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Revisiting a Popular Retailing Strategy in a New Retail Context: The Backfiring Effects of Creating a Perception of Scarcity

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Abstract

Purpose: This study aims to (1) conduct a comprehensive investigation into the relationships among pre-purchase motivation (i.e., perceived scarcity), ongoing purchase behavior (i.e., unplanned buying), and post-purchase outcomes (i.e., regret), and (2) examine the moderating effects of product involvement on the relationships between perceived scarcity and post-purchase regret, as well as unplanned buying and post-purchase regret in the e-tailing environment. **Research design, data and methodology:** Data were collected through an online survey administered to 300 respondents aged 20 or older residing in Korea. The data were analyzed using PROCESS Model 1 and Model 4 to test five hypotheses. **Results:** The findings confirmed all five proposed hypotheses as significant, highlighting significant roles of perceived scarcity and unplanned buying in generating post-purchase regret. Product involvement was found to moderate the relationships between perceived scarcity and post-purchase regret, and between unplanned buying and post-purchase regret. **Conclusions:** This study provides critical insights into the interactive dynamics of perceived scarcity, unplanned buying, and post-purchase regret in the retail context, with a specific focus on live streaming commerce. These findings have significant implications for e-tailers, enabling them to devise effective retail management and optimize marketing campaigns in this emerging retail format.

Keywords : Perceived Scarcity, Post-Purchase Regret, Product Involvement, E-Commerce, Retail Management

JEL Classification Code: D30, D39, M31

1. Introduction

Have you ever regretted a purchase you have made in the past? Most consumers may experience regret after making a purchase, often due to cognitive dissonance. For example, imagine buying a pair of jeans from a clothing store. After wearing them, you might become dissatisfied with your purchase due to their lack of durability. In this case, dissatisfaction with the product (e.g., a pair of jeans) leads

to post-purchase regret when the product's perceived performance (e.g., durability of the jeans) fails to meet your expectations.

The term *post-purchase regret* is frequently used interchangeably with *buyer's remorse* or *cognitive dissonance* (Saleh, 2012). Since these terms have been used synonymously in prior research, this study will adopt the same approach. Post-purchase regret refers to the negative emotion individuals feel when they realize or imagine that

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their current situation could have been better had they made a different choice (Zeelenberg & Pieters, 1999). In other words, after evaluating whether a purchase meets their expectations, consumers may experience cognitive negative feelings, characterized as post-purchase regret, buyer's remorse, or cognitive dissonance. Many studies have identified a strong relationship between post-purchase regret and reduced consumer satisfaction (Heitmann et al., 2007; Le & Ho, 2019; Talwar et al., 2021; Tsiros & Mittal, 2000; Zeelenberg & Pieters, 2007). Consumers who negatively feel about their purchase decisions are generally less satisfied with the products they buy.

The rise of the digital age has transformed retail environments, including e-commerce, m-commerce, s-commerce, and live-streaming commerce. The advances in digital communications have led to the emergence of a new distribution channel in the retail sector: live streaming commerce. Moreover, the impact of the COVID-19 pandemic in recent years has presented new growth opportunities for a wide variety of retailers and businesses. In particular, the advent of non-face-to-face transactions such as live streaming commerce has promoted the diversification of the retail and distribution environments.

This flourishing retail environment triggers consumers to make unplanned and spontaneous purchases, widely known as “unplanned buying,” or “impulse buying” (Huang et al., 2024; Wells et al., 2011). Traditionally, unplanned buying has been viewed as a problematic consumer behavior (Vohs et al., 2018). However, in live-streaming commerce, it is often strategically encouraged during broadcasts as a marketing tactic (Son & Yoon, 2024). Consumers are intentionally motivated to make purchases during limited-time offers in live-streams, which aligns with the characteristics of impulse buying. Although prior research has extensively explored consumer purchasing behavior in live-streaming commerce (Chong et al., 2023; Luo et al., 2024; Ma et al., 2022), limited attention has been paid to consumer post-purchase regret. This gap reflects a prevailing focus on the positive aspects of unplanned buying in such contexts. However, understanding post-purchase regret as part of a sequential decision-making process is crucial, particularly in live-streaming commerce. Over time, post-purchase regret may generate negative consequences for retailers and businesses, such as losing sales and diminishing consumer trust and loyalty. To mitigate these risks, it is vital to examine factors leading to consumer post-purchase regret and their implications for both retailers and marketers.

This study seeks to address this gap by investigating the relationships between perceived scarcity, unplanned buying, and post-purchase regret in the e-tailing environment. It also explores the moderating role of product involvement in these relationships. By analyzing the interplay between

perceived scarcity, unplanned buying, post-purchase regret, and product involvement, this study aims to offer valuable insights for retailers aiming to enhance consumer satisfaction and foster loyalty in the live-streaming environment. The study's objectives are twofold: (1) to examine the relationship between pre-purchase motivations (i.e., perceived scarcity), and ongoing purchases (i.e., unplanned buying), and post-purchase outcomes (i.e., regret); and (2) to explore how product involvement moderates the relationships between perceived scarcity and post-purchase regret and the relationships between unplanned buying and post-purchase regret.

This research contributes to a deeper understanding of the dynamics underlying post-purchase regret, particularly the roles of perceived scarcity and unplanned buying in the e-commerce setting, with a particular focus on live streaming commerce. Additionally, it highlights the influence of product characteristics, such as product involvement in this unique retail context. These findings will provide actionable insights for e-tailors and marketers seeking to design effective strategies, optimize retail management and marketing campaigns, and build long-term consumer relationships in the live commerce domain.

2. Literature Review and Hypotheses Development

This study draws on three psychological theories—cognitive dissonance theory, reactance theory, and regret theory—to enrich the understanding of factors influencing post-purchase regret in the context of e-tailing, with a specific focus on live streaming commerce. These theories serve as a foundation for examining the relationships among perceived scarcity, unplanned buying, and post-purchase regret. Cognitive dissonance theory supports the primary relationship: perceived scarcity → unplanned buying → post-purchase regret. Reactance theory explains the direct relationship between perceived scarcity and post-purchase regret, while regret theory is employed to address the link between unplanned buying and post-purchase regret.

Building on these theoretical frameworks, this study posits that perceived scarcity influences post-purchase regret, with unplanned buying serving as a mediating factor. Additionally, product involvement moderates these relationships. A detailed review of each concept, alongside relevant prior studies, informs the development of this paper's five hypotheses. The first three hypotheses show relationships between: (1) perceived scarcity and post-purchase regret, (2) perceived scarcity and unplanned buying, and (3) unplanned buying and post-purchase regret. The last two hypotheses posit a moderating role of product involvement into the research model. Figure 1 illustrates the proposed research framework and hypotheses.

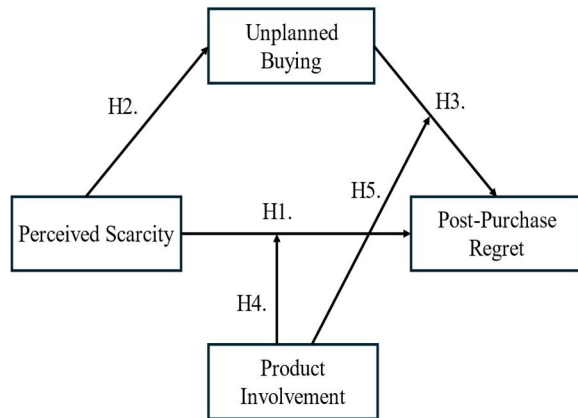


Figure1: The Research Framework

2.1. Cognitive Dissonance Theory

According to Festinger (1957), cognitive dissonance theory states that when an individual encounters two or more contradictory cognitions, they begin to feel uncomfortable and attempt to resolve the uncomfortable state by changing these conditions. Later literature suggests that cognitive dissonance theory implies that dissonance or discomfort occurs when a consumer has conflicting thoughts about a belief or an attitude object (Schiffman et al., 2010). Cognitive dissonance theory has been broadly applied in various fields, including social psychology, management, marketing, and education (George & Yaoyuneyong, 2010; Hinojosa et al., 2016; Kim, 2011).

In the context of unplanned buying, cognitive dissonance manifests as post-purchase regret or guilt stemming from impulsive, unplanned purchases (Lee & Kacen, 2008; Rook, 1987). During live streaming commerce sessions, marketing tactics such as perceived scarcity can drive unplanned buying, which subsequently leads to cognitive dissonance. Consumers may feel regret after purchasing goods impulsively due to inadequate evaluation or mismatched expectations.

2.2. Reactance Theory

Reactance theory refers to a motivational state aimed at restoring freedom when an individual perceives a threat to their autonomy (Brehm, 1966; Clee & Wicklund, 1980). When people feel their freedom to choose or act is constrained, they experience psychological reactance, which often manifests as negative reactions or behaviors (Gupta, 2013).

In live streaming commerce, scarcity messages—such as limited product availability or time-sensitive offers—can trigger reactance by threatening consumers' freedom to deliberate. To restore this perceived loss of freedom,

consumers may make hasty decisions, which can later result in post-purchase regret. For example, the pressure to act quickly during a live stream may lead to dissatisfaction when the consumer reflects on the decision-making process or the product itself (Hannah et al., 1975; Worchel & Brehm, 1971).

2.3. Regret Theory

Regret is an emotion that is cognitively charged or that is cognitively determined (Gilovich & Medvec, 1995). Regret theory explains this phenomenon by comparing the perceived benefits and values of a chosen option against those of foregone alternatives (Gilovich & Medvec, 1995; Sarwar et al., 2024). A personal experience regretting that the result of the alternative not chosen would have been better (Gilovich & Medvec, 1995). In addition, consumers may experience regret when the experienced product value does not meet the perceived expected product value.

In live streaming commerce, consumers often expect high-quality products when making unplanned purchases. If the product fails to meet these expectations, they may experience regret. Regret theory further suggests that unbalanced expectations and outcomes can exacerbate feelings of dissatisfaction. In this context, unplanned buying (as characterized by insufficient evaluation and hasty decision-making) serves as a significant antecedent to post-purchase regret. By integrating these theoretical perspectives, this study argues that unplanned buying plays a central role in triggering regret, and that perceived scarcity can amplify this effect through its influence on impulsive behavior in the e-commerce setting.

2.4. Factors Influencing Post-Purchase Regret

Regret is a negative emotion that arises when individuals realize that an alternative decision might have yielded a more favorable outcome (Gabler et al., 2017). Consumers often experience regret when they perceive that their choice was suboptimal compared to other options. This psychological distress, referred to as post-purchase regret, cognitive dissonance, or buyer's remorse, is a state of discomfort that originates from dissatisfaction with prior decisions or beliefs (Lee & Cotte, 2009).

Post-purchase regret is generally viewed as undesirable for both consumers and marketers, as it is associated with reduced consumer satisfaction and lower repeat purchase intentions (Inman et al., 1997; Tsiros & Mittal, 2000). Understanding the antecedents of post-purchase regret is therefore crucial for minimizing its negative impact for retailers and businesses. Recent research has explored factors contributing to buyer's remorse in both traditional and online retail settings, highlighting its relevance across

diverse consumer contexts (Kumar & Taneja, 2024; Liao et al., 2017; Park et al., 2015; Qu et al., 2023; Scheinbaum et al., 2020; Zeelenberg & Pieters, 2007).

2.4.1. Perceived Scarcity

The term scarcity describes an economic behavior in which demand exceeds supply, resulting in a limited range of choices (Kristofferson et al., 2017). As a widely used marketing strategy, scarcity is often created intentionally by retailers to generate urgency and drive purchases (Aggarwal et al., 2011). Perceived scarcity refers to consumers' belief that a product is scarce, whether due to actual limitations or deliberate marketing tactics (Gupta & Gentry, 2016).

Previous research has established that scarcity increases consumers' purchase intentions by instilling a sense of urgency (Gupta, 2013). However, this urgency may lead to rushed decisions, heightening the likelihood of post-purchase regret. Yuen et al. (2022) argue that perceived scarcity can contribute to buyer's remorse by promoting impulsive buying remorse.

Reactance theory further provides a framework for understanding this relationship. Scarcity, though its urgent messaging, may threaten consumers' freedom to delay their decision, creating psychological reactance. In attempting to restore their autonomy, consumers may make unplanned purchases that they later regret, particularly if the outcome fails to meet their expectations. Based on this logic, the following hypothesis is proposed:

H1: There will be a positive relationship between perceived scarcity and post-purchase regret.

2.4.2. Unplanned Buying

Unplanned buying refers to spontaneous, unplanned, impulsive purchasing behavior driven by an immediate and often emotional urge (Son & Yoon, 2024; Zhang et al., 2023). While traditionally viewed as a lack of self-control (Vohs et al., 2018), unplanned buying is frequently encouraged in live streaming commerce through tactics that create urgency.

Numerous studies have confirmed strong relations between perceived scarcity and unplanned buying (Ahmed et al., 2020; Chan et al., 2017; Li et al., 2021; Qu et al., 2023). For example, Liu et al. (2023) found that artificial deadlines imposed by retailers significantly increased impulsive purchase behavior. Similarly, Parsad et al. (2021) demonstrated that scarcity messaging delivered by streamers drives unplanned buying in e-commerce. During live streaming commerce sessions, scarcity promotions such as limited-time offers or restricted quantities prompt immediate purchasing decisions, often without careful evaluations. This study therefore hypothesizes:

H2: There will be a positive relationship between perceived scarcity and unplanned buying.

In the context of live streaming commerce, consumers are likely to make an immediate and impulse purchase (Son & Yoon, 2024; Qu et al., 2023). Viewers are constantly reminded of the "see-now-buy-now" message during the broadcast, so impulse and unplanned purchases appear to be prevalent. However, a sudden and rushed consumption can cause the consumer to regret their previous purchases. According to the previous literature, due to the lack of information and the insufficient evaluation of choices, consumers are regretful after having made an unplanned purchase (George & Yaoyuneyong, 2010; Sohn & Lee, 2017; Xu et al., 2020).

Regret theory mainly involves unpleasant or undesirable conditions that cause an individual to feel regret (Gilovich & Medvec, 1995). In line with the regret theory, making an unplanned purchase with a lack of information can lead to consumers' post-purchase regret. Consequently, this study expects that the more unplanned purchases consumers make, the more regret they will feel. Therefore, this study hypothesizes that unplanned buying will have a positive impact on post-purchase regret.

H3: There will be a positive relationship between unplanned buying and post-purchase regret.

2.5. Moderating Effects of Product Involvement

This study introduces a moderator (i.e., product involvement) to understand when and how the relationship with other variables is differentiated.

2.5.1. Moderating Effect of Product Involvement on the Relationship between Perceived Scarcity and Post-Purchase Regret

Product involvement reflects a consumer's cognitive and emotional investment in a product (Zaichkowsky, 1994). It encompasses the effort, commitment, and dedication a consumer devotes to understanding and evaluating a product (Hoonsopon & Puriwat, 2016). Products with high involvement, such as expensive or personally significant items, typically require greater information search and deliberation, while low-involvement products are less costly, more utilitarian, and require minimal effort in decision-making (Liu et al., 2020).

The level of product involvement significantly influences how consumers respond to marketing strategies, such as scarcity messaging. For high-involvement products, perceived scarcity may lead to heightened urgency, prompting consumers to make hasty purchase decisions despite the importance of the product. This mismatch

between the significance of the purchase and the rushed decision-making process can intensify post-purchase regret. Conversely, for low-involvement products, the impact of scarcity-induced urgency is likely to be weaker, as consumers attribute less importance to such purchases. Given this, the study proposes:

H4: Product involvement will moderate the positive relationship between perceived scarcity and post-purchase regret, with a stronger relationship expected for high-involvement products and a weaker relationship for low-involvement products.

2.5.2. Moderating Effect of Product Involvement on the Relationship between Unplanned Buying and Post-Purchase Regret

Previous studies have established a link between product involvement and unplanned buying (Belanche et al., 2017; Chan et al., 2017; Han & Kim, 2017). When consumers impulsively purchase high-involvement products—typically expensive or emotionally significant items—the potential for regret is amplified. This is because such purchases require greater deliberation, and any perceived inadequacy or dissatisfaction post-purchase is magnified by the product's importance.

High product involvement leads consumers to invest more time and effort in gathering information and evaluating alternatives. As a result, when an unplanned purchase is made without sufficient evaluation, the discrepancy between expectations and reality can trigger more intense post-purchase regret. In contrast, the regret associated with unplanned purchases of low-involvement products is likely to be less pronounced, as these items are generally perceived as less significant. Based on this reasoning, the study hypothesizes:

H5: Product involvement will moderate the positive relationship between unplanned buying and post-purchase regret, with a stronger relationship expected for high-involvement products and a weaker relationship for low-involvement products.

3. Research Methods and Materials

In this study, we investigate the three main areas: (1) how the characteristic strategy of live commerce, that is, promoting scarcity, is related to consumers' hasty purchase decisions before live broadcast ends, (2) how this impulsive and unplanned decision affects live commerce consumers as a mediating factor that causes regret after purchase, and (3) how this relationship varies depending on the level of the

product involvement that consumers mainly purchase during the broadcasts.

To test our hypotheses, we collected data by conducting an online survey. Since the survey was aimed at Korean live commerce consumers, the items were first prepared in English and then translated into Korean. A purposive sampling method was used in which target respondents included only the consumers with a purchase history in live streaming commerce over the past three months, and participants who did not meet the eligibility criteria were excluded from the analysis. After insincere responses or responses that indicated no purchase experience through live commerce were removed, the final sample size represented 300 responses.

The first section of the survey consisted of items measuring respondents' demographic characteristics. The survey participants filled out information about their age, gender, and education level. The second section of the survey was composed of the main study variables.

By age, the largest group of respondents was in their 40s (34.3%), followed by those in their 30s (32.3%), 20s (17.7%), 50s (10.7%), 60s (4.3%), and 70s (0.7%). In terms of gender, 56% of the respondents were female, and 44% were male. Regarding education level, 11.3% had a high school diploma or lower, 11.3% had completed a 2-year college program, 66% had a 4-year college degree, and 11.4% had attended graduate school.

Out of the four main research variables, three variables—perceived scarcity, purchase behavior during live stream, and post-purchase regret—were measured on a 7-point Likert scale (1 = 'strongly disagree', 7 = 'strongly agree'). Perceived scarcity was measured with five items adapted from Wu et al. (2021). Unplanned buying was measured with four items adopted and modified from Beatty and Ferrell (1998). Post-purchase regret was measured with five items adapted from Saleh (2012).

Next, to understand the effect of product involvement that the survey participants purchase through live commerce, various product categories were presented, and the respondents were asked to select one category as 'products you mainly purchase in live commerce.' Following the categorization of product types suggested by Zaichkowsky (1985), low-involvement products included cosmetics, fresh food, clothing and shoes, accessories and fashion miscellaneous goods, kitchenware, and kids supplies, while high-involvement products included health foods and medicines, electronic products, products for leisure and hobbies, and products related to cultural life. After the survey participants responded about the product type they mainly purchase, responses for low-involvement products were re-entered as 0 and responses for high-involvement products were re-entered as 1.

Table 1: Descriptive Statistics and Correlations

Variables	M	SD	1	2	3
1. Perceived Scarcity	4.56	.84			
2. Unplanned Buying	4.74	1.10	.45***		
3. Post Purchase Regret	3.87	1.13	.36***	.45***	
4. Product Involvement	.60	.49	.16**	.14*	.06

4. Results

Table 1 demonstrates the correlations and descriptive statistics of the main study variables. Prior to hypotheses testing, a series of reliability and validity tests were conducted. Exploratory factor analysis (EFA) with the principal component analysis and varimax rotation method was conducted, showing the reasonable values loaded to each factor (see Table 2). The Kaiser-Meyer-Olkin (KMO) test statistic (.883) and the Bartlett spherical test ($\chi^2 = 2206.38, p < .01$) also demonstrated that the data is suitable for the further hypotheses testing. Cronbach's alpha of each main research variable was higher than 70. Additionally, Table 3 exhibits standardized regression loadings, average variance extracted (AVE), and composite reliability (CR). Both Table 2 and Table 3 show that the research constructs in this study achieved an acceptable level of reliability and validity.

Table 2: EFA Results and Reliability of the Variables

Factors and Items	EFA Factor loadings	Cronbach's α	KMO
Factor 1: Perceived Scarcity		.794	.883
PSC1	.646		
PSC2	.807		
PSC3	.803		
PSC4	.694		
PSC5	.581		
Factor 2: Unplanned Buying		.890	
UPB1	.857		
UPB2	.843		
UPB3	.854		
UPB4	.747		
Factor 3: Post-Purchase Regret		.883	
PPR1	.768		
PPR2	.811		
PPR3	.712		
PPR4	.819		
PPR5	.841		

This study used PROCESS Models 1 and 4 (Hayes, 2013; bootstrap subsamples of 5,000) to test our hypotheses

related to the mediation effect of unplanned buying behavior and the moderation effect of product involvement. First, the effect of perceived scarcity on post purchase regret was statistically significant ($b = .26, SE = .08, p < .001$), supporting H1. Second, the path coefficient linking perceived scarcity to unplanned buying was positive and significant ($b = .59, SE = .07, p < .001$). Hence, H2 was supported. Next, the effect of unplanned buying on post purchase regret was also significant ($b = .38, SE = .06, p < .001$), successfully supporting H3. Lastly, the mediating effect of unplanned buying, which connects perceived scarcity to post-purchase regret was significant, indicating the presence of significant indirect effect ($b = .22, SE = .05, 95\%$ confidence interval: [.1290, .3143]).

Table 3: Validity of the Variables

Factors and Items	Standardized Regression Weights	AVE	CR
Factor 1: Perceived Scarcity		.442	.797
PSC1	.664		
PSC2	.679		
PSC3	.743		
PSC4	.616		
PSC5	.613		
Factor 2: Unplanned Buying		.683	.896
UPB1	.848		
UPB2	.774		
UPB3	.883		
UPB4	.796		
Factor 3: Post-Purchase Regret		.605	.884
PPR1	.730		
PPR2	.822		
PPR3	.774		
PPR4	.788		
PPR5	.773		

To verify the moderating effects of product involvement, we entered product involvement, its interaction term with perceived scarcity and unplanned buying each. In Table 4, Step 4 illustrates the significant moderating effect of product involvement for the relationships between perceived scarcity and post-purchase regret ($b = .42, SE = .15, p < .01$). Thus, H4 was supported. Step 5 demonstrates the significant moderating effect of product involvement for the relationships between unplanned buying and post-purchase regret ($b = .36, SE = .11, p < .01$). This result supported H5. Additionally, we graphed the moderation patterns to better understand the differential effects regarding high vs. low product involvement. According to Figure 2, the positive relationships between perceived scarcity and post-purchase regret were stronger with a high level of product

Table 4: Mediating and Moderating Analyses Results

Variables	Step 1 Regret	Step 2 Buying	Step 3 Regret	Step 4 Regret	Step 5 Regret
Perceived Scarcity	.26***	.59***	.26**	.21	
Unplanned Buying			.38***		.23*
Product Involvement				-1.85**	-1.70**
Scarcity*Product Involvement				.42**	
Buying*Product Involvement					.36**
R ²	.13***	.20***	.24***	.15***	.23***

involvement ($b = .21, SE = .12, p = .095; b = .62, SE = .09, p < .001$, respectively). Similarly, Figure 3 depicts that the positive relationships between unplanned buying and post-purchase regret were amplified with a high level of product involvement ($b = .23, SE = .09, p = .011; b = .59, SE = .07, p < .001$, respectively). In sum, among the product involvement moderating effects, high product involvement on the relationship between unplanned buying and post-purchase regret showed the strongest interaction.

5. Conclusions and Implications

To understand the sequential decision-making of consumers in live-streaming commerce, a recently introduced distribution channel, this study expands the analysis from pre-purchase motivations to ongoing purchase behaviors and post-purchase outcomes. Specifically, it examines how perceived scarcity and unplanned buying contribute to post-purchase regret in the retail circumstances. Furthermore, the moderating effects of product involvement on the relationships between perceived scarcity, unplanned buying, and post-purchase regret are evaluated. The key findings of this study are as follows:

This research confirms that perceived scarcity and unplanned buying play significant roles in leading to post-purchase regret. In line with prior studies (Aggarwal et al., 2011; Qu et al., 2023), a positive relationship between perceived scarcity and post-purchase regret was established.

As expected, unplanned buying was also found to significantly and positively impact post-purchase regret. Due to the lack of in-depth consideration before purchases, unplanned buying is more likely to be associated with negative emotions and post-purchase regret in the e-tailing context.

Unplanned buying was identified as a mediator linking perceived scarcity and post-purchase regret, with both direct and indirect mediating effects confirmed. Previous studies (Chung et al., 2017; Parsad et al., 2021) have demonstrated that scarcity is a key driver of unplanned buying in live-streaming commerce. Similarly, Park et al. (2022) showed that perceived scarcity significantly increases unplanned buying during live streaming sessions. By highlighting the

mediating role of unplanned buying, this study deepens the understanding of its critical function within live-streaming commerce platforms.

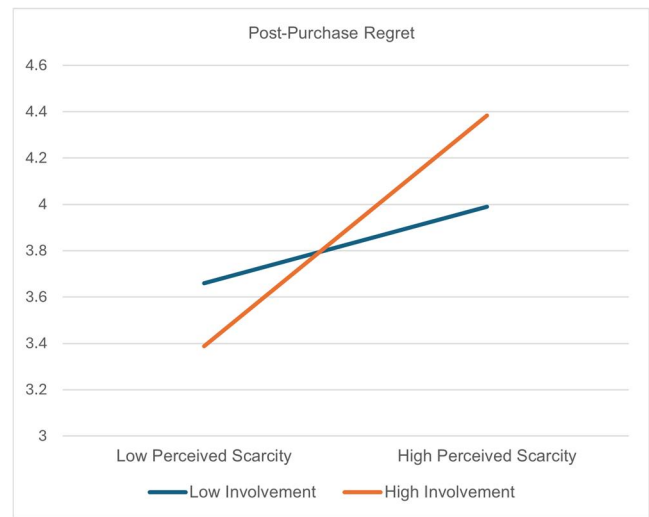


Figure 2: Moderating effect of product involvement on the relationship between scarcity and regret



Figure 3: Moderating effect of product involvement on the relationship between buying and regret

The moderating role of product involvement was found to significantly influence the relationships between perceived scarcity and post-purchase regret, as well as unplanned buying and post-purchase regret. While both high and low levels of product involvement were positively associated with post-purchase regret, the strength of the moderating effect varied. High product involvement magnified the relationships, reflecting the greater time, effort, and resources invested in high-involvement purchases, which subsequently heightened post-purchase regret in the e-commerce environment, with a focus on live commerce.

5.1. Theoretical and Practical Implications

This study verified the factors of perceived scarcity and unplanned buying as key influencers of post-purchase regret in live streaming commerce, advancing the understanding of this phenomenon. While most prior research has focused on traditional and online retail settings (Saleh, 2012), this study extends the literature by examining post-purchase regret in the live streaming commerce context. By doing so, it contributes to the broader body of knowledge on consumer decision-making and regret, particularly in the current rapidly growing retail environment.

Another significant contribution of this study is the identification of product involvement as a moderator within the research model. The findings demonstrate that product involvement moderates the effect of perceived scarcity on post-purchase regret, with higher levels of involvement intensifying the relationship. Similarly, product involvement was found to moderate the relationship between unplanned buying and post-purchase regret, with higher involvement leading to greater regret. These findings highlight the nuanced role of product involvement, with unplanned buying showing a more substantial impact on regret compared to perceived scarcity.

This study further contributes to existing literature by underscoring the mediating role of unplanned buying in the context of retailing, with a particular focus on live streaming commerce. Prior research (Chung et al., 2017) has established unplanned buying as a significant factor, but this study highlights its importance as a mediator in the sequential decision-making process, primarily in the field of e-commerce. Our findings demonstrate that unplanned buying significantly influences post-purchase regret, acting as a bridge between perceived scarcity and regret. This reinforces the explanatory power of unplanned buying in understanding consumer behavior in live streaming commerce.

Finally, this study integrates three major psychological theories—cognitive dissonance theory, reactance theory, and regret theory—into a comprehensive framework for

investigating post-purchase regret. This approach represents a novel contribution, as previous research has typically relied on one or two theories. By synthesizing these theoretical perspectives, the study offers a deeper and more holistic understanding of the psychological mechanisms underlying post-purchase regret in the context of e-commerce, with a focus on live streaming commerce.

From a practical perspective, the findings of this study offer actionable insights for marketers and retailers seeking to optimize retail management and develop more effective strategies for retailers. Since perceived scarcity is the primary factor driving buyer's remorse, retailers and marketers should carefully design messaging to minimize regret while maintaining its effectiveness in driving sales.

One of the sales strategies previously emphasized by retailers was to create impulsive buying intentions in shoppers, urging them to purchase products quickly without much deliberation. The most representative strategy was to create a psychological sense of urgency about product scarcity to the point that "It will be sold out if you don't buy it right away." Furthermore, creating this sense of urgency into potential consumers' states is also a sales tactic predominantly used by retailers at live commerce platforms.

However, as the present research demonstrates, using scarcity, as well as unplanned and impulse buying as a deliberate retail strategy can have long-term negative consequences for both retailers and businesses. Therefore, retailers and businesses are encouraged to develop platforms with more sustainable and rigorous distribution channels that can reduce buyer's remorse. In terms of buyer's remorse, retailers should focus on meeting consumers' expectations before and after purchase, including product quality, delivery accuracy, short delivery time, packaging quality, and logistics quality services.

Product involvement also emerged as a critical factor, suggesting that marketers and retailers should be strategic in their selection of products for live commerce. For low- and medium-involvement products (e.g., clothing, cosmetics, food, shoes, stationery), retailers and marketers can emphasize urgency with less risk of regret. For high-involvement products (e.g., home appliances, laptops, vacation packages), it is essential to maintain quality and provide detailed information to manage consumer expectations and reduce post-purchase regret. These insights can guide the development of marketing strategies tailored to the live streaming commerce environment.

5.2. Limitations and Future Research

One limitation of this study is that, although it aimed to examine the sequential process of consumer purchasing behavior in live streams, the data were collected simultaneously using a cross-sectional design. While this

approach allowed for theoretical and statistical verification of correlations between variables (such as perceived scarcity influencing live commerce purchase behavior and post-purchase regret as a resulting negative emotion), it does not evaluate the temporal/chronological dynamics of these relationships. Establishing casual relationships requires more than interconnections; a longitudinal study that tracks participants over time would better reveal the sequence of events, offering stronger evidence of causality between key variables.

To address this limitation, future research should consider adopting a longitudinal design to gather data in a continuous and temporally ordered manner. For instance, research could first measure variables related to pre-purchase motivations and ongoing purchasing behaviors, then later collect data on post-purchase behaviors and emotions after consumers have received and evaluated their purchased items. This approach would provide a more comprehensive understanding of how perceived scarcity and unplanned buying influence post-purchase regret over time.

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