International Journal of Advance and Innovative Research
Volume 13, Issue 1 (II): January - March 2026
ISSN 2394 - 7780

UNDERSTANDING THE THEORETICAL FRAMEWORK OF THE ROLE OF ARTIFICIAL INTELLIGENCE IN IMPROVING CUSTOMER SATISFACTION IN E-COMMERCE AND QUICK COMMERCE

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ABSTRACT
The rapid growth of E-Commerce and Quick Commerce has increased the importance of customer satisfaction and Artificial Intelligence. AI has become a key tool in improving the overall customer Experience. While existing studies largely focus on the adoption and operational benefits of AI, there is limited theoretical clarity on how AI contributes to customer satisfaction. This paper aims to develop a theoretical understanding of the role of Artificial Intelligence in improving customer satisfaction in E-Commerce and Quick Commerce. The study is based on secondary data drawn from academic literature, industry reports, and documented studies on AI applications in digital commerce. Through a critical review of existing literature, key AI applications such as chatbots, recommendation systems, personalization tools, demand forecasting, and delivery optimization are identified. Based on insights from the literature, a conceptual framework is proposed to explain the mechanisms through which AI enhances service performance, customer experience, and satisfaction. The paper contributes to existing research by offering a structured theoretical framework that explains the role of AI in improving customer satisfaction.

Keywords: *Artificial Intelligence, Customer Satisfaction, E-Commerce, Quick Commerce, Digital Retail Platforms, AI Applications*

1. INTRODUCTION
Artificial Intelligence (AI) refers to the use of intelligent systems that can analyse data, learn from patterns, and support better decision-making. In online business, AI helps platforms understand customer behaviour, automate services, and improve efficiency. As digital shopping continues to grow, AI has become an important tool for enhancing customer experience.

Customer satisfaction reflects how well an online platform meets customer expectations. In digital commerce, satisfaction depends on factors such as ease of use, quick responses, personalised suggestions, and timely delivery. Satisfied customers are more likely to return and remain loyal, making customer satisfaction essential for long-term success.

E-Commerce involves buying and selling goods through online platforms, offering convenience and wide product choices. Quick Commerce (Q-Commerce) is a faster form of online retail that focuses on delivering essential items within a very short time. While E-Commerce mainly uses AI for personalisation and customer engagement, Quick Commerce relies on AI for demand prediction and fast delivery.

In this context, the present study aims to develop a theoretical understanding of the role of Artificial Intelligence in improving customer satisfaction in E-Commerce and Quick Commerce platforms using secondary data.

2. LITERATURE REVIEW
Artificial Intelligence (AI) has been widely studied for its role in improving customer experience and satisfaction in digital commerce. Davenport and Ronanki (2018) stated that AI enables organizations to analyse customer data, automate processes, and support better decision-making, leading to improved service responsiveness. Grewal, Roggeveen, and Nordfält (2017) highlighted that AI-driven technologies enhance service efficiency and convenience in online retail, which are key determinants of customer satisfaction.

In the context of E-Commerce, several studies have focused on AI-based personalization and recommendation systems. Verma et al. (2020) found that recommendation systems help customers make faster and better purchase decisions, thereby increasing satisfaction. Shankar (2018) noted that personalization reduces customer effort and improves perceived value during online shopping. Jannach and Jugovac (2019) emphasized that effective recommendation systems contribute to both customer satisfaction and long-term engagement. Customer service automation through AI has also been examined extensively. Huang and Rust (2018) reported that AI improves service quality by increasing speed and consistency in customer interactions.

Brandtzaeg and Følstad (2018) observed that AI-powered chatbots enhance customer satisfaction by providing instant responses and continuous availability. Adam, Wessel, and Benlian (2021) confirmed that chatbots

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positively influence customer satisfaction when they are reliable and easy to use. However, Kumar and Ayodeji (2021) pointed out that excessive automation without human support may negatively affect customer trust.

Studies related to Quick Commerce focus mainly on AI applications in logistics and delivery performance. Wang and Disney (2016) demonstrated that AI-based demand forecasting improves inventory management and supply chain efficiency. Hübner, Kuhn, and Wollenburg (2016) identified last-mile delivery speed and accuracy as critical factors influencing customer satisfaction. Mehta and Shah (2022) found that customers prefer Quick Commerce platforms due to fast delivery and convenience, which are largely supported by AI-enabled operational systems.

Industry reports provide additional support for these findings. PwC (2023) and McKinsey & Company (2024) reported that AI adoption in digital commerce improves customer engagement and satisfaction through personalization and efficient service delivery. Case evidence from platforms such as Amazon, Flipkart, Blinkit, Zepto, and Instamart shows that AI is used for recommendation engines, demand prediction, and delivery optimization to meet customer expectations.

Despite the benefits, challenges related to AI adoption have been highlighted in the literature. Martin and Murphy (2017) emphasized concerns related to data privacy and ethical use of AI, which influence customer trust. Singh and Kaur (2023) found that data security concerns affect customer satisfaction in AI-enabled platforms. Ghosh (2021) identified high implementation costs and the need for skilled manpower as major constraints.

Overall, existing literature confirms that Artificial Intelligence plays a significant role in improving customer satisfaction by enhancing personalization, service efficiency, and delivery performance. However, most studies examine E-Commerce and Quick Commerce separately, and limited research provides a unified theoretical explanation of AI's role in customer satisfaction across both business models. This gap justifies the need for a theory driven conceptual framework, which the present study aims to develop.

3. OBJECTIVES OF THE STUDY

To achieve the purpose of the study, the following objectives have been formulated:

1. To review existing literature on the role of Artificial Intelligence in improving customer satisfaction in E-Commerce and Quick Commerce.
2. To develop a theoretical framework explaining how Artificial Intelligence improves customer satisfaction in E-Commerce and Quick Commerce.

4. RESEARCH METHODOLOGY

The present study is descriptive and analytical in nature and is based completely on **secondary data**. Nearly 70 research articles, journals, industry reports, and published studies were reviewed to understand the role of Artificial Intelligence in improving customer satisfaction in E-Commerce and Quick Commerce. From this large set of literature, a few important and relevant studies have been selected and discussed in the paper to show the importance of AI in digital commerce. The collected secondary data was analysed, which helped in developing a **t**heoretical and conceptual framework explaining how Artificial Intelligence contributes to customer satisfaction in E-Commerce and Quick Commerce platforms.

5. THEORETICAL FRAMEWORK

The theoretical framework explains how Artificial Intelligence contributes to improving customer satisfaction in E-Commerce and Quick Commerce platforms. Based on insights drawn from studies reviewed across the topic, two figures have been developed to illustrate the relationship between AI applications, service performance, customer experience, and customer satisfaction. The framework highlights how AI-driven tools enhance service efficiency and customer experience, which in turn influence satisfaction, trust, and repeat purchase behaviour.

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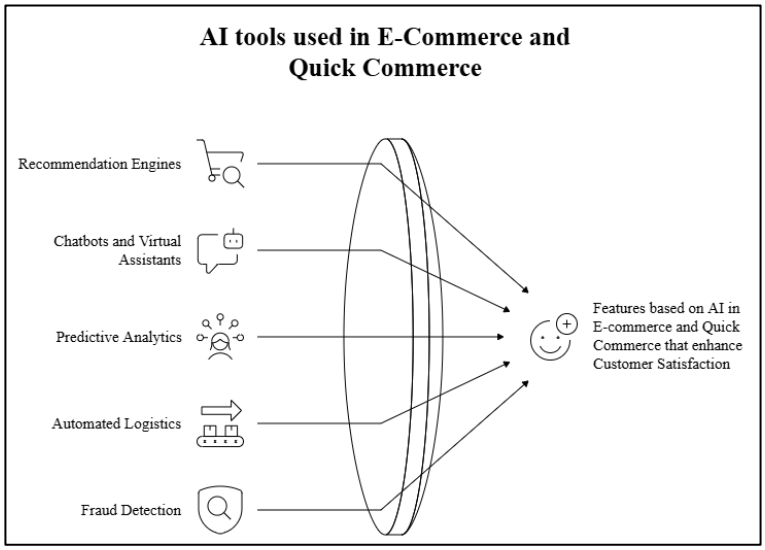
Figure 5.1: AI tools used in E- Commerce and Q- Commerce



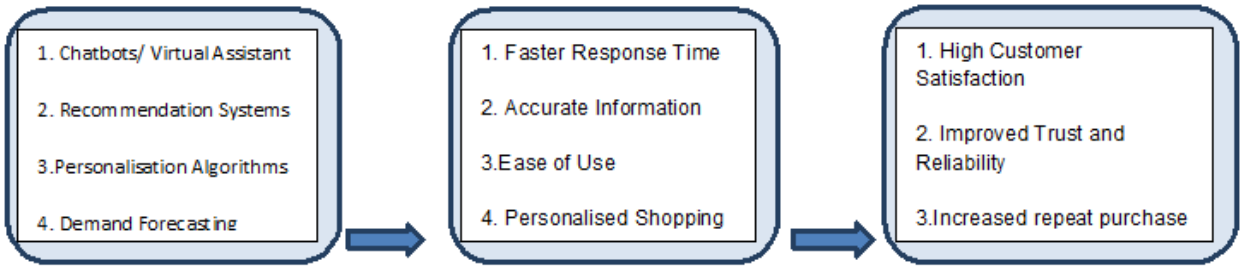
Source: *Compiled by the researcher*

Figure 5.1 illustrates the key Artificial Intelligence tools commonly adopted by E-Commerce and Quick Commerce platforms to enhance customer satisfaction. The figure identifies recommendation engines, chatbots and virtual assistants, predictive analytics, automated logistics, and fraud detection systems as the core AI-driven tools supporting digital retail operations.

Recommendation engines analyse customer preferences and past purchase behaviour to offer relevant product suggestions, thereby improving personalisation and shopping convenience. Chatbots and virtual assistants enable real-time customer support by handling queries, providing order updates, and resolving issues efficiently. Predictive analytics assists platforms in forecasting demand and managing inventory, which is especially critical in Quick Commerce models where speed and availability are essential. Automated logistics ensures faster order processing and optimised delivery routes, while fraud detection systems enhance transaction security and build customer trust.

Overall, the figure explains how these AI tools work together to create AI-based features that improve efficiency, reliability, and responsiveness, ultimately contributing to higher customer satisfaction in both E-Commerce and Quick Commerce platforms.

Figure 5.2 AI applications and customer satisfaction flowchart



Source: *Compiled by the researcher*

Artificial Intelligence Tools used	Service Performance and Impact on customer experience	Effect on Customer Satisfaction

Figure 5.2 presents a conceptual flowchart explaining the relationship between Artificial Intelligence applications, service performance, customer experience, and customer satisfaction. The framework is structured into three interconnected stages, showing the sequential impact of AI on customer outcomes.

The first stage represents Artificial Intelligence tools used, including chatbots and virtual assistants, recommendation systems, personalisation algorithms, and demand forecasting systems. These tools act as variables that support platform operations and customer interaction.

ISSN 2394 - 7780

The second stage highlights service performance and its impact on customer experience. AI applications improve service quality by enabling faster response time, providing accurate information, ensuring ease of use, and offering personalised shopping experiences. These improvements reduce customer effort and enhance overall satisfaction with the online shopping process.

The final stage reflects the effect on customer satisfaction, which includes high customer satisfaction, improved trust and reliability, and increased repeat purchase behaviour. The directional arrows in the figure indicate that AI influences customer satisfaction indirectly through improved service performance and enhanced customer experience.

Thus, Figure 5.2 clearly demonstrates that Artificial Intelligence acts as a facilitator in digital commerce, strengthening service delivery and customer experience, which in turn leads to improved customer satisfaction in E-Commerce and Quick Commerce platforms.

6. FINDINGS

1. The review of literature confirms that Artificial Intelligence plays a significant role in improving customer satisfaction in both E-Commerce and Quick Commerce platforms.
2. AI tools such as chatbots, recommendation systems, personalisation algorithms, demand forecasting, and logistics optimisation enhance service performance and customer experience.
3. Improved response time, accuracy of information, ease of use, and personalised shopping experiences act as key drivers of customer satisfaction.
4. While E-Commerce platforms focus more on personalisation and customer engagement, Quick Commerce platforms rely heavily on AI for speed, demand prediction, and delivery efficiency, reflecting differences in business models

7. CONCLUSION:

The study concludes that Artificial Intelligence has become a critical enabler of customer satisfaction in digital commerce. By strengthening service performance and enhancing customer experience, AI-driven tools contribute to higher satisfaction, trust, and repeat purchase behaviour in both E-Commerce and Quick Commerce platforms. The theoretical framework developed in this study provides a structured explanation of how AI applications translate into customer satisfaction outcomes and highlights the distinct role of AI across different digital retail models.

8. SCOPE OF FURTHER STUDY

Future research may empirically validate the proposed theoretical framework using primary data across E-Commerce and Quick Commerce platforms. Comparative studies across regions, age groups, and platform types can offer deeper insights into variations in AI-driven customer satisfaction. Further research may also examine ethical concerns, data privacy, and trust issues associated with AI adoption in digital commerce. Longitudinal studies could explore the long-term influence of AI on customer loyalty and sustained satisfaction.

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