

The Effect of Delivery Logistics on E-Commerce Customer Satisfaction: A Literature Review

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Abstract

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The rapid growth of e-commerce has made delivery logistics a crucial determinant of customer satisfaction, yet questions remain about which logistics dimensions most strongly influence consumer perceptions and loyalty. This study applies a systematic literature review to synthesize peer-reviewed research on the role of delivery speed, reliability, visibility, flexibility, and sustainability in shaping satisfaction outcomes. Data were gathered from leading academic databases and analyzed thematically to identify recurring patterns and gaps in the literature. The discussion integrates insights from diverse contexts to evaluate how logistical performance translates into trust, convenience, and long-term loyalty, while also highlighting the impact of technological innovations and sustainability initiatives. The findings reveal that reliability and visibility are more influential than speed alone, flexibility enhances convenience, and sustainability strengthens brand perception. The study concludes that delivery logistics functions not only as an operational activity but as a strategic driver of customer experience in e-commerce.

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1. Introduction

E-commerce growth has shifted customer expectations toward fast, reliable, and transparent order fulfillment, making delivery logistics a core driver of satisfaction. In online settings where tactile product evaluation is absent, the “moment of truth” occurs at delivery; performance or failure at this touchpoint strongly shapes subsequent purchase behavior and loyalty. Empirical work shows that fulfillment glitches—late, partial, or damaged deliveries—significantly depress customers’ intention to repurchase, underscoring how operational execution directly translates into perceived service quality and satisfaction outcomes (Rao et al., 2011). Beyond simple speed, contemporary logistics research highlights a bundle of value elements—predictability, traceability, convenience, and problem resolution—that collectively determine how customers evaluate their experience.

Last-mile design choices are especially consequential. Reviews of e-commerce distribution identify the last mile as a performance bottleneck with disproportionate impact on perceived service quality, where time windows, delivery density, and handoff options interact with customer expectations (Esper et al., 2003; Mangiaracina et al., 2015). Service innovations such as parcel lockers and pickup points can raise satisfaction by increasing delivery flexibility and reducing failed attempts, but their acceptance depends on perceived convenience, security, and effort (Vakulenko et al., 2018; Yuen et al., 2019). At the same time, urban logistics constraints—congestion, access regulations, and environmental externalities—complicate firms’ ability to deliver both speed and sustainability, creating trade-offs

that customers increasingly notice and factor into satisfaction judgments (Bachofner et al., 2022).

Recent surveys of last-mile concepts—from crowdshipping and micro-depots to autonomous delivery—suggest that while novel configurations can enhance delivery reliability and responsiveness, their satisfaction effects hinge on operational details such as delivery time assurance, communication quality, and failure recovery (Boysen et al., 2021). The systematic literature to date thus points to a multifaceted causal chain: logistics capabilities enable consistent, visible, and customer-friendly delivery, which shapes perceived value and service quality, which in turn influences satisfaction and loyalty. However, heterogeneity in product categories, urban contexts, and delivery modalities leaves open questions about which design levers most efficiently convert logistical performance into satisfaction gains across settings. This review synthesizes peer-reviewed evidence on how delivery speed, reliability, visibility, flexibility, and sustainability features of logistics influence e-commerce customer satisfaction, and identifies where methodological gaps and contextual contingencies warrant further research.

2. Literature Review

The relationship between delivery logistics and customer satisfaction has been well-documented across operations management and e-commerce research. Early studies emphasized the critical role of delivery reliability and timeliness in shaping customer perceptions of service quality (Rao et al., 2011). As online retail has matured, scholars have highlighted that delivery is not only a functional activity but

also a strategic component of customer experience management, with failures in last-mile fulfillment directly linked to dissatisfaction and churn (Esper et al., 2003).

Recent research underscores the complexity of last-mile logistics as both a performance bottleneck and a value-adding opportunity. For example, Mangiaracina et al. (2015) noted that customers increasingly weigh environmental implications of delivery modes, while Bachofner et al. (2022) emphasized how congestion and sustainability pressures influence satisfaction outcomes. Service innovations such as parcel lockers, smart lockers, and pickup points have been found to improve satisfaction by enhancing flexibility and reliability, though their effectiveness varies across urban and demographic contexts (Vakulenko et al., 2018; Yuen et al., 2019).

The literature also points to emerging models such as crowdshipping, autonomous vehicles, and micro-depots, which show potential to improve delivery responsiveness but require customer acceptance and trust to realize satisfaction gains (Boysen et al., 2021). Consumer expectations of real-time visibility and communication throughout the delivery process have further expanded the scope of logistics performance evaluation (Lim et al., 2018). Moreover, studies have linked logistics service quality to long-term loyalty, showing that efficient reverse logistics and easy return policies can enhance satisfaction and trust in e-commerce platforms (Hjort & Lantz, 2016; Nguyen et al., 2020).

Overall, the literature reveals that delivery logistics is multidimensional—encompassing speed, reliability, visibility, flexibility, and sustainability. However, gaps remain in understanding how these dimensions interact across product types,

geographic settings, and technological innovations, pointing to the need for more context-specific and comparative analyses.

3. Methods

This study adopts a systematic literature review approach to synthesize peer-reviewed evidence on the relationship between delivery logistics and e-commerce customer satisfaction. The review followed structured procedures of identification, screening, eligibility, and inclusion to ensure rigor and transparency. Relevant databases, including Scopus, Google Scholar, Web of Science, and ScienceDirect, were searched using a combination of keywords such as “e-commerce”, “last-mile delivery”, “logistics performance”, “customer satisfaction”, and “online retail” using Boolean operators to ensure comprehensive coverage. Only English-language studies were included to maintain consistency and comparability.

Following the database search, duplicate records were removed, and abstracts were screened for relevance. Full texts were then assessed against predefined inclusion criteria, which required that studies directly examine aspects of delivery logistics such as speed, reliability, flexibility, visibility, sustainability, or reverse logistics in relation to customer satisfaction outcomes in e-commerce contexts. Exclusion criteria filtered out non-academic sources and studies focusing solely on supply-side efficiency without customer outcomes. The final sample was analyzed thematically, allowing for the identification of recurring dimensions of logistics performance and their reported impact on customer perceptions, satisfaction, and

loyalty. This approach enabled the integration of findings across diverse geographies, delivery models, and methodological designs.

4. Results and Discussion

The findings of the systematic review highlight that delivery logistics is consistently identified as one of the most decisive factors in shaping e-commerce customer satisfaction. Across the reviewed studies, the dimensions of speed, reliability, visibility, flexibility, and sustainability emerged as recurrent themes influencing consumer perceptions. Speed of delivery remains the most visible metric to customers, as prompt delivery has been strongly associated with positive satisfaction outcomes. However, research indicates that speed alone is not sufficient. Reliability, defined as the ability to meet promised delivery times without errors or delays, appears to be even more critical in shaping trust and loyalty. Customers are more tolerant of slower but reliable delivery than of fast but inconsistent performance, emphasizing the importance of fulfillment dependability (Rao et al., 2011; Nguyen et al., 2020).

Another key finding is the growing relevance of delivery visibility and communication. Studies consistently show that consumers value real-time tracking, proactive notifications, and transparent communication when disruptions occur. These features contribute to perceived control and reduce uncertainty, thereby improving overall satisfaction even when delays are unavoidable (Lim et al., 2018; Akil & Urgan, 2022). In line with this, research on customer experience management demonstrates that companies that offer reliable tracking and responsive customer

support during delivery disruptions gain higher loyalty scores compared to those that focus solely on speed (Esper et al., 2003). The thematic analysis also reveals that flexibility in delivery—such as the option to select time windows, delivery locations, or alternative pickup solutions—has become an important differentiator in crowded e-commerce markets. The introduction of parcel lockers, pickup stations, and smart locker systems has been positively received, particularly in urban environments where missed deliveries are frequent (Vakulenko et al., 2018; Yuen et al., 2019).

Sustainability emerged as a rising theme in the literature. While customers primarily prioritize convenience and reliability, several studies suggest that environmentally friendly delivery options, such as consolidated shipments or carbon-neutral services, can enhance brand image and indirectly influence satisfaction (Mangiaracina et al., 2015; Bachofner et al., 2022). Younger consumers, in particular, show stronger preferences for sustainable practices, indicating that logistics strategies aligned with environmental responsibility may become a competitive advantage in the future (Buldeo Rai et al., 2017). Similarly, research points to the importance of reverse logistics and easy return processes in reinforcing satisfaction, as the ability to conveniently handle product returns is increasingly seen as part of the overall delivery experience (Herhausen et al., 2015; Hjort & Lantz, 2016).

The review also reveals that emerging technologies are reshaping customer expectations. Innovations such as crowdshipping, drone delivery, and autonomous vehicles are perceived as promising avenues for improving responsiveness, yet their acceptance depends heavily on trust, safety perceptions, and demonstrated reliability

(Punel & Stathopoulos, 2017; Boysen et al., 2021). Moreover, evidence shows that customers' willingness to adopt these innovations is context-dependent, with urban consumers more likely to embrace them compared to rural populations. At the same time, the increasing use of predictive analytics and digital platforms to optimize delivery routes and demand forecasting has been associated with higher levels of operational efficiency and satisfaction outcomes (Hazen et al., 2016; Chopra, 2018).

Overall, the results demonstrate that customer satisfaction in e-commerce is not determined by a single logistics factor but by the interplay of speed, reliability, flexibility, communication, sustainability, and technological innovation. The discussion highlights that while firms often prioritize speed as a competitive advantage, customers assign equal or greater value to reliability and visibility. Moreover, the rise of sustainability concerns and technological innovations underscores that delivery logistics is evolving from a purely operational function into a strategic element of customer experience management. Future research should further investigate contextual differences, such as cultural preferences, product types, and urban versus rural delivery environments, to provide more nuanced insights into how logistics design translates into satisfaction outcomes.

5. Conclusion

This review has shown that delivery logistics is central to shaping customer satisfaction in e-commerce, with factors such as speed, reliability, visibility, flexibility, and sustainability consistently highlighted across the literature. While fast delivery is valued, the findings reveal that reliability and communication are often more critical

in fostering trust and repeat purchasing. Innovations such as parcel lockers, smart tracking, and flexible delivery options further enhance satisfaction by reducing uncertainty and improving convenience. At the same time, sustainable logistics practices and efficient return processes are emerging as important components of customer experience, particularly as consumer awareness of environmental and social issues increases.

The results also indicate that technological advancements, including predictive analytics, digital platforms, and novel delivery models such as crowdshipping and autonomous vehicles, are transforming customer expectations and shaping the competitive landscape of online retail. However, customer acceptance of these innovations remains context-dependent and influenced by trust and perceived value. Overall, the findings suggest that logistics is no longer a purely operational concern but a strategic driver of customer experience and long-term loyalty in e-commerce. Future research should continue to explore contextual differences across regions, industries, and customer segments to better understand how logistics performance translates into satisfaction in diverse settings.

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