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## FACTORS INFLUENCING SHOPPING CART ABANDONMENT IN E-COMMERCE: A REVIEW OF EXISTING LITERATURE

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### ABSTRACT

Shopping cart abandonment has emerged as a critical concern in the e-commerce industry, significantly affecting sales conversion, customer acquisition efficiency, and organizational profitability. Although online shopping offers convenience and accessibility, a substantial proportion of consumers discontinue their purchase journey after adding products to their shopping carts. This review paper synthesizes existing literature to identify and analyze the major factors contributing to shopping cart abandonment in e-commerce platforms. The review categorizes these factors into five key dimensions: cost-related factors, website and technical factors, payment and security factors, consumer behavior factors, and delivery and service factors. To provide a structured understanding of the phenomenon, the Fishbone (Ishikawa) Framework is employed to identify the root causes underlying abandonment behavior. The findings indicate that hidden costs, complicated checkout procedures, security concerns, website usability issues, comparison shopping tendencies, and delivery-related challenges are among the most influential determinants of shopping cart abandonment. The study further highlights the interconnected nature of these factors and emphasizes the importance of adopting a holistic approach to improve customer experience and conversion rates. In addition, the review identifies important research gaps and proposes future research directions in the areas of mobile commerce, artificial intelligence, and personalized shopping experiences. The study contributes to the growing body of e-commerce literature by consolidating fragmented findings and offering practical insights for retailers seeking to minimize shopping cart abandonment and enhance online purchase completion.

**KEYWORDS:** Shopping Cart Abandonment, E-Commerce, Consumer Behavior, Online Shopping, Customer Experience, Payment Security, Website Usability, Purchase Decision.

### 1. INTRODUCTION

The rapid growth of e-commerce has transformed the retail landscape by providing consumers with greater convenience, wider product choices, and easy access to online marketplaces. As internet



penetration and digital payment systems continue to expand, online shopping has become a preferred purchasing channel for consumers worldwide. However, one of the most persistent challenges faced by online retailers is shopping cart abandonment, which occurs when consumers add products to their virtual shopping carts but leave the website without completing the purchase. According to Rajamma, Paswan, and Hossain (2009), shopping cart abandonment is influenced by factors such as transaction inconvenience, perceived risk, and waiting time during the checkout process. Similarly, Kukar-Kinney and Close (2010) found that many consumers use shopping carts for purposes other than immediate purchasing, including information gathering, price comparison, and wish-list creation. Research by Close and Kukar-Kinney (2010) further revealed that psychological and behavioral motivations significantly affect cart abandonment behavior. Website-related issues, such as poor usability and complex navigation, have also been identified as major barriers to purchase completion (Rose et al., 2012). In addition, concerns regarding online security, privacy protection, and trust continue to influence consumers' willingness to finalize transactions (Cho, 2004). Studies by Gupta and Kim (2010) suggest that perceived value and cost–benefit evaluations play a critical role in online purchase decisions, while Sorce, Perotti, and Widrick (2005) highlighted the influence of demographic factors on online buying behavior. Furthermore, Zhou, Dai, and Zhang (2007) emphasized that consumer attitudes, technological readiness, and perceived ease of use are important determinants of online shopping acceptance. With the increasing adoption of mobile commerce and omnichannel retailing, understanding the causes of shopping cart abandonment has become even more important for improving customer experience and enhancing conversion rates. Although numerous studies have examined individual determinants of cart abandonment, the findings remain dispersed across different theoretical and empirical contexts. Therefore, a comprehensive review of the existing literature is necessary to synthesize the key factors influencing shopping cart abandonment, identify recurring themes, and provide insights for both researchers and practitioners. This review aims to consolidate the existing body of knowledge and present a structured understanding of the factors contributing to shopping cart abandonment in e-commerce platforms.

## **2. REVIEW METHODOLOGY**

This study adopts a narrative literature review approach to examine the factors influencing shopping cart abandonment in e-commerce platforms. Relevant scholarly articles, conference papers, and industry reports were identified through electronic databases such as Google Scholar, Scopus, Web of Science, ScienceDirect, Emerald Insight, and SpringerLink. Keywords including “shopping cart abandonment,” “online purchase abandonment,” “e-commerce consumer behavior,” “checkout abandonment,” and “online shopping behavior” were used to retrieve relevant studies. The review primarily focused on publications from 2004 to 2025 to capture both foundational and recent developments in the field. Studies were selected based on their relevance to shopping cart abandonment, consumer decision-making, website usability, payment security, and online purchasing

behavior. After screening titles, abstracts, and full texts, the most relevant studies were included for detailed analysis. The selected literature was systematically reviewed and categorized into major themes, including cost-related factors, website and technical factors, payment and security factors, consumer behavior factors, and delivery and service factors. Furthermore, the findings from the reviewed studies were synthesized and organized using the Fishbone Framework to identify the root causes of shopping cart abandonment. This methodological approach provides a comprehensive understanding of the existing body of knowledge while highlighting research gaps and future directions in the field of e-commerce.

**Table 1. Key Studies on Shopping Cart Abandonment**

Author(s)	Year	Focus of Study	Key Findings
Rajamma et al.	2009	Shopping cart abandonment behavior	Transaction inconvenience and perceived risk increase abandonment.
Kukar-Kinney & Close	2010	Determinants of cart abandonment	Comparison shopping and browsing behavior are major causes.
Pavlou	2003	Trust and online purchasing	Trust and security significantly influence purchase completion.
Rose et al.	2012	Online customer experience	Positive website experience reduces abandonment.
Belanger et al.	2002	Privacy and security	Security concerns affect online transaction decisions.
Flavián et al.	2006	Website usability and trust	Website functionality influences customer loyalty and purchases.
Moe	2003	Online shopping behavior	Consumers often use carts for information gathering.
Collier & Bienstock	2006	E-retailing service quality	Service quality influences online shopping outcomes.
Wolfenbarger & Gilly	2003	E-tail quality	Website quality affects customer satisfaction and buying behavior.
Verhoef et al.	2009	Customer experience management	Customer experience impacts purchase intentions and loyalty.

### 3. Factors Influencing Shopping Cart Abandonment

#### 3.1 Cost-Related Factors

Cost-related factors are among the most frequently cited reasons for shopping cart abandonment in e-commerce. Consumers often abandon their carts when they encounter unexpected costs during the



checkout process, such as shipping charges, taxes, handling fees, or additional service costs that were not disclosed earlier in the shopping journey. According to Xavier and Krishnan (2019), price transparency significantly influences consumers' purchase decisions, and hidden costs can negatively affect customer trust and purchase intention. Similarly, Hsu, Chang, and Chuang (2015) found that consumers are highly sensitive to additional charges that increase the final purchase amount beyond their initial expectations. High shipping costs have been identified as one of the strongest deterrents to online purchase completion, particularly when customers perceive the costs as unreasonable relative to the product value (Huang, Schrank, & Dubinsky, 2004). Furthermore, consumers frequently compare prices across multiple online platforms before making a final purchase decision, leading to cart abandonment when better deals or discounts are available elsewhere (Dholakia, 2000). Research by Chiang and Dholakia (2003) also suggests that price-conscious consumers often use shopping carts as temporary storage while searching for lower prices and promotional offers. In addition, the absence of discounts, coupon codes, cashback offers, or free shipping incentives may discourage consumers from completing their purchases. Therefore, transparent pricing policies, competitive pricing strategies, and attractive promotional offers play a crucial role in reducing shopping cart abandonment and improving conversion rates in e-commerce environments.

### **3.2 Website and Technical Factors**

Website and technical factors play a crucial role in influencing consumers' online purchasing decisions and are significant contributors to shopping cart abandonment. A poorly designed website, slow page loading speed, complex navigation, and technical glitches can create frustration among users and discourage them from completing purchases. According to Loiacono, Watson, and Goodhue (2007), website quality significantly affects consumers' perceptions and online shopping experiences. Consumers expect e-commerce websites to be user-friendly, visually appealing, and easy to navigate. When websites fail to meet these expectations, the likelihood of cart abandonment increases. Research by Tarafdar and Zhang (2005) found that website complexity and poor usability negatively affect customer satisfaction and purchase intentions. Similarly, Cyr, Head, and Ivanov (2006) emphasized that website aesthetics, information quality, and ease of use contribute to trust formation and online transaction completion. Technical issues such as website crashes, broken links, payment processing errors, and system downtime further discourage customers from proceeding with purchases. Flavián, Guinalíu, and Gurrea (2006) observed that website functionality and reliability are critical determinants of consumer trust and loyalty in online environments. Additionally, mobile shoppers often face challenges related to responsive design, screen compatibility, and checkout optimization, which can increase abandonment rates. Therefore, e-commerce firms must continuously improve website performance, usability, and technical reliability to provide a seamless shopping experience and minimize shopping cart abandonment.



### **3.3 Payment and Security Factors**

Payment and security factors are among the most critical determinants of shopping cart abandonment in e-commerce. Consumers are often reluctant to complete online transactions when they perceive risks related to payment processing, data privacy, and financial security. According to Pavlou (2003), trust and perceived security significantly influence consumers' willingness to engage in electronic transactions. Concerns regarding credit card fraud, identity theft, unauthorized access to personal information, and misuse of financial data can discourage consumers from completing purchases. Salisbury, Pearson, Pearson, and Miller (2001) found that perceived security of online payment systems positively affects purchase intentions and transaction completion. Additionally, the availability of multiple and convenient payment options plays a crucial role in reducing cart abandonment. When consumers do not find their preferred payment method, such as digital wallets, net banking, buy-now-pay-later services, or cash-on-delivery options, they are more likely to abandon their carts. Research by Lim (2003) highlighted that trust in online payment mechanisms directly influences consumer confidence and online purchasing behavior. Furthermore, visible security assurances such as SSL certificates, secure payment gateways, privacy policies, and trust seals can enhance consumers' perceptions of website credibility and reduce perceived risks. Belanger, Hiller, and Smith (2002) emphasized that privacy protection mechanisms and security features contribute significantly to online consumer trust. Therefore, e-commerce platforms must invest in robust cybersecurity measures, transparent privacy practices, and diverse payment alternatives to foster consumer confidence and minimize shopping cart abandonment.

### **3.4 Consumer Behavior Factors**

Consumer behavior factors significantly influence shopping cart abandonment in e-commerce platforms. Online shoppers often exhibit behaviors such as hesitation, indecisiveness, impulse browsing, and comparison shopping, which may prevent them from completing purchases. According to Moe (2003), consumers frequently use online shopping carts as tools for information gathering and product evaluation rather than immediate purchasing. Many shoppers add items to their carts while comparing prices, features, and offers across different websites before making a final decision. Research by Punj (2011) suggests that the abundance of information available online can lead to decision paralysis, causing consumers to postpone or abandon purchases altogether. Additionally, impulse buying tendencies and changing purchase intentions contribute to cart abandonment, particularly when consumers reassess the necessity of a product before checkout. Dhar and Wertenbroch (2000) found that consumers often experience preference uncertainty, which affects their ability to make final purchase decisions. Psychological factors such as perceived risk, lack of trust, and fear of making incorrect choices further influence abandonment behavior. Furthermore, consumers may abandon carts to wait for future discounts, promotional offers, or seasonal sales. Novak, Hoffman, and Yung (2000) emphasized that positive online experiences and consumer



engagement can encourage purchase completion, whereas distractions and interruptions during the shopping process increase abandonment rates. Therefore, understanding consumer motivations, attitudes, and decision-making processes is essential for developing effective strategies to reduce shopping cart abandonment and improve online conversion rates.

### **3.5 Delivery and Service Factors**

Delivery and service factors are important determinants of shopping cart abandonment in e-commerce platforms. Consumers often evaluate shipping speed, delivery reliability, return policies, and customer service quality before making a purchase decision. Unfavorable delivery conditions, such as long delivery times, high shipping fees, uncertain delivery schedules, and limited delivery options, can discourage consumers from completing transactions. According to Ramanathan (2010), logistics performance and delivery reliability significantly influence customer satisfaction and online purchasing behavior. Consumers increasingly expect fast and flexible delivery services, and any perceived inconvenience may lead to cart abandonment. Research by Collier and Bienstock (2006) found that service quality dimensions, including order fulfillment accuracy and timely delivery, are critical for ensuring positive online shopping experiences. Additionally, restrictive return and refund policies often increase consumers' perceived risk, particularly when purchasing products that cannot be physically examined before purchase. Holloway and Beatty (2003) emphasized that effective service recovery and responsive customer support contribute to higher customer trust and purchase completion. Poor communication regarding delivery status, inadequate tracking facilities, and difficulty in contacting customer service representatives can further reduce consumer confidence. Moreover, customer support availability during the checkout process helps address concerns and resolve issues that might otherwise result in purchase abandonment. Therefore, e-commerce firms should focus on improving logistics efficiency, offering flexible delivery options, maintaining transparent return policies, and providing high-quality customer support to reduce shopping cart abandonment and enhance customer satisfaction.

### **4. Root Cause Analysis Using the Fishbone Framework**

The Fishbone (Ishikawa) Framework, developed by Ishikawa (1986), is widely used to identify and categorize the root causes of a problem. In the context of e-commerce, shopping cart abandonment remains a major challenge affecting conversion rates and organizational profitability. Based on the reviewed literature, the causes of shopping cart abandonment can be classified into six major categories: Price and Cost, Payment Options, Process and Checkout, Product and Inventory, Trust and Security, and User Intent and Behavior.

Price and Cost-related factors are among the most significant causes of cart abandonment. Rajamma, Paswan, and Hossain (2009) found that unexpected costs, including shipping fees and taxes, increase



consumers' perceptions of transaction inconvenience and often lead to purchase discontinuation. Similarly, Kukar-Kinney and Close (2010) reported that consumers frequently abandon carts when they discover better prices or promotional offers on competing websites.

Payment-related factors also contribute substantially to abandonment behavior. According to Pavlou (2003), consumers are more likely to complete transactions when they perceive online payment systems as secure and trustworthy. Likewise, Belanger, Hiller, and Smith (2002) emphasized that concerns regarding privacy, financial security, and data protection negatively influence online purchasing decisions. Limited payment options and payment gateway failures further discourage consumers from completing purchases.

Process and Checkout factors involve issues related to website functionality and transaction complexity. Rose et al. (2012) highlighted that a lengthy and complicated checkout process can negatively affect the online customer experience and reduce purchase completion rates. Similarly, Flavián, Guinalú, and Gurrea (2006) found that website usability and ease of navigation are critical determinants of consumer satisfaction and online trust.

Product and Inventory factors include product unavailability, inadequate product descriptions, misleading information, and restrictive return policies. Consumers often abandon their carts when they perceive uncertainty regarding product quality or when desired products become unavailable during the purchasing process. These findings are supported by Collier and Bienstock (2006), who emphasized the importance of service quality and fulfillment accuracy in online retailing.

Trust and Security factors represent another major category influencing shopping cart abandonment. Pavlou (2003) demonstrated that trust serves as a key predictor of consumers' willingness to engage in e-commerce transactions. In addition, Belanger et al. (2002) argued that visible security measures, privacy policies, and trust seals help reduce perceived risk and encourage transaction completion.

Finally, User Intent and Behavior factors reflect the psychological and behavioral dimensions of online shopping. Moe (2003) observed that many consumers use shopping carts as information-gathering tools rather than as indicators of immediate purchase intentions. Similarly, Kukar-Kinney and Close (2010) noted that comparison shopping, browsing behavior, and purchase postponement are common reasons for cart abandonment. External distractions and changing consumer preferences further contribute to incomplete transactions.

The Fishbone Framework illustrates that shopping cart abandonment is a multidimensional phenomenon resulting from the interaction of economic, technological, operational, and behavioral

factors. Therefore, e-commerce businesses should adopt integrated strategies that address these root causes through transparent pricing, secure payment systems, streamlined checkout procedures, reliable inventory management, trust-building mechanisms, and enhanced customer experiences.



Source: Developed by the Authors based on the reviewed literature

**Figure 1. Fishbone Framework of Causes of Shopping Cart Abandonment in E-Commerce Platforms**

### 5. MANAGERIAL IMPLICATIONS

The findings of this review offer several important implications for e-commerce managers seeking to reduce shopping cart abandonment and improve conversion rates. First, online retailers should ensure complete price transparency by displaying all costs, including shipping fees, taxes, and service charges, at the early stages of the shopping process. Transparent pricing helps build trust and minimizes negative surprises during checkout (Xia, Monroe, & Cox, 2004). Second, businesses should simplify the checkout process by reducing the number of steps required to complete a purchase and offering guest checkout options. According to Wolfenbarger and Gilly (2003), a user-friendly website significantly enhances customer satisfaction and purchase intentions.

Third, e-commerce platforms should strengthen payment security by implementing secure payment gateways, encryption technologies, and visible trust indicators. Kim, Ferrin, and Rao (2008) found that trust and perceived security positively influence online purchasing behavior. Fourth, firms should continuously optimize website performance by improving page loading speed, mobile responsiveness, navigation, and overall usability. Website quality directly affects consumers' perceptions and purchasing decisions (Barnes & Vidgen, 2002).



In addition, effective inventory management is essential to prevent stock-outs and ensure product availability. Accurate product descriptions, high-quality images, and transparent return policies can further reduce consumer uncertainty and increase purchase confidence. Customer support services, including live chat and real-time assistance, can also help resolve concerns during the checkout process and encourage purchase completion. Finally, personalized marketing strategies such as abandoned-cart emails, targeted promotions, and customized recommendations can effectively re-engage potential customers and recover lost sales (Chaffey & Ellis-Chadwick, 2019). By addressing these key areas, e-commerce businesses can enhance customer experience, reduce shopping cart abandonment, and improve overall business performance.

## **6. RESEARCH GAPS AND FUTURE DIRECTIONS**

Despite the growing body of literature on shopping cart abandonment, several research gaps remain. First, many existing studies focus primarily on developed economies, while limited attention has been given to emerging markets where consumer behavior, technological infrastructure, and online shopping adoption patterns differ significantly (Cyr, 2008). Future research should examine shopping cart abandonment across diverse geographical and cultural contexts to enhance the generalizability of findings.

Second, previous studies have largely investigated individual factors influencing cart abandonment in isolation. However, shopping cart abandonment is a multidimensional phenomenon shaped by the interaction of economic, technological, psychological, and service-related factors. According to Liang and Lai (2002), a more integrated approach is required to understand the complex relationships among these determinants. Future studies may develop comprehensive models that examine the combined effects of multiple factors on abandonment behavior.

Third, the rapid growth of mobile commerce, social commerce, and omnichannel retailing has transformed consumer purchasing behavior. However, limited research has explored how these emerging shopping environments influence cart abandonment. Verkasalo et al. (2010) suggested that mobile-specific factors such as device usability, application performance, and location-based services may significantly affect purchase completion. Future studies should investigate cart abandonment behavior across different digital platforms and devices.

Another important gap relates to the use of advanced technologies such as artificial intelligence, machine learning, chatbots, and personalized recommendation systems. While these technologies are increasingly being adopted by e-commerce firms, their effectiveness in reducing shopping cart abandonment remains underexplored. Research by Huang and Rust (2021) indicates that AI-driven customer interactions have the potential to enhance customer experiences and influence purchase



decisions. Future research should evaluate the role of these technologies in minimizing abandonment rates.

Furthermore, most existing studies rely on cross-sectional survey data, limiting the ability to examine changes in consumer behavior over time. Longitudinal studies and real-time behavioral analytics could provide deeper insights into how consumers move through the online purchase journey and what factors trigger abandonment at different stages. Finally, future research should investigate the effectiveness of specific intervention strategies, such as personalized discounts, abandoned-cart recovery campaigns, and dynamic pricing mechanisms, in encouraging consumers to complete purchases. Addressing these gaps will contribute to a more comprehensive understanding of shopping cart abandonment and support the development of effective managerial strategies for e-commerce businesses.

## **7. CONCLUSION**

Shopping cart abandonment remains a major challenge for e-commerce businesses, significantly affecting sales performance, customer retention, and overall profitability. This review examined the key factors influencing shopping cart abandonment and identified cost-related factors, website and technical issues, payment and security concerns, consumer behavior, and delivery and service factors as the primary determinants. The Fishbone Framework provided a structured approach to categorizing these factors and understanding their root causes. The review highlights that shopping cart abandonment is a complex phenomenon resulting from the interaction of multiple technological, economic, operational, and psychological factors. Consumers are more likely to abandon their carts when they encounter unexpected costs, complicated checkout processes, security concerns, poor website performance, or delivery-related issues. At the same time, behavioral factors such as comparison shopping, purchase postponement, and lack of purchase intention also contribute significantly to abandonment behavior. To reduce shopping cart abandonment, e-commerce firms should focus on enhancing website usability, ensuring transparent pricing, providing secure and diverse payment options, improving delivery services, and offering personalized customer experiences. By addressing these critical factors, businesses can improve conversion rates, strengthen customer satisfaction, and gain a competitive advantage in the digital marketplace. Overall, this review provides a comprehensive understanding of the determinants of shopping cart abandonment and offers valuable insights for both researchers and practitioners seeking to improve e-commerce performance.

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