate positive relationship between the variables. Since the P-value is less than 0.01, the null hypothesis is rejected at 1% significance

level. Therefore, there is a significant relationship between AI-driven Supply Chain Management and Customer Experience in Zepto.

Hypothesis 2

To analyse the relationship between Delivery Efficiency and Customer Experience.

H0: There is no significant relationship between Delivery Efficiency and Customer Experience.

H1: There is a significant relationship between Delivery Efficiency and Customer Experience.
Correlation Analysis between Delivery Efficiency and Customer Experience

Variables	Correlation Value (r)	P-value
Delivery Efficiency and Customer Experience	0.424	0.000

(Source: Computed)

Interpretation

Since the P-value is less than 0.01, the null hypothesis is rejected at 1 % significance level. Therefore, there is a significant relationship between Delivery Efficiency and Customer Experience.

The correlation coefficient value of 0.424 indicates a moderate positive relationship. This suggests that timely delivery, accurate order fulfilment, real-time tracking, and efficient logistics operations improve customer experience.

Hypothesis 3

To examine whether there is any significant difference between age and Customer Experience.

H0: There is no significant difference between age and Customer Experience.

H1: There is a significant difference between age and Customer Experience.

ANOVA between Age and Customer Experience

Variables	Age Group	F-value	P-value
Customer Experience	18–25 / 26–35 / 36–45 / 46–55 / 56 & above	0.492	0.742

(Source: Computed)

Interpretation

Since the P-value is greater than 0.05, the null hypothesis is accepted at 5% significance level. Therefore, there is no significant difference between age and Customer Experience.

This indicates that customers belonging to different age groups share similar opinions regarding Zepto's AI-enabled services and customer experience.

Findings of the Study

- The majority of respondents are aged 26–35 years (45%).
- Gender distribution is almost equal: 50.4% male, 49.6% female.
- A majority are undergraduates (58%).
- The majority of respondents are private employees (60.3%).
- Most respondents earn between Rs.25,001 and Rs.50,000 per month.
- Smartphones are the most commonly used devices for online shopping (97.7%).
- Most of the respondents use Zepto daily for quick commerce purchases.

- Grocery products are the most frequently ordered items through Zepto.
- Artificial Intelligence–Driven Supply Chain Management has a positive influence on Customer Experience.
- Delivery Efficiency is positively related to Customer Experience.
- There is no significant difference between age and Customer Experience.
- Customers expressed positive opinions regarding AI-enabled delivery systems, inventory management, and order tracking services.

Suggestions

- Zepto can further improve AI-based inventory management to reduce stock shortages.
- The company should enhance delivery tracking systems for better transparency and customer trust.
- AI-enabled personalized recommendations can be improved to match customer preferences more accurately.
- Zepto may expand AI technologies in warehouse and logistics operations to improve operational efficiency.
- Future studies can include additional variables such as customer loyalty, service and repurchase intention across different locations and quick commerce platforms.

4. CONCLUSION

In today's digital economy, Artificial Intelligence has become essential in Supply Chain Management for quick commerce platforms. AI improves efficiency, delivery speed, inventory control, and service quality.

The study shows that AI-driven SCM has a positive impact on customer experience in Zepto. Features like real-time tracking, automated order processing, demand forecasting, and personalized recommendations increase satisfaction, convenience, and trust. Efficient delivery services further strengthen customer loyalty. Overall, AI helps quick commerce companies improve service quality and build stronger customer relationships.

5. REFERENCES

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