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CONSUMER BEHAVIOR| RESEARCH ARTICLE

Gender Differences in Shopping Cart Abandonment: Evidence from Indonesia

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Abstract:

Background: Shopping cart abandonment (SCA) remains a persistent challenge in e-commerce. Consumers frequently leave purchases incomplete due to psychological, technical, economic, and contextual factors. However, limited research has examined how demographic characteristics, particularly gender, shape abandonment behavior.

Purpose: This research investigates the antecedents of SCA in Indonesia's e-commerce context and examines differences in these factors between male and female consumers within the Theory of Planned Behavior (TPB) framework.

Method: A quantitative research design was employed, using survey data from 300 Indonesian e-commerce users (147 males and 153 females). Data were collected via an online questionnaire and analyzed using multiple regression. Separate regression models were estimated to compare the influence of psychological, technical, economic, and contextual factors across gender groups.

Findings: The results reveal distinct gender-based patterns. For women, psychological and economic factors exert stronger effects on SCA, with emotional ambivalence and price sensitivity emerging as dominant predictors. For men, technical factors, particularly checkout friction and website performance, play a more prominent role. These findings indicate differences in emotional, cognitive, and control-related evaluations in online shopping.

Conclusions: Gender-specific factors shape SCA behavior in Indonesia, with women more influenced by psychological and economic considerations, while men respond more strongly to technical barriers.

Research implication: This research provides practical guidance for e-commerce platforms to implement gender-responsive strategies, such as emotional reassurance and pricing transparency for women and streamlined checkout processes for men, to reduce abandonment and improve conversions. Academically, the findings highlight the importance of incorporating gender differences when applying the Theory of Planned Behavior to online consumer behavior.

Keywords: consumer behavior, e-commerce, gender differences, shopping cart abandonment, theory of planned behavior

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PUBLIC INTEREST STATEMENT

This study focus our research on the intersection of marketing, management, and consumer behavior, examining how individuals and organizations adapt to the dynamic digital marketplace. Our interest lies in understanding how communication strategies, trust, and technology shape purchasing decisions and business performance. However, this field presents significant challenges, including the rapid shift of digital trends, data reliability, and the difficulty of linking consumer insight with managerial decision-making in real time.

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1. Introduction

E-commerce has become an enormous phenomenon in Indonesia. In 2024, it was reported that the country had 65.7 million e-commerce users, with steady annual growth of 11-15%. It is projected that the number of users will reach 99.1 million by 2029 (Khaira, 2024). With this user base, total e-commerce transactions are substantial. Electronic Commerce Data Base/ECBD (2025) revealed that the e-commerce revenue in Indonesia reached US$ 70.7 billion, with an annual CAGR of 22%. In 2028, revenue is projected to reach US$ 198.6 billion. These figures solidify Indonesia's position as the largest e-commerce market in Southeast Asia. The country accounts for 64% of total e-commerce revenue in the Asia-Pacific region. Rakuten's survey reported in Electronic Commerce Data Base/ECBD (2025) indicates that 37% of Indonesians use e-commerce weekly to make a purchase.

Despite its promising outlook, the industry continues to face many challenges. One of these is Shopping Cart Abandonment (SCA) (Sundjaja et al., 2024). According to Wang et al. (2022), this occurs when a customer adds items to their cart but then abandons the purchase. Globally, e-commerce platforms experience an SCA rate of 60–70%, meaning that 6-7 out of 10 users who add items to their cart ultimately abandon the transaction (Statista, 2025). This number is considerably high and detrimental to e-commerce businesses. As a result, they allocate resources to attract users to their website or application and encourage them to add products to their carts. However, the results fall short of expectations. Moreover, high volumes of browsing without purchase can strain server capacity (Rubin et al., 2020). During major promotional events, such as twin-date sales, e-commerce often experiences slow loading times, which may frustrate potential customers and further increase SCA rates (Nigam et al., 2020). Data from the Baymard Institute (2023) reveal that SCA has resulted in approximately $18 billion in lost sales revenue annually.

Given the extensive losses caused by SCA, it is essential to understand the factors that shape it. Such comprehension can inform the development of effective marketing strategies to influence consumer behaviour and significantly reduce SCA. These insights benefit not only e-commerce but also the sellers who can use them to increase product sales.

Several studies have examined the antecedents of SCA in e-commerce. Kukar-Kinney and Close (2010) classified the antecedents of SCA into several categories. The first category comprises customers who do not see e-commerce as a purchasing channel. Instead, according to Palos-Sanchez et al. (2022), they perceive it as a source of entertainment and/or a shopping organizational tool. The second category includes customers who abandon their carts due to frugality, seeking better deals or comparing prices across platforms before purchasing. Jiang et al. (2021) referred to this group as "bargain-seekers". The third category is the customers who encounter bottlenecks, such as poor website or application performance, poor internet connection, and other obstacles that complicate the checkout process. Consequently, they experience frustration and abandon their cart (Palos-Sanchez et al., 2022). The fourth category involves customers concerned about issues such as privacy and security, product quality, shipping safety, and many more. Close et al. (2012) highlighted that users abandon their shopping carts because they cannot tolerate the risk.

Meanwhile, Kapoor and Vij (2021) identified several factors contributing to SCA among customers of the largest online retailer in India, including cross-channel price disparities, shipping costs, ratings and reviews, and platform aesthetic design. Their findings indicate that after adding products to the shopping cart, customers often feel dissatisfied and

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explore other e-commerce platforms, leading to platform switching and cart abandonment. Huang et al. (2018) argued that SCA occurs when customers experience conflicting thoughts, leading to emotional ambivalence. This conflict is not only caused by external factors but also internal ones, such as low self-efficacy.

These studies commonly relate to the Theory of Planned Behaviour (TPB) proposed by Ajzen (1991). According to this theory, consumer behaviour, including completing or abandoning a purchase, is influenced by attitudes, perceived control, and subjective norms. Psychological factors, including emotional ambivalence and self-efficacy, represent attitudes and control, while contextual elements, such as trust, reflect subjective norms. This theory served as the grand theory in this research, as it provides a comprehensive lens for explaining how individual cognition, social influence, and perceived behavioural control jointly shape the likelihood of shopping cart abandonment. Referring to TPB, this research includes variables aligned with its core constructs. Emotional ambivalence, escapism, perceived total cost, price sensitivity, and sale expectation correspond to attitude toward behaviour. Security and trust concerns fall under subjective norms. While self-efficacy, website performance, and checkout frictions represent perceived behaviour control.

Unfortunately, many studies on SCA that use TPB as the grand theory do not include demographic factors such as gender to compare male and female online shopping behaviour. This creates a strong urgency because excluding gender factors in consumer behaviour research risks oversimplifying the behaviour. Prior research highlights that men and women differ in motivations, emotional responses, and risk perceptions (Kanwal et al., 2022; Kuruvilla et al., 2009), which can influence purchase completion. Thus, integrating gender into the analysis can provide a more nuanced understanding of SCA.

To address this gap, the research introduces a novel approach by incorporating gender as a moderating variable in measuring the antecedents of SCA in the Indonesian e-commerce context. Thus, the research not only examines universal antecedents of SCA but also extends TPB by including gender as a predictive pathway. Specifically, it examines whether men and women differ in their perceptions of attitudes, control, and subjective norms in online shopping.

This study aims to analyse the antecedents influencing shopping cart abandonment behaviour in Indonesian e-commerce. It also examines how gender moderates the relationships between psychological, technical, and economic factors, rooted in TPB constructs, and actual abandonment behaviour. The findings are expected to contribute to both practical applications and theoretical knowledge in the field of e-commerce. By elucidating the nuanced interplay between demographic factors and SCA behaviour, this research informs the development of gender-tailored marketing strategies and user experience optimizations. Ultimately, these insights are expected to extend the TPB model and help Indonesian e-commerce platforms enhance customer satisfaction, increase conversion rates, and promote sustainable growth in the expanding e-commerce market.

2. Literature Review

2.1 Theory of Planned Behavior in the Context of Shopping Cart Abandonment

The Theory of Planned Behavior (TPB) is widely used to explain consumer decision-making, including online purchasing behavior. TPB posits that behavior is shaped by three core constructs: attitude toward the behavior, perceived behavioral control, and subjective norms. Attitude reflects an individual's evaluation of performing the behaviour, perceived behavioural control captures confidence in executing it, and

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subjective norms represent perceived social expectations (Simamora & Djamaludin, 2020; Ridhayani & Johan, 2020). Collectively, these constructs influence behavioural intention and subsequent action.

In the context of shopping cart abandonment (SCA), TPB provides a coherent framework for understanding why consumers abandon their shopping carts. Psychological factors such as emotional ambivalence and self-efficacy reflect attitude and perceived behavioral control (Huang et al., 2018), whereas trust and security concerns relate to normative and control-based evaluations of transaction risk. Prior studies applying TPB to SCA consistently show that negative attitudes, low perceived control, and heightened risk perceptions increase the likelihood of abandonment (Patharia & Jain, 2023; Chopra et al., 2024; Sharma & Srivastava, 2025).

However, existing TPB-based studies on SCA largely assume homogeneous effects across consumers and rarely examine whether these relationships differ by demographic characteristics. In particular, limited attention has been given to gender as a differentiating condition within TPB relationships. This study addresses this gap by examining whether TPB-related antecedents of SCA operate differently for male and female consumers in the Indonesian e-commerce context, thereby extending prior research through a gender-based analytical perspective.

2.2 Shopping Cart Abandonment: Global to National Scale

Shopping Cart Abandonment (SCA) refers to consumers who add products to a virtual cart but leave the platform without completing the purchase (Rubin et al., 2020). Empirical evidence indicates that SCA is a structural problem in e-commerce, with a global average rate of 70.19% across 49 countries (Baymard Institute, 2023). Such a high rate suggests that abandonment is not incidental but reflects systematic behavioral patterns in online purchasing.

Beyond behavioral implications, SCA generates substantial economic consequences. Firms invest heavily in advertising and customer acquisition, yet abandonment prevents converting traffic into revenue, increasing acquisition costs and reducing profitability (Mittal, 2023). Technical strain caused by excessive browsing without purchase may further degrade platform performance and user experience (Kumar & Tiwari, 2024). Globally, revenue losses associated with SCA are estimated at USD 18 billion annually (Baymard Institute, 2023). Although Indonesia lacks official SCA statistics, extrapolation from global averages suggests significant unrealized revenue potential, underscoring the urgency of understanding abandonment behavior in this context. Prior studies have identified psychological, technical, and economic determinants of SCA (Yusuf et al., 2021; Irawan et al., 2025). However, most adopt findings from non-Indonesian contexts and rarely incorporate demographic differentiation, particularly gender. This limitation limits the explanatory depth of existing models and underscores the need for context-specific, gender-sensitive analysis of SCA in Indonesian e-commerce.

2.3 Antecedents of Shopping Cart Abandonment

This research identified several antecedents of SCA based on the Theory of Planned Behaviour. Emotional ambivalence, escapism, perceived total cost, price sensitivity, and sale expectation correspond to attitude toward behaviour. Security and trust concerns fall under the subjective norm. While self-efficacy, website performance, and checkout frictions represent perceived behavioural control (Patharia & Jain, 2023; Chopra et al., 2024; Sharma & Srivastava, 2025). These variables are further categorized into psychological, technical, economic, and contextual factors based on their nature.

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2.3.1 Relationship of Psychological Factors and Shopping Cart Abandonment

Psychological factors represent internal drivers of behavior, including motivation, cognitive evaluation, and emotional conflict. Emotional ambivalence has been identified as a key antecedent of shopping cart abandonment (SCA) (Huang et al., 2018). Consumers may simultaneously experience desire and doubt, such as excitement about a product alongside guilt or concerns about overspending. This internal conflict weakens purchase commitment and increases the likelihood of postponement or abandonment.

Self-efficacy is also essential in shaping SCA. Defined as an individual's belief in their ability to perform a specific behavior, self-efficacy influences whether purchase intention translates into action. Sharma and Srivastava (2025) found that consumers with higher self-efficacy tend to complete transactions, whereas those with lower confidence tend to overanalyze decisions and withdraw from the process. This suggests that perceived behavioural control is central in reducing abandonment.

Another relevant psychological factor is the motivation to escape. Online shopping is often used as a form of entertainment or emotional coping rather than solely as a transactional activity (Mir, 2021). Mazhar et al. (2023) note that consumers may browse, add items to their carts, and derive temporary pleasure without intending to purchase. In such cases, the cart functions symbolically rather than transactionally, thereby increasing the structural likelihood of abandonment. Collectively, these findings indicate that SCA is not merely a technical or economic issue but is deeply embedded in consumers' psychological evaluations and emotional regulation processes.

H1: Higher emotional ambivalence increases the likelihood of shopping cart abandonment.
H2: Higher consumer self-efficacy decreases shopping cart abandonment.
H3: Consumers who use e-commerce for escapism are more likely to abandon their carts.

2.3.2 Relationship of Technical or System-related Factors and Shopping Cart Abandonment

These issues include slow website performance, checkout errors, poor user interface design, or a lack of mobile optimization. Kukar-Kinney and Close (2009) highlight that when customers encounter any technical bottlenecks, such as page lag, system crashes, or confusing navigation, they tend to quit mid-purchase. This is especially relevant during peak shopping days or events, such as 11.11 or 12.12, when server overload is common, and performance often suffers (Zhang et al., 2018).

Sundjaja (2024) categorized these technical and system-related issues under the variable of a complicated checkout process, which have significant influence on SCA behaviour. The indicators include requirements to register before checkout, requests for excessive information, or offering too few payment methods, which can quickly frustrate users. These obstacles are commonly referred to as checkout friction. In today's fast-paced digital landscape, convenience and speed are critical; thus, any friction may cause consumers to exit the process entirely.

H4: Poor website performance (e.g., longer page loading times) increases shopping cart abandonment.
H5: Higher checkout friction increases shopping cart abandonment.

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2.3.3 Relationship of Economic Factors and Shopping Cart Abandonment

These relate to pricing strategy, additional costs, or lack of perceived value. Kapoor and Vij (2021) found that price sensitivity and expectations of free shipping heavily influence SCA in India's e-commerce market. Many Indonesian users likely share similar behaviours, often comparing prices across platforms and abandoning carts when unexpected shipping fees or taxes appear at checkout.

The economic profile of most Indonesian e-commerce users, predominantly middle class, also contributes to this behavior. Li et al. (2023) note that middle-class users with limited disposable income are highly price-sensitive and will go the extra mile to find the best value. Rochanapon et al. (2021) emphasized that because of this mindset, users often treat their cart not as the final step before purchase but as a temporary space for comparison and evaluation. Song (2019) refers to price change as price dispersion. Additional charges, such as shipping, handling, or taxes, disclosed only at the final stage, may prompt customers to reconsider their decision. The likelihood increases when the perceived value of the product no longer matches the total cost. It explains why price dispersion consistently ranks among the top triggers of SCA.

Moreover, Indonesia frequently holds promotional events, such as Harbolnas (Hari Belanja Online Nasional) or twin-date campaigns like 10.10 or 12.12. A similar study in China by Zhang et al. (2018), which pioneered twin-date promotional events, found that many consumers engage in SCA while waiting for a better deal during these campaigns. Kukar-Kinney and Close (2010) argue that sales events have conditioned users to delay purchases until these events. Shoppers often fill their carts in advance and wait for price reductions. In such cases, SCA may not indicate a lack of interest but rather a strategic postponement aimed at maximizing savings.

H6: Higher perceived total cost (including shipping and taxes) increases shopping cart abandonment.
H7: Higher price sensitivity increases shopping cart abandonment.
H8: Promotional sale expectations increase shopping cart abandonment before event days.

2.3.4 Relationship of Security and Trust Concerns and Shopping Cart Abandonment

Trust plays a vital role in online shopping, especially in regions where digital fraud remains prevalent (Kuska et al., 2024). Kukar-Kinney and Close (2009) emphasized that concerns about payment security, personal data privacy, and product authenticity often deter users from completing a purchase.

Sundjaja et al. (2024) highlighted that these trust-related concerns are associated with the mixed emotions users often experience at checkout, leading to indecision and insecurity. New or less familiar e-commerce platforms are more vulnerable to this trust gap; however, even established platforms have recently experienced rising trust issues. This is largely due to the increasing number of irresponsible sellers and fraudulent activity within the system. Wang et al. (2022) note that consumers may question whether a product will match its description, arrive on time, or even arrive at all. Negative experiences shared on social media or review platforms further increase these doubts. As a result, many users abandon their carts not because of a lack of interest, but because they do not trust the process enough to proceed with the purchase.

H9: Greater security and trust concerns increase shopping cart abandonment.

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2.3.5 The Moderating Role of Gender on the Relationship between Antecedents and Shopping Cart Abandonment

Despite these well-documented behavioural differences, existing studies on SCA in Indonesia rarely test gender as a moderating variable. Most research focuses on psychological, technical, or economic factors but assumes homogeneity across users (Sundjaja et al., 2024; Yusuf et al., 2022). Consequently, there is a huge research gap, which excludes gender from study on SCA, leading to failure in fully understanding how men and women differentially respond to SCA triggers. Thus, e-commerce might miss the opportunity to design tailored strategies to address these differences. Therefore, this study aims to fill the gap. It can be conducted by investigating whether gender moderates the relationships between key antecedents (emotional ambivalence, self-efficacy, escapism, technical barriers, costs, promotions, and trust concerns) and SCA.

2.3.5.1 Gender, Emotional Ambivalence, and Shopping Cart Abandonment

Long-standing research has documented gender differences in online purchasing behaviour. Many studies indicate that men and women vary in their online shopping motivations, decision-making processes, and emotional reactions (Zeytoon-Nejad, 2025), all of which could affect SCA rates. For example, González et al. (2021) found that women tend to show greater emotional engagement in shopping than men, making them more vulnerable to emotional ambivalence during the buying process. Among female consumers, this ambivalence is defined by conflicting emotions, such as desire and guilt, which could increase the likelihood of SCA. Similarly, Kuruvilla et al. (2009) observed that women are usually more emotionally engaged in the shopping experience than men. Online shopping could cause them more internal conflict, such as guilt and excitement, which can contribute to higher SCA due to the implications of this inner struggle.

H10: The relationship between emotional ambivalence and SCA is stronger among women than men.

2.3.5.2 Gender, Self-Efficacy, and Shopping Cart Abandonment

The gender disparities also pertain to self-efficacy, especially in decision-making. Zhao and Xie (2023) claim that men, who often take a more rational and goal-oriented approach to shopping, exhibit greater confidence in their purchasing decisions and are more likely to complete transactions. Conversely, women with lower self-efficacy may second-guess choices, overanalyse them, or finally abandon their carts. This difference in confidence levels often leads to varying online shopping behaviors, with men making quicker decisions and showing less hesitation at checkout. In contrast, women's lower self-assurance in evaluating product quality or price fairness can heighten uncertainty, increasing their susceptibility to cart abandonment when faced with too many options or unclear information.

H11: The negative relationship between self-efficacy and SCA is stronger among men than women.

2.3.5.3 Gender, Escapism, and Shopping Cart Abandonment

A study highlighted that escapism is a key motivation for individuals to engage in online shopping, as it helps them cope with loneliness and provides positive emotional feedback. Shopping thus becomes a form of mood regulation, offering temporary distraction and pleasure without necessarily aiming to complete purchases (Mendini & Furchheim, 2025).

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This tendency is higher among women than among men. Women often browse e-commerce platforms aimlessly, using the activity as a light-hearted escape from stress or boredom (Mir, 2021). Since the activity centers on emotional relief rather than transaction completion, this behaviour raises the likelihood of abandoning a cart. By contrast, men often approach shopping more deliberately, which might reduce their SCA rates in escapism-driven situations. Furthermore, studies reveal that women are more sensitive to unanticipated expenses and pricing. Hidden costs or limited offers may discourage purchase completion (Li et al., 2023). Therefore, when the emotional reward from browsing fades or is replaced by frustration, such as encountering confusing layouts, slow loading times, or unexpected costs, women are more likely to exit before completing the transaction. This suggests that emotional motivations, including the desire for relaxation or mood improvement, significantly influence women's online shopping behavior and amplify their tendency to abandon carts when the experience no longer feels rewarding.

H12: Escapism leads to higher SCA rates among women than men.

2.3.5.4 Gender, Website Performance, and Shopping Cart Abandonment

Prior studies suggest that interface and performance issues influence women more than men. It amplifies emotional ambivalence and reduces perceived trustworthiness (Dharmesti et al., 2021). Wang and Han (2022) added that complicated and lengthy checkout processes are also perceived as barriers, especially by female consumers, and may trigger SCA. This indicates that women's sensitivity to usability and design flaws may stem from their stronger emphasis on assurance, security, and convenience when evaluating online platforms.

H13: The relationship between website performance and SCA is stronger among women than men.

2.3.5.5 Gender, Checkout Friction, and Shopping Cart Abandonment

Conversely, Kuruvilla et al. (2009) found that men exhibit greater tolerance for technical inefficiency, consistent with their goal-oriented nature. However, they may still abandon their carts if friction disrupts their streamlined purchase intentions. Such patterns highlight the importance of a seamless UX design that accommodates gender-specific expectations (Makhitha & Ngobeni, 2021). Thus, while men may initially overlook minor interface issues, significant checkout barriers that impede progress or reduce control can still prompt transaction abandonment.

H14: Checkout friction leads to higher SCA rates among men than women

2.3.5.6 Gender, Perceived Cost, and Shopping Cart Abandonment

Studies reveal that women are generally more price-conscious than men. They tend to pay closer attention to promotions, discounts, and overall value for money (Wahab et al., 2023). In many cases, they intentionally seek special offers or compare prices across multiple platforms to ensure the most cost-efficient purchase. Consequently, unclear pricing, unexpected delivery fees, or additional charges may have a stronger psychological and behavioral impact on female consumers (Tewary et al., 2021). When pricing is opaque, women, who are more attuned to cost details, are more likely to perceive the purchase as risky or unfair, increasing their likelihood of cart abandonment. This highlights the stronger influence of perceived cost on women's purchase decisions, as they are particularly sensitive to deviations from expected total spending.

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H15: Perceived costs have a stronger effect on SCA among women than men.

2.3.5.7 Gender, Price Sensitivity, and Shopping Cart Abandonment

A similar pattern in how gender moderates the relationship between price sensitivity and SCA can also be interpreted through the Theory of Planned Behavior (TPB), where perceived behavioral control and attitudes toward spending influence purchase decisions. According to Rehman et al., (2024) women's price sensitivity reflects not only economic caution but also emotional reassurance in making a "smart" purchase. When these expectations are not met, such as when discounts are not applied or price changes occur at checkout, female shoppers may experience diminished trust or control, prompting them to delay or cancel the transaction.

H16: Price sensitivity has a stronger effect on SCA among women than men.

2.3.5.8 Gender, Promotional Sale Expectation, and Shopping Cart Abandonment

A study also shows that women are more likely than men to abandon their cart if they anticipate a better deal in the future, showing a stronger association between cost perceptions and behavioral intention (Miranda et al., 2024). This expectation of future promotions or improved discounts often reflects both rational decision-making and emotional anticipation of "securing" a better offer. Such anticipation further reinforces delay behavior, as women prefer to wait for price reductions or bundled promotions before completing a purchase (Rehman et al., 2024). Hence, when promotional incentives are weak or absent, their purchase intention declines rapidly, increasing the likelihood of SCA.

H17: Promotion sale expectation has a stronger effect on SCA among women than men.

2.3.5.9 Gender, Security and Trust Concerns, and Shopping Cart Abandonment

Studies indicate that women are more risk-averse than men, particularly regarding payment security and privacy in online shopping environments (Zeytoon-Nejad, 2025). Women consumers also appear to be more affected by concerns about trust and security. Women are more likely to leave their carts when faced with uncertainty about data privacy or payment security, as higher risk aversion influences their decisions (Chetioui et al., 2020). While these factors explain much of SCA behaviour, prior research has not tested how gender might influence these relationships. This limits our ability to determine whether men and women respond differently to these antecedents.

H18: Security and trust concerns are more likely to increase SCA among women than men.

3. Conceptual Framework

The previous studies confirmed that psychological, technical, economic, and security and trust influence consumer shopping behaviour, including shopping cart abandonment. However, few studies have examined how these factors affect consumers of different genders. Although prior research has identified gender-based differences in shopping behavior, limited attention has been given to how gender moderates the determinants of SCA. Thus, this study tests the assumptions that gender affects shopping cart abandonment, positioning gender as a moderating variable in this research framework. The conceptual framework is illustrated in Figure 1.

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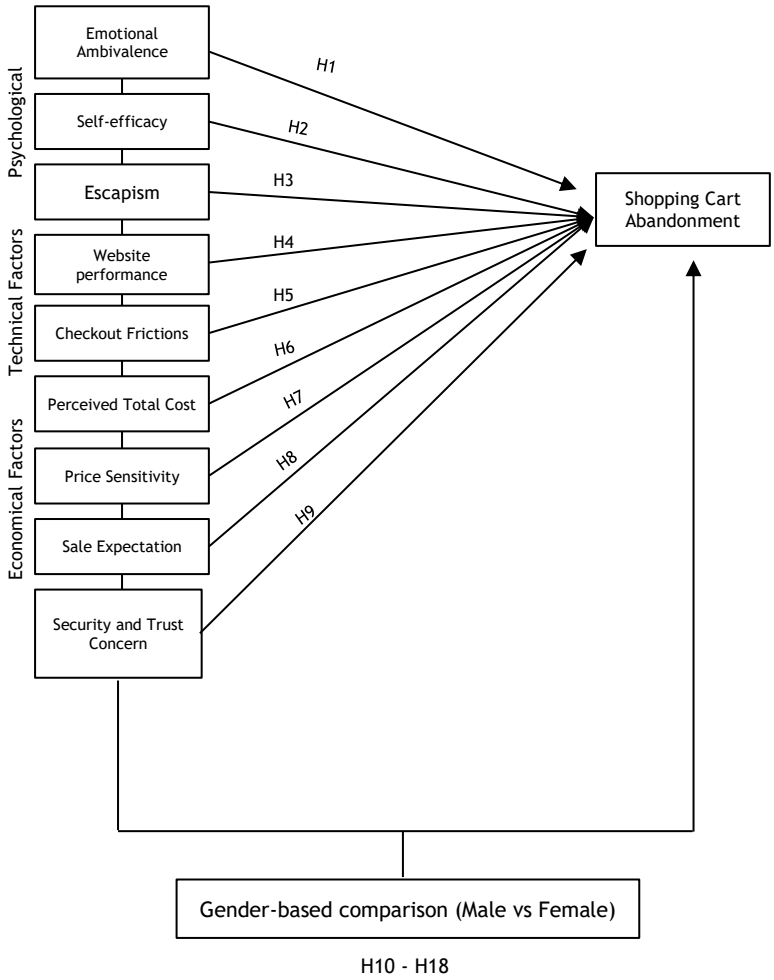

Figure 1. Conceptual framework of psychological, technical, economic, security, and trust factors for shopping cart abandonment.

The hypotheses of this study are as follows:

H1: Higher emotional ambivalence increases the likelihood of shopping cart abandonment.
H2: Higher consumer self-efficacy decreases shopping cart abandonment.
H3: Consumers who use e-commerce for escapism are more likely to abandon their carts.
H4: Poor website performance (e.g., longer page loading times) increases shopping cart abandonment.
H5: Higher checkout friction increases shopping cart abandonment.
H6: Higher perceived total cost (including shipping and taxes) increases shopping cart abandonment.
H7: Higher price sensitivity increases shopping cart abandonment.
H8: Promotional sale expectations increase shopping cart abandonment before event days.
H9: Greater security and trust concerns increase shopping cart abandonment.
H10: The relationship between emotional ambivalence and SCA is stronger among women than men
H11: The negative relationship between self-efficacy and SCA is stronger among men than women.
H12: Escapism leads to higher SCA rates among women than men.
H13: The relationship between website performance and SCA is stronger among women

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than men.

H14: Checkout friction leads to higher SCA rates among men than women

H15: Perceived costs have a stronger effect on SCA among women than men.

H16: Price sensitivity has a stronger effect on SCA among women than men.

H17: Promotion sale expectation has a stronger effect on SCA among women than men.

H18: Security and trust concerns are more likely to increase SCA among women than men.

4. Methods

4.1 Research Design

This study adopted a quantitative research design, focusing on the collection and analysis of numerical data (Mulisa, 2022), to examine how psychological, technical, economic, and contextual factors influence consumers' Shopping Cart Abandonment (SCA) behaviour. Through structured measurement and statistical analysis, this approach enables the objective assessment of relationships between these factors and SCA, thereby identifying patterns and evaluating their influence across a broader consumer population (Mulisa, 2022). This method was selected because the study aimed to collect data from a relatively large sample to ensure generalisable findings (Moutinho, 2008). The study was conducted in Indonesia, focusing on the shopping behaviour of Indonesian consumers.

4.2 Sampling

The population of this research consisted of Indonesian e-commerce users. However, since it was difficult to estimate the total population size, a rule of thumb was applied, with a sample size of 30 considered the minimum adequate sample size (Babbie, 2020). The study targeted a sample five times larger than the minimum, resulting in 150 respondents. Therefore, the authors aimed to obtain 150 male and 150 female respondents. To draw the sample, the authors used a purposive sampling method. The criteria were as follows: 1) the respondent has an account on an Indonesian e-commerce platform; 2) the account has been active for at least 12 months old; 3) the respondent has made a purchase on the platform within the last three months; (4) and the respondent has experienced shopping cart abandonment at least once, defined as adding items to cart without completing the transaction. This criterion ensured that all respondents had direct experience with SCA behaviour. Data were collected from 153 male respondents and 157 female respondents. However, after data cleaning, the final sample comprised 147 male and 153 female respondents, for a total of 300.

4.3 Measurement

Table 1 showed that the questionnaire consisted of multiple sections. First, respondents answered multiple-choice questions related to their demographic profiles and e-commerce behaviour, including frequency of accessing e-commerce platforms, frequency of making purchases, types of the most frequently browsed or purchased products, and preferred payment methods. These data are valuable for understanding user behaviour patterns in e-commerce.

Next, the questionnaire included a series of closed-ended questions measured on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). It was designed to measure the respondents' agreement with statements reflecting psychological, technical, economic, and contextual factors related to SCA behaviour. The operational definition and indicators are presented in Table 1. The questionnaire

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items were adapted from various research (Al-Rashid & Al-Harthi, 2022; Mir, 2021; Kapoor & Vij, 2021; Butnampetch et al., 2020; Yusuf et al., 2022; Song, 2019; Li et al., 2023; Alshare et al., 2019; Irawan et al., 2025; Siraj et al., 2024), which were then modified to ensure relevance to this research.

Table 1. Operational definitions and indicators of determinant factors of shopping cart abandonment

Variables	Operational Definition	Indicators
Emotional Ambivalence	A psychological state characterized by conflicting emotions toward a purchase decision, often resulting in hesitation or inaction (Huang et al., 2018)	1) I often feel uncertain about whether I should complete my purchase (EA1) 2) I feel both excited and worried when I'm about to buy something online (EA2) 3) I sometimes regret adding products to my cart (EA3) (Huang et al., 2018)
Consumer Self-Efficacy	The belief in one's ability to make effective decisions in online shopping contexts (Al-Rashid & Al-Harthi, 2022).	1) I feel confident in my ability to choose the right product when shopping online (CS1) 2) I can usually make good decisions when buying items from e-commerce platforms (CS2) 3) I rarely second-guess my online shopping decisions (CS3) (Al-Rashid & Al-Harthi, 2022)
Escapism Motivation	The use of online shopping as a distraction or escape from daily stress or boredom (Mir, 2021).	1) I often shop online just to pass the time or escape boredom (EM1) 2) I add items to my cart even when I have no intention of buying them (EM2) 3) Online shopping helps improve my mood (EM3) (Mir, 2021)
Website Performance	The efficiency and responsiveness of a website, especially in loading speed and stability, influence user satisfaction (Kapoor & Vij, 2021).	1) I get frustrated when pages on e-commerce websites take too long to load (WP1) 2) Slow website performance makes me want to leave before completing my purchase (WP2) 3) I have abandoned carts due to website glitches or crashes (WP3) (Kapoor & Vij, 2021)
Checkout Friction	Obstacles during the checkout process, such as complex forms or limited payment methods, that hinder transaction completion (Butnampetch et al., 2020).	1) I prefer websites with a fast and simple checkout process (CF1) 2) I often leave the checkout page if I'm asked to fill in too much information (CF2) 3) Limited payment options make me abandon my cart (CF3) (Butnampetch et al., 2020)
Perceived Total Cost	The consumer's assessment of the overall price, including product cost, shipping, and additional fees (Yusuf et al., 2021).	1) I feel annoyed when unexpected costs appear at checkout (PTC1) 2) The final cost often feels too high after taxes and shipping are added (PTC2) 3) I have abandoned purchases due to hidden or unclear additional fees (PTC3) (Yusuf et al., 2021)
Price Sensitivity	The degree to which the price of a product influences a consumer's purchase decision (Song, 2019).	1) I usually compare prices across several platforms before buying (PS1) 2) Even small price differences can affect my decision to purchase (PS2) 3) I often wait for discounts before completing my purchase (PS3) (Song, 2019)
Promotional Sale Expectations	The anticipation of future discounts or promotional events leads to delayed purchases (Li et al., 2023)	1) I often leave items in my cart until there's a promotional sale (PSE1) 2) I wait for dates like 10.10 or 12.12 to complete my purchase (PSE2) 3) I believe I can get better deals if I wait for special sales (PSE3) (Li et al., 2023)

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Table 1. Operational definitions and indicators of determinant factors of shopping cart abandonment (Continue)

Variables	Operational Definition	Indicators
Security and Trust Concern	Apprehensions about online transaction safety and doubts regarding product authenticity and platform credibility (Alshare et al., 2019).	1) I worry about the safety of my payment information when shopping online (STC1) 2) I have doubts about whether online products match their descriptions (STC2) 3) I avoid buying from sellers that seem untrustworthy (STC3) (Alshare et al., 2019)
Shopping cart abandonment	The act of adding items to an online shopping cart but exiting the platform without completing the purchase (Kukar-Kinney & Close, 2009).	1) I often add items to my cart but do not complete the purchase (SCA1) 2) I frequently abandon my cart after reviewing the total cost (SCA2) 3) I left my cart without checking out, even though I was initially interested in buying (SCA3) (Kukar-Kinney & Close, 2009)

Before the questionnaire was distributed to respondents, the authors conducted a pilot test to assess validity and reliability. Validity was measured using corrected-total item's correlation, while reliability was measured using Cronbach's Alpha. The results show that all items have adequate item-total correlations, ranging from 0.45 to 0.72. It indicates that each item was consistently aligned with the construct it measured. Furthermore, the reliability of each construct was confirmed, with Cronbach's alpha values exceeding the recommended threshold of 0.70. Emotional ambivalence, self-efficacy, escapism motivation, website performance, checkout frictions, perceived total cost, price sensitivity, promotional sale expectations, and security and trust concerns all showed acceptable to high internal consistency. Notably, price sensitivity and checkout frictions displayed particularly strong reliability, with alpha values of 0.88 and 0.85, respectively. These findings support the use of the selected items in further analysis.

4.4 Data Collection

Data were collected online via Google Forms. Filter questions were incorporated to ensure the respondents fit the predetermined criteria, with 153 male and 157 female respondents participating in the research and completing the questionnaire. However, after data cleaning, such as removing incomplete or inconsistent responses, the final dataset consisted of 147 valid responses from male participants and 153 from female participants. This cleaned dataset was then used for further analysis.

4.5 Data Analysis

Data analysis was conducted using SPSS 22. Descriptive analysis was used to summarize respondents' demographic profiles and e-commerce behaviour. Cross-tabulation helped examine relationships between categorical variables, such as gender and purchase frequency. Classical assumption tests, including normality (Kolmogorov-Smirnov), multicollinearity (VIF and tolerance), and homoscedasticity (Breusch-Pagan Test), were performed to ensure the data met the requirements for regression analysis. Multiple regression analysis was then conducted to identify the influence of psychological, technical, economic, and contextual factors on SCA behaviour. Separate regression analyses were performed for male and female respondents, and the results were compared to identify differences in variable significance across genders.

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5. Findings

5.1 Respondents' Demographic Profile

A descriptive analysis was conducted to identify patterns in respondents' demographic characteristics and e-commerce behaviour that may influence SCA. The results in Table 2 showed that the percentages of male and female responses were nearly balanced, with 49% male and 51% female. This near-equal distribution supports fair gender comparisons. Most respondents (62.4%) were between 18 and 34 years old, suggesting that young adults constitute the largest segment of e-commerce users. This finding is reasonable, as engaging in e-commerce requires a certain level of technological literacy to navigate online platforms and complete transactions. The high proportion of young adults also implies familiarity with online shopping and a higher willingness to adopt new technologies. Regarding educational backgrounds, 45.7% of the respondents have a bachelor's degree. In terms of income distribution, 34.3% reported monthly earnings between IDR 3.1 and 6 million, positioning this middle-income group as a primary target market for online retailers.

Table 2. Demographic profile of the respondent

Demographical Factor	Category	Frequency	Percentage (%)
Gender	Male	147	49.0
	Female	153	51.0
Age	15-17	17	5.7
	18-24	89	29.7
	25-34	98	32.7
	35-44	61	20.3
	45 and above	35	11.7
Education Level	High school and below	43	14.3
	Diploma	62	20.7
	Bachelor's Degree	137	45.7
	Master Degree and above	58	19.3
Monthly Income	< IDR 1 million	31	10.3
	IDR 1 - 3 million	74	24.7
	IDR 3,1 - 6 million	103	34.3
	IDR 6,1 - 10 million	63	21.0
	> IDR 10 million	29	9.7
Occupation	Student	73	24.3
	Employee	118	39.3
	Entrepreneur	47	15.7
	Unemployed	32	10.7
	Other	30	10.0

5.2 Respondents' Shopping Behaviour

The analysis of e-commerce shopping behaviour presented in Table 3 reveals that 44% of respondents access e-commerce sites daily; however, only 19.3% make purchases more than once a week. These percentages highlight a notable disparity between browsing and buying activities. Among many product categories on e-commerce, fashion accounts for 35.7% of the most popular, while electronics account for 25.3%. These product categories might have higher SCA due to factors such as size or price comparisons.

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Table 3. Online shopping behaviour of the respondents

Behavioral Factor	Category	Frequency	Percentage (%)
Frequency of accessing e-commerce platforms	Daily	132	44.0
	Weekly	93	31.0
	Monthly	47	15.7
	Rarely	28	9.3
Frequency of making online purchases	More than once a week	58	19.3
	Once a week	92	30.7
	Once a month	104	34.7
	Less than once a month	46	15.3
Types of products most frequently browsed/purchased	Fashion	107	35.7
	Electronics	76	25.3
	Groceries	44	14.7
	Health & beauty	46	15.3
	Others	27	9.0
Preferred payment method	Bank Transfer	88	29.3
	Credit/debit card	77	25.7
	E-Wallet	91	30.3
	Cash on Delivery	32	10.7
	Others	12	4.0

Meanwhile, regarding payment method preferences, e-wallets are most preferred at 30.3%, followed by bank transfers (29.3%) and credit or debit cards (25.7%). E-commerce consumers prefer these three methods because of their convenience. In contrast, at 10.7%, cash on delivery is the least preferred option, as additional costs could trigger SCA. The trend shows that consumers who prefer cash on delivery are usually from the lower-middle class or located in rural areas. They do not use banking services on a daily basis.

The cross-tabulation was also performed on the data. It indicates that women tend to purchase online more frequently than men. The analysis shows that only 10.9% of men shop online more than once a week, whereas the proportion among women is more than twice as high (27.5%). In addition, men tend to shop once a month (40.1%), while women are more evenly distributed between once a week (31.4%) and once a month (29.4%). When analyzed by monthly income, those earning IDR 3.1–6 million display the most consistent purchasing behavior, with 22.3% shopping more than once a week and 34% shopping once a week. Respondents earning more than IDR 10 million had the highest weekly shopper rate (41.4%), suggesting a positive correlation between income and purchase frequency. Meanwhile, the lowest income group (< IDR 1 million) primarily shops once a month (45.2%) or less frequently.

Regarding the age, the 25–34 age group exhibits the highest frequency, with 23.5% shopping more than once a week and only 6.1% shopping less than once a month. In contrast, respondents under 18 and 45 and above are the least active shoppers, with higher percentages in the "once a month" and "less than once a month" categories. For respondents under 18, it might be related to purchasing power. For the respondent above 45, it may be related to lower technological proficiency.

Regarding platform usage, both men and women report high daily access rates, with women slightly higher (46.4%) than men (41.5%). Weekly access remains consistent across genders (around 30%), while "rarely" accessing platforms is slightly more common among men (10.2%). Access frequency generally increases with monthly income, peaking among those earning IDR 6.1 to 10 million, where 49.2% access platforms daily. However, the highest income group (> IDR 10 million) shows a lower proportion of daily access (37.9%) and a higher monthly usage (27.6%). This pattern may indicate more purposeful or bulk-purchasing behavior among higher-income respondents.

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Meanwhile, younger age groups are the most active, with the 25–34 age group showing the highest daily platform use at 49%, followed by those aged 18–24 (47.2%). In contrast, users over 45 and under 18 have the lowest daily access rates, at 28.6% and 29.4%, respectively. Technological proficiency may contribute to this disparity. Regarding occupation and daily access rate to e-commerce, students, employees, and entrepreneurs also show similarly high rates (ranging from 46.6% to 47.9%). Unemployed and "other" categories have the lowest daily access and higher rates of rare usage (12.5% and 20%, respectively), suggesting less engagement with e-commerce platforms due to limited purchasing power. Furthermore, by occupation, employees and entrepreneurs are the most active online shoppers, with 24.6% and 25.5%, respectively, shopping more than once a week. Students and unemployed respondents tend to shop less frequently, with over 40% shopping only once a month.

5.3 Determinants of Shopping Cart Abandonment: Full Sample Regression Results

Prior to conducting the regression analysis, classical assumption tests were performed to confirm that the data met the requirements for linear regression. The normality test using the Kolmogorov–Smirnov statistic indicated that the residuals were normally distributed (K–S= 0.062, p= 0.200). Multicollinearity was examined using the Variance Inflation Factor (VIF) and tolerance values. The results showed that VIF values ranged from 1.214 to 2.387, while tolerance values ranged from 0.419 to 0.824, indicating no multicollinearity concerns. Furthermore, the heteroscedasticity test revealed no significant heteroscedasticity, as the significance values for all independent variables exceeded 0.05, confirming homoscedastic error variance.

The regression results for all respondents in Table 4 show an adjusted R^2 of 0.492. Thus, this model explained 50.7% of SCA, while 48.3% is explained by other variance outside this regression model. Furthermore, the model summary showed that all independent variables in this model simultaneously have a significant influence on SCA. All variables are statistically significant ($p < 0.005$), therefore strongly supporting the relevance of these behavioral factors in explaining SCA.

Table 4. Model 1 regression analysis of the full sample

Variables	ß	t	p	95% CI
Constant	-	2.47	0.014	[0.11; 0.93]
Emotional Ambivalence	0.247	4.08	0.000*	[0.13; 0.38]
Self-efficacy	-0.142	-2.60	0.010*	[-0.26; -0.04]
Escapism Motivation	0.295	5.10	0.000*	[0.18; 0.41]
Website Performance	0.115	2.46	0.014*	[0.02; 0.21]
Checkout Friction	0.278	5.16	0.000*	[0.17; 0.39]
Perceived Total Cost	0.343	5.59	0.000*	[0.23; 0.48]
Price Sensitivity	0.193	3.86	0.000*	[0.10; 0.29]
Promo Sales Expectation	0.179	3.74	0.000*	[0.09; 0.27]
Security Concern	0.216	4.09	0.000*	[0.11; 0.33]
Full sample (n= 300)				
DV: Shopping cart abandonment				
R^2= 0.507, Adj. R^2= 0.492				
F (9, 290) = 33.22, p< 0.005				

Perceived total cost (ß= 0.343), indicating that users are highly sensitive to final pricing and may abandon carts when costs feel unexpectedly high. This supports H6, suggesting that higher perceived costs increase the likelihood of SCA. Escapism motivation (ß= 0.295) and checkout friction (ß= 0.278) also show strong positive relationships. These findings support H3 and H5, indicating that users browsing for emotional escape or facing a complicated checkout process are more likely to leave without purchasing.

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Emotional ambivalence (β= 0.247) and security concerns (β= 0.216) also significantly contribute to SCA, supporting H1 and H9. Both highlight that transaction-related uncertainty or mistrust can lead to SCA.

Conversely, self-efficacy (β= -0.142) is inversely related to SCA, indicating that confident consumers are more inclined to complete transactions, consistent with H2. Furthermore, SCA is also positively influenced by price sensitivity (β = 0.193) and promotional expectations (β = 0.179), suggesting that users may postpone purchases in anticipation of better offers. Thus, H7 and H8 are accepted. Finally, website performance (β= 0.115) is also a significant variable, supporting H4. However, compared to other variables, the influence of website performance is less significant. Therefore, it indicates that even with good website performance, SCA can still occur due to other variables.

5.4 Gender-Based Comparison of Regression Results for Shopping Cart Abandonment

Based on Table 5, the regression analysis for male respondents revealed that the model significantly predicts SCA behavior, $F(9, 137) = 11.59$, $p < 0.005$. Furthermore, $R^2 = 0.431$ suggests that 43.1% of SCA among men is explained by the independent variables in this model. Meanwhile, 56.9% is explained by other variables outside this model. In contrast with the regression analysis of full respondents, in which all independent variables were significant predictors of SCA, only emotional ambivalence, escapism motivation, checkout friction, perceived total cost, and price sensitivity showed significant effects in this model.

Table 5. Comparison of regression analysis of male and female respondents

Variables	Male		Female	
	β	p-value	β	p-value
Emotional Ambivalence	0.175	0.017*	0.324	0.000*
Self-efficacy	-0.121	0.087	-0.188	0.015*
Escapism Motivation	0.218	0.002*	0.382	0.000*
Website Performance	0.092	0.182	0.131	0.061
Checkout Friction	0.276	0.000*	0.231	0.001*
Perceived Total Cost	0.276	0.000*	0.421	0.000*
Price Sensitivity	0.154	0.026*	0.227	0.000*
Promo Sales Expectation	0.132	0.056	0.215	0.002*
Security Concern	0.142	0.048*	0.274	0.000*
Male (n=147): $R^2 = 0.431$, Adj. $R^2 = 0.386$, $F(9, 137) = 11.59$, $p < 0.005$				
Female (n=153): $R^2 = 0.573$, Adj. $R^2 = 0.543$, $F(9, 143) = 19.87$, $p < 0.005$				

Note: *shows a significant influence on shopping cart abandonment

Emotional ambivalence (β = 0.175, p = 0.017) is positively associated with SCA, indicating that the uncertainty or mixed feelings men experience can lead them to abandon their carts rather than complete the checkout process. Escapism motivation (β = 0.218, p = 0.002) also showed a positive, significant relationship. Men who use e-commerce for emotional distraction and leisure time amid the hustle and bustle tend to abandon their carts once their emotional needs are fulfilled.

From a technical perspective, checkout friction (β = 0.276, p < 0.001) is one of the strongest variables, indicating that complex or frustrating checkout processes significantly increase the likelihood of men abandoning their purchases. Perceived total cost was equally influential (β = 0.276, p < 0.001), indicating that a higher final price (including shipping, tax, or fees) is perceived as too high, thereby increasing SCA risk. Additionally, price sensitivity (β = 0.154, p = 0.026) and security concerns (β = 0.142, p = 0.048) were both significant, suggesting that men who are more cautious about pricing and online payment security are more likely to abandon their carts.

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Meanwhile, self-efficacy (β = -0.121, p = 0.087), website performance (β = 0.092, p = 0.182), and promo sale expectations (β = 0.132, p = 0.056) do not reach statistical significance, although promo sale expectations showed a marginal effect. These findings indicate that these variables are not major factors influencing SCA behaviour for men in e-commerce. The results generally show how emotional state, shopping motivation, checkout experience, and cost-related factors influence men's online buying behaviour.

For female respondents, the regression analysis indicates a statistically significant model, explaining 57.3% of the variance in SCA behaviour among women. Thus, it demonstrates a stronger model fit compared to the male sample.

Several variables had significant positive effects on SCA among women. Emotional ambivalence (β = 0.324, p < 0.005) was a strong contributor, suggesting that women who feel conflicted or uncertain during online shopping are much more likely to abandon their carts. Similarly, escapism motivation (β = 0.382, p < 0.005) also had a notable influence. It shows that women who shop as a way to escape stress or boredom tend not complete their purchases. Among economic factors, perceived total cost (β = 0.421, p < 0.005) had the greatest influence on SCA, indicating that women are highly sensitive to the final checkout amount, including hidden fees and shipping costs. Price sensitivity (β = 0.227, p < 0.005) and promotional expectations (β = 0.215, p < 0.005) were also significant. Both results reflect a higher likelihood of cart abandonment when prices are perceived as high or when women anticipate upcoming discounts.

From a technical and contextual perspective, checkout friction (β = 0.231, p < 0.005) significantly predicted SCA, underscoring the impact of a frustrating or overly complicated checkout process. In addition, security concerns (β = 0.274, p < 0.005) also played a meaningful role. This result suggests that perceived risks in online payment or data safety contribute to SCA behavior among women. In contrast, self-efficacy (β = -0.188, p < 0.005) was negatively associated with SCA. It indicates that lower confidence in navigating or completing online purchases is associated with higher SCA.

Among all variables, website performance (β = 0.131, p = 0.061) is the only one that is not statistically significant, despite being slightly below the marginal relevance threshold. This implies that although the site's usability or loading speed matters, they are less critical for women than other emotional or economic factors. Overall, the findings suggest that internal emotional states and economic valuations are more influential for women, making them more sensitive to both psychological and economic cues during the online shopping journey.

Comparing the regression results for male and female respondents, emotional ambivalence is a significant predictor for both genders. However, the impact is stronger on females (β= 0.324) than on male users (β= 0.175), supporting H10. Meanwhile, self-efficacy is significant only for female users. Stronger self-efficacy can reduce the SCA behavior on female users (β = -0.188). In contrast, self-efficacy is not significant for men (β = -0.121, p = 0.087), suggesting that confidence in completing the transaction is more important for women. This also means that H11 is rejected.

Escapism motivation was significant for both genders, with a higher beta value in women (β= 0.382) than men (β= 0.218). This reflects that women who use online shopping as a form of emotional distraction or stress relief tend to abandon their carts once the emotional need has met, compared to their male counterparts. Thus, H12 is supported.

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In terms of technical, website performance is not a strong variable for both genders. However, marginal relevance has a stronger impact on female users (β = 0.131) than on male users (β = 0.092). On the other hand, checkout friction is a strong variable for both genders. It is stronger among male users (β=0.276) than among female users (β=0.231). These findings suggest that both H13 and H14 are supported.

Whereas the perceived total cost had a noticeably stronger influence on women (β = 0.421) than on men (β = 0.276), suggesting that women are more price-conscious and more reactive to additional charges during checkout. Similarly, price sensitivity is stronger for women (β = 0.227) than for men (β = 0.154). It suggests that female consumers place heavy emphasis on price when making purchase decisions. Another price-related variable, promotional expectation, also had the same results. It is only marginally significant for men (β = 0.132, p = 0.056) but clearly significant for women (β = 0.215, p = 0.002). This points to a stronger behavioral tendency among women to delay purchases in anticipation of discounts or promotional events. It indicates that economic factors are more influential on women than men, which supports H15, H16, and H17.

Notably, while security concerns were significant for both genders, the effect size was again greater for women (β= 0.274 vs. β= 0.142). This suggests that concerns about data privacy, payment security, and trust in the platform are stronger deterrents for women than for men. It means H18 is supported.

6. Discussion

6.1 The Effect of Psychological Factors on Shopping Cart Abandonment

The findings showed that all the psychological factors, namely emotional ambivalence, self-efficacy, and escapism motivation, have a significant impact on consumers' tendency to do SCA, supporting H1, H2, and H3. Both emotional ambivalence and escapism motivation have a positive impact, indicating that when both are high, it increases the likelihood that consumers will engage in SCA. Huang et al. (2018) argued that high emotional ambivalence enables consumers to feel both excitement and guilt. This guilt will make the consumer hesitate to check out, leading to cart abandonment. From TPB's perspective, this pattern reflects "attitude toward behaviour". The ambivalence was considered an emotional conflict that triggers a consistent attitude towards completing the purchase.

Meanwhile, consumers with high escapism motivation tend to engage in SCA because purchase has never been their main purpose in opening and browsing e-commerce sites. Mazhar et al. (2023) emphasized that they never truly intended to buy. In contrast, self-efficacy has a negative impact. Thus, high self-efficacy will lower consumers' tendency to engage in SCA. This finding aligned with Sharma and Srivastava (2025), who explained that individuals with high self-efficacy, those who believe in their ability to make sound purchasing decisions, tend to follow through with their purchase intentions

6.2 The Effect of Technical Factors on Shopping Cart Abandonment

The findings revealed that website performance and checkout friction have a significant impact on SCA, accepting H4 and H5. According to Kukar-Kinney and Close (2009), website performance plays a crucial role in ensuring that customers want to complete the shopping journey. Any obstacles caused by poor website performance can prompt customers to leave the site, even after they have already added many products to the cart. Moreover, many consumers can now easily switch to another e-commerce platform due to high availability, making switching costs negligible. However, in this study, the

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impact of website performance is less significant than that of other variables. Meanwhile, checkout friction has a greater impact. It becomes the third most significant antecedent. Sundjaja et al. (2024) explained that checkout functions, such as requiring users to register before checkout, asking for too much information, or offering too few payment methods, can quickly frustrate users and cause them to exit the process entirely. Another interesting point related to checkout friction is that, despite being categorised as a technical factor, its impact can also be psychological (Chatterjee & Bolar, 2018). All the delays, repetitive form filling, and uncertainty during the checkout process can increase emotional ambivalence and decrease self-efficacy. As a result, it reinforces users to do SCA through perceived control mechanisms of TPB.

6.3 The Effect of Economic Factors on Shopping Cart Abandonment

Perceived total cost emerged as the most significant antecedent of SCA, supporting H6. This is because many consumers abandon their carts when there is a significant gap between the perceived and actual total costs. Most of them have a budget in mind; when the total exceeds it, they decide not to complete the purchase process. Then, they might seek another option with a lower actual total cost. This behaviour aligns with price sensitivity, another significant determinant of SCA, thereby supporting H7. As Sondhi (2017) notes, middle-class consumers are particularly cautious about overspending, making them highly responsive to price differences. Rochanapon et al. (2021) offered different explanations, arguing that the middle class was willing to make extra effort to ensure they got the best deal.

Thus, they use carts as a temporary holding space to do so. Once they perceive the best deal, they will complete the purchase process. This behavior is also related to the impact of promotional sales expectations on SCA before the promotional day. In this study, event promotional sales have a significant impact on SCA, supporting H8. According to Kukar-Kinney and Close (2010), sales events have conditioned users to delay purchases until the next sale. Shoppers tend to fill their carts in advance and wait for price drops. In such cases, SCA may not indicate a lack of interest but rather a strategic postponement aimed at maximizing savings.

6.4 The Effect of Security and Trust Concern on Shopping Cart Abandonment

Security and trust concerns also have significant contributions to SCA, supporting H9. These concerns leave them feeling uncertain and worried, leading to cart abandonment. According to Wang et al. (2022), consumers may worry whether a product will match its description, arrive on time, or even arrive at all. Negative word of mouth on social media and review platforms can intensify doubts. As a result, no longer wanting the product is no longer the main reason to abandon their cart. Instead, they abandon it because of their lack of trust in the process, rather than risk the purchase.

6.5 The Differences Between Men and Women in Shopping Cart Abandonment Behavior

6.5.1 The Difference of Emotional Ambivalence Influence on Men and Women toward Shopping Cart Abandonment Behaviour

The regression results align with existing research, indicating that psychological and economic factors are the main antecedents of shopping cart abandonment (SCA), with gender as a moderating factor. Emotional ambivalence significantly affects SCA among both men and women, though its influence is greater among women. This finding supports H10 and aligns with the findings by González et al. (2021) and Kapoor and Vij (2021).

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Both studies noted that women's higher emotional involvement in shopping often makes them more susceptible to inner conflict. On the other hand, men tend to be more rational and goal-oriented, which helps them maintain emotional control during the buying process.

6.5.2 The Difference of Self-Efficacy Influence on Men and Women toward Shopping Cart Abandonment Behaviour

Self-efficacy showed a significant influence only for women, leading to the rejection of H11. This suggests that women's online purchase decisions are more sensitive to their perceived ability to evaluate products, assess price fairness, and navigate the buying process. Consistent with Zhao and Xie (2023), lower confidence heightens hesitation, making women tend to delay purchases or abandon their carts when uncertainty arises. Their tendency to engage in extensive evaluations, comparisons, reviews, and verification indicates that any decline in self-efficacy increases cognitive load, thereby encouraging withdrawal as a protective response. In contrast, men generally exhibit higher self-efficacy in digital shopping contexts, enabling them to make quicker, more decisive choices. They rely more on heuristics and focus on goal completion rather than potential risks. This stronger internal confidence stabilizes their purchase commitment, reducing the influence of self-doubt or perceived complexity. Consequently, self-efficacy does not significantly shape men's cart abandonment behaviour.

6.5.3 The Difference of Escapism Influence on Men and Women toward Shopping Cart Abandonment Behaviour

Escapism motivation also showed a stronger influence among women, supporting H12. This finding aligns with Mir's (2021) research, which found that e-commerce, with its browsing features, is considered and used as an emotional escape. In such cases, the consumers do not have real buying intentions. Therefore, women tend to browse aimlessly and abandon their carts once the emotional reward or relaxation feeling fades. Men, who usually shop with clearer goals, are less affected by escapism-driven browsing.

6.5.4 The Difference of Website Performance Influence on Men and Women toward Shopping Cart Abandonment Behaviour

On the technical side, website performance becomes a relevant factor influencing women more than men, confirming H13. This finding supports Dharmesti et al. (2021) and Wang and Han (2022), who found that interface and performance issues amplify emotional ambivalence and reduce perceived trustworthiness, especially among female consumers. Women's stronger emphasis on assurance, security, and convenience makes them more sensitive to usability or design flaws. In contrast, men are less emotionally affected by minor interface problems if they can still achieve their shopping goals.

6.5.5 The Difference of Checkout Friction Influence on Men and Women toward Shopping Cart Abandonment Behaviour

Checkout friction is a strong SCA factor for both genders, but it affected men more, supporting H14. This finding aligns with Makhitha and Ngobeni (2021), who noted that men's more goal-driven nature in shopping makes them less patient with checkout hiccups. Technical disruptions that interfere with their streamlined purchase intent can easily lead to abandonment. Women, on the other hand, may tolerate minor inefficiencies since their shopping process is more exploratory.

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6.5.6 The Difference of Perceived Cost Influence on Men and Women toward Shopping Cart Abandonment Behaviour

From an economic perspective, perceived cost exerted a stronger pull on women, validating H15. Studies revealed that women are generally more price-conscious than men and tend to pay closer attention to promotions, discounts, and total spending (Wahab et al., 2023; Tewary et al., 2021). Unclear pricing or hidden costs have stronger psychological effects on female consumers. They tend to perceive the purchase as risky or unfair, increasing their likelihood of cart abandonment.

Additionally, women often integrate emotional and cognitive assessments simultaneously when evaluating price information. A sudden increase in total cost, unexpected fees, or shipping charges can disrupt their sense of financial control, which is closely tied to responsible household budgeting. This heightened sensitivity to financial transparency makes women more demanding of clear, predictable pricing structures. Men, who typically adopt a more outcome-focused approach, may disregard minor cost fluctuations if the product meets their expectations. Therefore, perceived cost becomes a more dominant determinant of abandonment for women.

6.5.7 The Difference of Price Sensitivity Influence on Men and Women toward Shopping Cart Abandonment Behaviour

Price sensitivity also showed a stronger relationship with SCA among women, supporting H16. This finding aligns with Rehman et al. (2024), who highlighted that women's price sensitivity reflects economic caution and emotional reassurance in making a "smart" purchase. When discounts are missing or price changes occur at checkout, female shoppers may experience loss of trust or control, prompting them to delay or cancel the transaction.

Beyond this, women often evaluate pricing within a broader comparison framework, such as assessing long-term value, checking alternative sellers, or waiting for seasonal promotions. As a result, their expectations for optimal pricing are higher and more nuanced. Even slight inconsistencies can generate doubt and reduce perceived fairness. However, men may exhibit lower emotional involvement in analyzing price changes and thus show greater tolerance toward price variance. This difference reinforces why price sensitivity escalates the likelihood of cart abandonment more strongly among women.

6.5.8 The Difference of Promotional Sale Expectation Influence on Men and Women toward Shopping Cart Abandonment Behaviour

Expectation of promotional sales strongly influences women, confirming H17. This finding aligns with Miranda et al. (2024), who found that women are more likely than men to abandon their carts when they believe a better deal may appear later. Such anticipation reinforces delay behaviour, as women prefer to wait for discounts or bundled offers before completing a purchase. Hence, weak or absent promotional incentives quickly reduce their purchase intention. This behaviour is also tied to women's stronger tendency to monitor price cycles, subscribe to promotional alerts, and actively track sale patterns. The belief that a superior deal is forthcoming increases the psychological reward associated with waiting. Men, in contrast, are generally less motivated by deal-hunting and place greater value on completing the purchase efficiently. As a result, promotional expectations rarely disrupt their shopping flow. Women's heightened sensitivity to potential savings ultimately amplifies their abandonment tendencies when promotional triggers are insufficient.

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6.5.9 The Difference of Security and Trust Concerns Influence on Men and Women toward Shopping Cart Abandonment Behaviour

Finally, security concerns were significant variables for both men and women. However, the result shows that the effect was stronger for women, confirming H18. This finding is supported by Zeytoon-Nejad (2025) and Chetioui et al. (2020). Both studies argued that women tend to have higher risk aversion. As a result, they are more sensitive to issues of online trust and payment security. Women tend to leave their carts when confronted with uncertainty about data privacy or payment safety.

Furthermore, women tend to evaluate trust cues more holistically, including website reputation, review authenticity, checkout transparency, and the credibility of payment gateways. Any inconsistencies—including unfamiliar payment processors, missing security badges, or unclear refund policies—can trigger immediate avoidance. Men, while still responsive to risk cues, usually focus on functional reliability and may proceed as long as the platform appears operational. Thus, the heightened apprehension among women makes security concerns a much stronger driver of abandonment.

6.6 Managerial Implication

The findings suggest that reducing shopping cart abandonment (SCA) requires targeted interventions aligned with the most influential determinants identified in this study. Psychological factors, particularly emotional ambivalence and escapism motivation, significantly increase abandonment. Platforms should therefore minimize cognitive and emotional conflict by enhancing clarity of product information, strengthening return guarantees, and reinforcing trust cues at critical decision points.

Perceived behavioral control is also essential. Since self-efficacy significantly reduces SCA among female consumers, simplifying navigation, reducing checkout complexity, and providing clear pricing breakdowns may enhance consumers' confidence in completing transactions.

Economic evaluations become the strongest drivers of abandonment. Transparent pricing structures, early disclosure of additional fees, and consistent promotional strategies are essential to prevent negative value reassessment at checkout. Given the stronger economic sensitivity observed among women, price communication should emphasize predictability and fairness.

Technical barriers, particularly checkout friction, significantly increase SCA, with stronger effects among men. Streamlined checkout processes and frictionless payment systems are, therefore, critical to sustaining purchase momentum. Finally, security and trust concerns significantly contribute to abandonment. Strengthening visible security assurances and reinforcing platform credibility can mitigate perceived risk and stabilize purchase intention.

Overall, effective SCA reduction strategies must align with the psychological, economic, technical, and trust-based determinants identified in this study rather than relying solely on traffic acquisition or promotional intensity.

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6.7 Theoretical Contribution

This research addresses the limited incorporation of gender in prior shopping cart abandonment research by demonstrating that the influence of key antecedents differs systematically between male and female consumers. The findings reinforce the existing literature, suggesting that women are more influenced by psychological and economic factors, whereas men are more responsive to technical conditions in online transactions.

Theoretically, this study does not modify the Theory of Planned Behavior (Ajzen, 1991), but rather strengthens its application by identifying gender as a relevant boundary condition for its core constructs. The results indicate that attitude-related and control-related evaluations do not exert uniform effects across demographic segments. Instead, their relative strength varies by gender, suggesting that TPB-based behavioral models may benefit from incorporating demographic differentiation to improve predictive accuracy in context. Thus, the contribution lies in refining and contextualizing TPB within e-commerce behavior rather than extending or revising the theory itself.

6.8 Limitations

This research has some limitations. First, the respondents only focused on Indonesian e-commerce users. Thus, the results might not be applicable to other countries or regions with different cultures, norms, and infrastructures. Second, the reliance on self-reported data can skew or constrain results, as participants' awareness of their behaviours can limit their responses. Finally, although the research provides gender analysis, it does not investigate how shopping behaviour interacts with other elements, especially demographic and cultural factors.

7. Conclusions

This study aims to investigate the antecedents of shopping cart abandonment (SCA) in the Indonesian e-commerce context and to examine how these determinants differ between male and female consumers within a Theory of Planned Behavior (TPB) framework. The findings confirm that psychological, technical, economic, and contextual factors significantly influence SCA, thereby supporting the proposed TPB-based model.

The full-sample analysis demonstrates that emotional ambivalence, self-efficacy, escapism motivation, website performance, checkout friction, perceived total cost, price sensitivity, promotional sale expectations, and security concerns significantly predict SCA. This indicates that abandonment behavior is multidimensional and shaped by both internal evaluations and external transactional conditions.

More importantly, the gender-based analysis addresses the second objective of this study by demonstrating that the relative strength of these determinants differs systematically between men and women. For women, psychological and economic factors, including emotional ambivalence, escapism motivation, and perceived total cost, emerge as the strongest predictors. This suggests that women’s abandonment behavior is more closely tied to emotional evaluations and value assessments during the purchase journey.

In contrast, technical barriers are particularly important for men, with checkout friction identified as a key determinant. Although perceived total cost remains significant for both groups, men are particularly sensitive to inefficiencies that disrupt transactional flow. Overall, the results directly address the research objective by confirming that TPB-related antecedents influence SCA and that their effects vary by gender, highlighting the importance of incorporating demographic differentiation into behavioral models of e-commerce.

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8. Recommendation

Some limitations of this study have been identified. To address the limitations, future studies might examine additional variables or broaden the sample to include users from other Southeast Asian nations for comparison. Deeper qualitative research could also reveal more insightful findings for SCA, which are hard to capture through surveys. Furthermore, to improve robustness, future research could include additional demographic factors, such as education, income, and others, to determine whether these factors affect the SCA.

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