

A Study on The Impact of Artificial Intelligence on Quick Commerce

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Abstract

Quick- Commerce is redesigning the entire retail sector by promising deliveries of the products and other essentials in less than 10 to 30 minutes. Its rapid growth in the urban markets shows how the consumers give value to speed and convenience. Operating such quick- delivery system requires a real-time decision making, effective logistics and personalised client requirements. The role played by AI (Artificial Intelligence) is very significant as it changes the entire consumer experiences and provides the operational backbone to the industry.

In this paper the researcher has explored how Artificial Intelligence is changing the marketing effectiveness and the various operational efficiencies in the quick-commerce sector. The paper also brings to light some of the important technologies like various personalization engines, predictive analysis, the dynamic pricing strategies and the route optimization. Personalization driven AI significantly increases consumer satisfaction and their loyalty (Haneefa et.al, Gupta et.al). From the operational side AI increases the speed of delivery and the management of inventory (Dasarraju,2024, Taghipour et.al,2025). This is not free from challenges there exist issues related to transparency, fairness and data privacy being the main challenging concern (Munshi et.al,2025, Naik et.al,2025).

Keywords: Quick-Commerce, Personalization, Loyalty, Dynamic Pricing, Logistic Management, Inventory

Introduction

There has been a radical change that have taken place in the retail business sector. It started with the concept of local kirana stores to shifting the business online. With the invention of quick-commerce the entire way of doing business has undergone a change where groceries are now delivered at the doorstep in less than 30 minutes. The model of quick-commerce has significantly gained popularity among urban consumers who are very busy and always prioritize speed and convenience (Dhiman et.al 2024).

Unlike the traditional electronic commerce, quick-commerce requires perfect coordination between the delivery executives, inventory management, the pricing system and the user interface. There is a need for real-time management of all these operations. And this coordination is largely done by artificial intelligence. The AI systems evaluated the large amount of data, identifies trends and streamlines marketing and the managerial decisions (Pandey et.al 2025).

Artificial Intelligence Techniques used in Quick-Commerce

Artificial intelligence in quick-commerce impacts prices, consumer services and the logistic management. Among various technologies the most crucial ones are predictive analytics, language processing, dynamic pricing and optimization of the routing system.

Personalization and Recommendation System in Quick-Commerce

The most important use of the AI in quick-commerce is considered as personalization. To design a relevant product in the market AI driven recommendations based on previous browsing history, past products purchased and location and timings information are important (Haneefa et.al 2025).

As per research conducted in order to improve consumer happiness and their service experience there is a need for real-time customisation (Haneefa et.al 2025).

AI driven personalized experiences increase the emotional connections and enhances the consumer intensions to make continuous purchases. Customized recommendations, offers and convenient delivery slots also enhances the perceived value and convenience (Gupta et.al 2025)

Further studies also highlight that 'Artificial Intelligence models are extremely dependable in evaluating the consumer loyalty and churning of risk and such models can improve by offering targeted discounts and retention strategies to retain consumers (Jahan et.al 2025)

Predictive Analytics and Demand Forecasting

Forecasting of demand is very important in quick-commerce because the inventory must be stocked close to the consumer location and the order should reach the consumer on time. Real time models based on AI use all the historical data of sales, information about the weather and the preference of time and local demand to understand the demand for the product (Dasarraju 2024)

Taghipour et.al (2025) in their work explained how the modern and advanced forecasting systems not only do demand predictions but also give recommendations of the optimum stock-levels. And because of this the problems of stockouts and excess inventory is reduced. In their study Muloor et.al (2025) showed that the improvement in the availability of the product increases satisfaction and consumer loyalty.

Such precise forecasting is very important especially in 10-30 minutes delivery model. If the product is unavailable in a dark store, then the quick-commerce platform will not be able to fulfil the delivery in the promised time.

Chatbots and Processing of Natural Language

AI chatbots with the capability of Natural Language Processing (NLP) often handle the consumer care in the quick-commerce sector. Queries relating to order payment and the status of delivery are all handled by these AI chatbots (Gupta et.al 2023).

AI powered interactive robots reduces the operational expenses and increase the response time. The research indicated that the consumer happiness is significantly impacted by the accuracy and the speed of response generated by these robots (Gupta et.al 2023). But if there is faulty designed chatbots these may not be able to successfully handle the grievances and the users may get frustrated. And this makes the human intervention necessary.

Dynamic System of Pricing

The concept of dynamic pricing refers to the system of regulating the process of the products in real-time on the bases of prices of the competitors and the behaviour of the consumers. These AI driven pricing system uses the algorithms to maximize the revenue at the same time balancing the delivery capacity. As per the research it's also been identified that these AI pricing models outdo the traditional system of pricing thus leading to revenue maximization. (PU et.al 2025).

(Dasarraju 2024) in his paper highlighted that the concept of the dynamic pricing helps in the management of extreme demand situations. For example, during the high demand situations prices may slightly increase and dynamic pricing strategies help to prevent the over-loading situations

Nevertheless, fairness in perceptions play a key role. (Haneefa et.al 2025) in his study found that the consumers give a positive response when the pricing system followed is fair and transparent and the consumers give a negative response when they feel the pricing is discriminative and unfair. Such ethical concerns in pricing have also been highlighted by sahuo et.al 2025 in their study.

Route Optimization and Logistic Intelligence

Fulfilling a 10-30 minutes delivery will require an advanced optimized routing system. The AI system installed analyse the conditions of traffic, identify the order clusters and the availability of the rider to determine the fastest delivery route (Dasarraju 2024).

Taghipour et.al (2025) in their study highlighted that the AI driven logistic management improve the supply chain management and also improve the operational efficiencies of the business. Real-time adjustments will allow the platforms to manage the sudden demand hike and any kind of traffic disruptions.

Though the conceptual evidences highly support the AI operational values yet the large-scale numerical validations have remained limited (Naik et.al 2025)

The Impact of Artificial Intelligence on Consumer Behaviour

AI significantly impacts the consumer satisfaction, loyalty and consumer retention in quick-commerce.

Impact of AI on Consumer Satisfaction

Consumer satisfaction can be enhanced by the personalized recommendation, faster services and also accurate deliveries. These recommendations, quicker and accurate deliveries create a hassle-free consumer experience. And in the previous studies it has been proved that consistency in services enhances satisfaction and consumer experiences (Haneefa et.al 2025).

Service quality enhanced by AI also improves the perceived convenience which acts as a major factor in increasing satisfaction and experiences in quick-commerce (Singh et.al 2025)

Consumer Loyalty and Retention in Quick-Commerce

In a competitive market where there exist multiple platforms who offer similar products maintaining consumer loyalty becomes very crucial. With the help of AI platforms can identify loyal consumers and also make predictions of those consumers who would do platform switching (Jahan et.al 2025)

Comparative studies conducted on the quick-commerce platforms have shown that retention strategies driven by AI-driven such as discounts and loyalty rewards enhances repeat purchase behaviour of the consumers (Kaur et.al 2025)

The emotional connections that are built by personalization also contributes to the advocacy of the brand and also improve log-term loyalty (Aggarwal et.al 2025)

Operational Benefits Derived From AI

The operational efficiencies of the business are improved in several ways by AI. Some of them being:

a. Reduction in the amount of Stockouts

Proper forecasting ensures that the products are available by the consumers when required by them (Muloor et.al 2025)

b. Faster Delivery of the products

Optimization of the routes reduces the travel time ensuring faster deliveries (Dasarraj 2024)

c. Improved Capacity Management

The dynamic pricing of AI ensures that the order volumes are balanced effectively during the peak hours (PU et.al 2025)

d. Improved Allocation of Resources

With the help of AI predictions of labour and logistics there can be improved allocation of resources (Taghipour et.al 2025)

These improvements in operations are very essential for the profitability of the platforms because quick-commerce industry operates with very low margins.

Ethical & Practical Challenges in Quick-Commerce

In spite of several benefits AI is not free from challenges. Some of the challenges faced by the AI adoption are as follows:

Data Privacy

The quick-commerce platforms collect the sensitive data of the consumers that includes their locations, purchase behaviours. There are concerns relating to the misuse of the personal information that is collected by these platforms. And this increases the privacy concerns (Munshi et.al 2025). Therefore, transparency and regulatory compliances are very essential for the maintenance of trust (Naik et.al 2025)

Algorithm Fairness and Bias

The dynamic pricing systems and the personalized recommendation systems may at times create unintended bias. For instance, a few groups of consumers may receive different pricing and different product suggestions based on the previous purchase behaviours, locations or their browsing history. If this not carefully monitored it may lead to unfair discrimination of among the users. In order to prevent this the companies need to follow clear and ethical guidelines to ensure that all the users are treated equally and there is transparency maintained (Sahoo et.al 2025)

Technical Complexity

Getting AI into the logistic, inventory management and marketing is just not a Plug- and-play task. It is way more complex and requires the right type of the expertise. Skilled professionals and the oversight of the ongoing system are the key to ensure everything runs smoothly (Pandey et.al 2025)

Directions for Future Research

The future researchers must conduct a wider study in the following areas:

1. The long-term impact of the AI on the lifetime value of the consumers
2. Confirmation of the delivery time reduction on a large-scale
3. Algorithm measurement bias
4. AI enabled environmental sustainability in quick-commerce

There is also a need for experimental research to establish a causal relationship rather than just depending on the survey-based data

Conclusion

Artificial Intelligence acts as a backbone of the quick-commerce sector. It ensures faster deliveries, creates personalized marketing strategies, effective logistics and real-time pricing

decisions. It has been consistently proved that personalization acts as the significant driver of the consumer satisfaction and loyalty. The predictive analytics and the optimization of the routing are very essential for maintaining operational efficiencies. However there exist some ethical considerations relating to data privacy, fairness and transparency in pricing. The quick-commerce platforms must ensure that to ensure sustainable growth these concerns need to be addressed.

Therefore, to conclude Artificial Intelligence provides a significant advantage in the quick-commerce but success in the market is mainly dependent on careful implementation of the operations, transparency and regular evaluation

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