



“Decoding E-Commerce Drop-offs: Behavioural Insights into Online Shopping Cart Abandonment”

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ABSTRACT

Online shopping has revolutionized retail by providing consumers with convenience, access to a wide range of products, and the flexibility to shop anytime and anywhere. However, online shopping cart abandonment (OSCA) remains a critical challenge, resulting in significant revenue loss and reduced marketing effectiveness for e-commerce businesses. This study investigates the relationship between perceived lower price and hesitation to checkout, alongside other contributing factors such as perceived transaction inconvenience and the decision to buy from land-based retailers. It examines how consumers' expectations of finding lower prices, concerns about complex checkout processes, and preferences for physical retail experiences influence their likelihood of abandoning online carts. The research explores the psychological and behavioural mechanisms underlying these factors, identifying key points where hesitation occurs and how it leads to abandonment. Findings aim to provide actionable insights for online retailers, emphasizing strategies such as simplifying the checkout process, enhancing security and usability, integrating online and offline experiences, and implementing targeted recovery measures. By addressing the factors driving OSCA, e-commerce businesses can improve customer satisfaction, optimize conversion rates, and strengthen profitability in a competitive digital marketplace.

Keywords: Online Shopping Cart Abandonment, Hesitation to Checkout, Perceived Transaction Inconvenience, Perceived Lower Price, Land-Based Retailers

INTRODUCTION

Online shopping has become an important part of consumer life, especially after the COVID-19 pandemic. However, despite growth in e-commerce, many shoppers add products to their online cart but do not complete the purchase. This situation is called online shopping cart abandonment (OSCA) and is considered a major challenge for online retailers (Zheng et al., 2022). Cart abandonment not only reduces immediate sales but also affects customer loyalty and overall trust in online platforms (Shahriar et al., 2022). One major factor that contributes to OSCA is the wait for lower prices. Many customers treat the shopping cart as a “wishlist” rather than a final purchase decision. They often delay checkout, hoping for discounts, sales events, or price drops in the future (Xiao et al., 2021). Studies have shown that consumers are highly price sensitive in online markets, and this price-waiting behavior significantly reduces the likelihood of transaction completion (Wang et al., 2021).

Another related cause is hesitation during checkout. Even when consumers proceed to the payment stage, they may pause and reconsider their choice. This hesitation often arises from doubts about whether they are getting the best deal, concerns about product authenticity, or uncertainty about hidden costs (Zheng et al., 2022). The decision-making process becomes slower, and in many cases, consumers abandon the cart rather than risk making a purchase they may later regret (Shahriar et al., 2022). In addition, perceived transaction inconvenience plays a strong role in cart abandonment. Online shopping platforms sometimes have lengthy or complex checkout processes, require repeated data entry, or reveal unexpected fees such as shipping charges only at the final stage (Xiao et al., 2021). Research confirms that such inconveniences reduce consumer satisfaction and

increase the probability of cart abandonment (Wang et al., 2021). When the transaction process feels too complicated or risky, customers often abandon their purchase midway.

These challenges often push consumers back toward land-based retailers. Physical stores allow customers to examine products directly, avoid digital transaction risks, and make immediate purchases without waiting for delivery (Zheng et al., 2022). For many shoppers, the ability to physically inspect an item and complete a purchase with cash or card in one step outweighs the convenience of online shopping. The return to land-based retailers shows that despite the digital shift, traditional retail still holds an important advantage in trust and immediacy (Shahriar et al., 2022). A recent study based on the stimulus–organism–response (S-O-R) model highlights how these factors connect. The findings show that the wait for lower price acts as a stimulus that increases hesitation at checkout, which in turn leads to both cart abandonment and preference for physical retail purchases. Moreover, when transaction inconvenience is high, the effect of waiting on hesitation becomes even stronger (Zheng et al., 2022). Online cart abandonment is the result of several interconnected factors. Waiting for lower prices, hesitation at the checkout stage, and transaction inconvenience discourage online purchases. As a result, many consumers prefer to complete their purchases at land-based retailers. Understanding these causes is essential for e-commerce platforms to design better strategies to reduce cart abandonment and improve customer retention.

Relationship between Wait for Lower Price and Online Shopping Cart Abandonment

The idea of waiting for lower prices is an important reason for online shopping cart abandonment (OSCA). Many customers use online carts as a temporary list instead of a final purchase decision. They often delay buying, hoping that discounts or sales will appear later (Xiao et al., 2021). Online markets make this easier because customers can compare prices quickly across many platforms (Wang et al., 2021). Studies show that waiting for lower prices is closely linked to cart abandonment. Zheng et al. (2022) used the stimulus–organism–response (S-O-R) model to explain this link. Their study showed that waiting for a better price acts as a trigger. It creates hesitation during checkout, and this hesitation increases the chance of cart abandonment. They also found that when the checkout process is slow or includes extra costs, the effect of waiting for lower prices becomes stronger. Research also points out the role of consumer psychology. Shahriar et al. (2022) found that customers often feel torn between buying now and waiting for a discount. This creates hesitation and increases the chance that they will not complete the purchase. Many customers place items in their cart only to monitor the price. They wait until external incentives, such as discounts or promotions, make the purchase feel more worthwhile. Technology also plays a role. Price alerts, coupons, and notifications make it easier for customers to delay checkout. Customers see waiting as a smart way to save money, even if it increases abandonment (Xiao et al., 2021). So it is stated that:

H1: There Is relationship between perceived Lower price and OSCA.

Relationship between Hesitation to Checkout and Online Shopping Cart Abandonment

Hesitation to checkout is a major reason for online shopping cart abandonment (OSCA). Hesitation happens when customers reach the payment page but stop to think again. They may worry about the product quality, hidden charges, or the chance of paying more than they should (Shahriar et al., 2022). Because of these doubts, many customers leave their carts without completing the purchase. Zheng et al. (2022) explained this using the stimulus–organism–response (S-O-R) model. In their study, waiting for a lower price acted as the stimulus, hesitation was the organism, and abandonment was the response. Their results showed that when hesitation increases, the chance of cart abandonment also increases. This means hesitation works as a bridge between price concerns and the final decision not to buy. Hesitation is also made worse by transaction inconvenience. Wang et al. (2021) found that if the checkout process is too long or difficult, hesitation rises. Extra costs like shipping fees or compulsory account creation often appear late in the process. These surprises make customers stop and rethink. Psychological factors add to this problem. Xiao et al. (2021) showed that customers often fear missing a better deal in the future. This fear creates doubt and makes them avoid completing the purchase. In many cases, hesitation does not just delay the decision, but leads to full cart abandonment. Process barriers and customer doubts both play a role in creating hesitation, making it an important factor in online shopping behavior. So, it is argued that:

H2: There is a relationship between Hesitation at checkout and OSCA.

Relationship between Perceived Transaction Inconvenience and Online Shopping Cart Abandonment

Perceived transaction inconvenience is another strong reason for online shopping cart abandonment (OSCA). This inconvenience happens when customers feel that the checkout process is difficult, time-consuming, or confusing. It includes long forms, too many steps, or problems with payment options. Customers often abandon their carts when they believe the process is not smooth (Wang et al., 2021). Unexpected costs also increase transaction inconvenience. When shipping fees, service charges, or taxes appear only at the end, customers feel frustrated and lose trust in the seller. These surprises make them more likely to leave the checkout page (Shahriar et al., 2022). Zheng et al. (2022) found that transaction inconvenience does not just affect abandonment directly. It also makes other problems worse. For example, when customers are already waiting for a lower price, an inconvenient checkout process increases hesitation. This combination further raises the chance of cart abandonment. User experience studies also show that convenience is central to online shopping success. Xiao et al. (2021) explained that customers expect quick and simple transactions. Any extra step, such as mandatory account creation, can create dissatisfaction. This dissatisfaction often leads to abandoning the cart, even if the customer was initially ready to buy. Long, complex, or costly checkout processes make customers leave their carts. Reducing these inconveniences is essential for lowering abandonment rates and improving customer satisfaction. So, it is comprehended that:

H3: There is a relationship between perceived transaction inconvenience and OSCA

Relationship between Decision to buy from a land-based retailer and Online Shopping Cart Abandonment

The decision to buy from a land-based retailer is strongly linked to online shopping cart abandonment (OSCA). When customers feel uncertain about buying online, they often choose physical stores instead. This reduces the risks they associate with online shopping, such as fraud, delivery delays, or product mismatch (Shahriar et al., 2022). A major reason for this choice is the ability to see and test products in physical stores. Unlike online shopping, customers can check product quality directly before paying. Research shows that hesitation during online checkout often makes people turn to offline stores, where they feel more confident about their purchase (Zheng et al., 2022). Trust and convenience are also important. Land-based retailers provide instant ownership of products and easier return options. In contrast, online shopping often adds hidden fees, complex return rules, and long waiting times. Studies confirm that these problems increase the chance of cart abandonment and shift customers to offline buying (Wang et al., 2021; Cho et al., 2012). Earlier studies also found that offline stores are preferred when customers value immediacy and reliability over convenience (Kukar-Kinney & Close, 2010). Research shows that cart abandonment often leads to purchases in physical stores. Offline retailers reduce uncertainty, provide instant satisfaction, and remain a strong alternative to online platforms. So it is hypothesised that:

H4: There is a relationship between Decision to buy from Land based retailer and OSCA

RESEARCH METHODOLOGY

This study adopted a descriptive research design to examine the factors influencing online shopping cart abandonment. A descriptive research design was considered appropriate because it helps to understand consumer behaviour, attitudes, and characteristics in a systematic manner. The study used both primary and secondary data. Primary data were collected through a structured questionnaire consisting of 24 items measured on a 5-point Likert scale, where 1 represented "Strongly Disagree" and 5 represented "Strongly Agree." The questionnaire was distributed to 300 respondents using the convenience sampling method. A total of 248 responses were received, and 200 fully completed questionnaires were selected for the final analysis. Secondary data were obtained from academic journals, research articles, and reliable online sources to provide theoretical support for the study. The target population comprised consumers from Kerala aged between 18 and 45 years, selected based on accessibility and relevance to the research objectives. The questionnaire measured the key variables of Wait for Lower Price, Hesitation to Checkout, Perceived Transaction Inconvenience, and Decision to Purchase from Land-Based Retailers, along with collecting the respondents' demographic information.

Structural Equation Model and Hypotheses Testing

A Structural Equation Modeling (SEM) approach was used to examine the cause-and-effect relationships between the key factors of the study. SEM helps analyze how variables influence each other using both statistical data and theoretical assumptions. It has two main parts: a Structural Model, which shows the relationships between hidden (latent) variables, and a Measurement Model, which defines the observable indicators used to measure those variables. The data analysis was conducted using Warp PLS 8.0, a Partial Least Squares (PLS) software. The model was estimated using the PLS regression algorithm along with a bootstrapping resampling method to increase the explained variance. The analysis provided path coefficients, p-values, indicator weights, loadings, and factor scores, which helped test the hypotheses and understand the relationships between variables.

Figure1. Structural model showing path coefficients and significance level

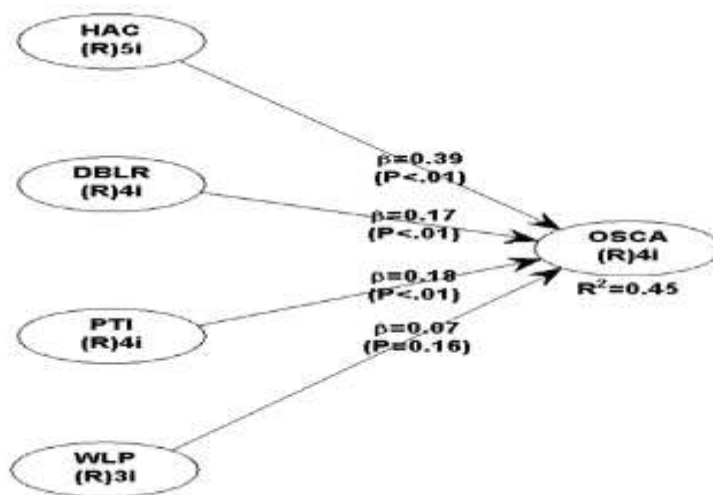


Table 1. Assessment of latent variables' quality

MEASURES	CRITERIA	LATENT VARIABLES				
		HAC	OSCA	DBLR	PTI	WLP
R ²	Large effect ≥0.35		0.446			
Adjusted R ²	Large effect ≥0.35		0.435			
Composite reliability	Greater than 0.70	0.869	0.845	0.894	0.828	0.811
Cronbach alpha	Greater than 0.70	0.810	0.756	0.842	0.721	0.649
Average variance extracted	Greater than 0.50	0.573	0.578	0.679	0.551	0.589
Full collinearity VIF	Less than 3.3	1.947	1.728	1.791	2.088	1.639
Q-squared	Greater than 0		0.450			
Skewness	Range from -2 to +2	-0.791	-1.009	-0.776	-0.409	-0.901
Kurtosis	Range from -7 to +7	0.352	0.744	-0.141	-0.505	0.892
HAC – Hesitation to Checkout, OSCA- Online Shopping Cart Abandonment, DBLR – Decision to buy from Land based retailer, PTI- Perceived Transaction Inconvenience						

The assessment of latent variables indicated that the model fits the data well. The R-squared value for the dependent variable, Online Shopping Cart Abandonment (OSCA), was 0.446, which is above the moderate level according to Cohen's (1988) criteria. This suggests that approximately 44–45% of the variance in OSCA is explained by the independent variables. This finding aligns with the recommendations of Hair et al. (2014) and

Wong (2013). The model demonstrated strong internal reliability, as both composite reliability and Cronbach's alpha values exceeded 0.8. Predictive relevance was also confirmed, with a Q^2 value of 0.450 for OSCA, indicating that the independent variables effectively predict the dependent variable (Hair et al., 2014; Kock, 2015; Sarstedt et al., 2014). Convergent validity was established, with the average variance extracted (AVE) exceeding the minimum threshold of 0.5. The full collinearity variance inflation factor (VIF) was below 3.3, showing no issues with multicollinearity or common method bias (Kock, 2015, 2019). The data also met normality requirements, with skewness values between -2 and +2 and kurtosis values between -7 and +7 (Brown, 2006; Kline, 2016). These results indicate that the measurement model is reliable and suitable for further analysis.

Table 2. Model Fit Indices

Model Quality Assessment		
Parameters (Average)	Results	Significance/ expected
Average path coefficient (APC)	0.200	$P < 0.001$
Average R-squared (ARS)	0.446	$P < 0.001$
Average adjusted R-squared (AARS)	0.435	$P < 0.001$
Average block VIF (AVIF)	1.804	acceptable if ≤ 5 , ideally ≤ 3.3
Average full collinearity VIF (AFVIF)	1.839	acceptable if ≤ 5 , ideally ≤ 3.3
Tenenhaus GoF (GoF)	0.515	small ≥ 0.1 , medium ≥ 0.25 , large ≥ 0.36
Sympson's paradox ratio (SPR)	1.000	acceptable if ≥ 0.7 , ideally = 1

The assessment of latent variables and model fit indices confirmed that the structural path model was appropriate and robust. The R^2 value for the dependent variable fell between moderate and large, indicating substantial explanatory power and statistical significance. The average path coefficient was significant at $p < 0.05$, while variance inflation factors (VIFs) were below 3.3, demonstrating the absence of multicollinearity. Reflective indicators exhibited loadings of 1.000, and formative indicators showed loadings above 0.7, confirming convergent validity. The model demonstrated strong overall fit, with a goodness-of-fit (GoF) value of 0.515. Discriminant validity was also established, as the loadings of latent variables were consistently higher than those of related constructs, indicating that each construct is distinct and well-measured (Kock, 2015; Sarstedt et al., 2014). These results collectively indicate that the measurement and structural models are reliable, valid, and suitable for hypothesis testing and interpretation of the relationships among the study variables.

Table 3. Path analysis of structural model

Path	β Value	SE	p-value	effect size (f^2)	Hypothesis
HAC→OSCA	0.39	0.066	< 0.01	0.235	Supported
DBLR→OSCA	0.17	0.069	< 0.01	0.084	Supported
PTI→OSCA	0.18	0.69	< 0.01	0.096	Supported
WLP→OSCA	0.07	0.70	$= 0.16$	0.031	Not Supported

The results of the structural model indicate that hesitation to checkout is the most significant predictor of online shopping cart abandonment (OSCA), with a path coefficient of $\beta = 0.39$ ($p < 0.01$), suggesting that customers

who hesitate at the payment stage are substantially more likely to abandon their carts. Perceived transaction inconvenience, including factors such as lengthy forms, mandatory registration, technical issues, or limited payment options, also has a significant positive effect on cart abandonment ($\beta = 0.18$, $p < 0.01$). Similarly, the decision to purchase from land-based retailers contributes to OSCA ($\beta = 0.17$, $p < 0.01$), as some consumers rely on online platforms for research but prefer to finalize transactions in physical stores for immediate possession or tactile assurance. In contrast, the expectation of a lower price was found to have an insignificant impact on cart abandonment ($\beta = 0.07$, $p = 0.16$, $f^2 = 0.031$). Overall, the model demonstrates a moderate to strong explanatory power, accounting for 44.6% of the variance in OSCA ($R^2 = 0.446$), highlighting its effectiveness in predicting online shopping cart abandonment behaviour.

DISCUSSION

To reduce online shopping cart abandonment, businesses should make the checkout process simple and convenient. The number of checkout steps should be minimized, and customers should be allowed to complete purchases without creating an account. Clear progress indicators can help customers understand how many steps remain. All costs, including shipping charges, taxes, and other fees, should be displayed at the beginning of the checkout process to avoid unexpected expenses. Online shopping platforms should also be fast, mobile-friendly, and easy to use. Features such as autofill options, simple forms, and multiple secure payment methods, including UPI, digital wallets, and credit or debit cards, can improve the shopping experience and encourage customers to complete their purchases.

Retailers should also focus on building customer trust and reducing uncertainty during online shopping. Displaying security badges, secure payment gateways, and clear return and refund policies can increase customer confidence. Since some consumers prefer to inspect products in physical stores before buying, retailers can provide services such as in-store pickup, real-time stock availability, and live customer support through chat or video. In addition, personalized cart recovery strategies, such as reminder emails, push notifications, limited-time discounts, and free shipping offers, can encourage customers to return and complete their purchases. Regularly analysing customer behaviour during the checkout process can help businesses identify problems and continuously improve the online shopping experience, leading to higher conversion rates and lower cart abandonment.

CONCLUSION

This study examined the key factors influencing online shopping cart abandonment (OSCA), including hesitation to checkout, perceived transaction inconvenience, perceived lower price, and the decision to purchase from land-based retailers. Results show that hesitation at checkout is the strongest predictor of abandonment, followed by transaction inconvenience and the preference for physical stores, while the expectation of a lower price was not significant. The findings suggest that e-commerce businesses should simplify checkout processes, enhance trust through secure and transparent systems, and integrate online and offline retail experiences. Implementing strategies such as guest checkout, streamlined forms, real-time support, in-store pickup, and targeted recovery campaigns can improve the customer journey, reduce abandonment, and increase conversion rates. The study provides actionable insights into consumer behavior, offering guidance for enhancing customer satisfaction and competitiveness in the digital marketplace.

REFERENCES

1. Brown, T. A. (2006). *Confirmatory factor analysis for applied research*. Guilford Press.
2. Cho, C. H., Kang, J., & Cheon, H. J. (2012). Online shopping hesitation. *Journal of Business Research*, 65(12), 1761–1765.
3. Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.
4. Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2014). *A primer on partial least squares structural equation modeling (PLS-SEM)*. SAGE Publications.
5. Kline, R. B. (2016). *Principles and practice of structural equation modeling* (4th ed.). Guilford Press.



6. Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration*, 11(4), 1–10. <https://doi.org/10.4018/ijec.2015100101>
7. Kock, N. (2019). *WarpPLS 7.0 User Manual*. ScriptWarp Systems.
8. Kukar-Kinney, M., & Close, A. G. (2010). The determinants of consumers' online shopping cart abandonment. *Journal of the Academy of Marketing Science*, 38(2), 240–250.
9. Sarstedt, M., Ringle, C. M., & Hair, J. F. (2014). Partial least squares structural equation modeling. In C. Homburg, M. Klarmann, & A. Vomberg (Eds.), *Handbook of market research* (pp. 1–40). Springer.
10. Shahriar, M. S., Nand, A., & Miah, M. S. (2022). Investigating consumer online shopping cart abandonment behavior. *Journal of Retailing and Consumer Services*, 67, 102956.
11. Wang, J., Guo, J., & Li, H. (2021). Online cart abandonment: The role of perceived risk and transaction inconvenience. *Electronic Commerce Research and Applications*, 47, 101046.
12. Wong, K. K. K. (2013). Partial least squares structural equation modeling (PLS-SEM) techniques using SmartPLS. *Marketing Bulletin*, 24, 1–32.
13. Xiao, L., Guo, F., Yu, F., & Liu, S. (2021). Understanding the impact of online cart abandonment: An empirical study. *Frontiers in Psychology*, 12, 829696.
14. Zheng, X., Men, J., Yang, F., & Gong, X. (2022). Online shopping cart abandonment: The mediating role of hesitation and the moderating role of transaction inconvenience. *Frontiers in Psychology*, 13, 829696.