

**THE IMPACT OF LIVE STREAMING BUYING ENVIRONMENTAL FACTORS ON
IMPULSIVE BUYING BEHAVIOR OF CUSTOMERS IN VIETNAM**

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ABSTRACT

The research focuses on determining the relationship between live streaming buying environmental factors, affective reactions, impulsive buying urge and impulsive buying behavior of customers in Vietnam based on a survey database of 478 customers using the Internet and shopping for goods online via live streaming on the platforms Tiktok, Facebook, Shopee.... Research results have shown live streaming buying environmental factors including scarcity, vicarious experience, social interaction, social contagion, and social presence of live streamers, social presence of viewers, social presence of products positively influence affective reactions. Affective reactions positively impact impulsive buying urge, and impulsive buying urge positively impact impulsive buying behavior. The study also proposes some management implications to promote customers' impulsive buying behavior.

Keywords:

Live streaming buying environment, affective reactions, impulsive buying urge, impulsive buying behavior.

1. INTRODUCTION

Live streaming sales are booming on social media platforms such as Facebook, TikTok, Instagram, as well as e-commerce sites like Shopee, Lazada, Tiki, etc. Livestreaming revolutionizes the conventional e-commerce (e-commerce) business model by providing real-time interactions between sellers and customers (Forrester et al., 2021). Livestreaming is considered a goldmine for business professionals.

Impulsive buying (IB) is unplanned or spontaneous purchasing behavior of customers due to stimuli (Xue et al., 2020). Lo et al. (2022) and Zhang et al. (2022) state that the livestreaming method significantly influences the promotion of IB behavior. Additionally, the distinct characteristics of livestreaming, such as social presence, personalization, and entertainment, are aspects that enhance customers' IB behavior (Cui et al., 2022). These aspects are considered stimuli that make customers excited, increasing their feelings of joy or spontaneity, leading to purchases. Therefore, understanding the relationship between live streaming shopping environmental factors and customers' impulsive buying behavior in Vietnam is necessary and important for organizations or individuals selling online. It provides strategies and methods to approach and attract customers to shop more through impulsive buying behavior via livestreaming.

2. THEORETICAL BASIS AND RESEARCH MODEL**2.1. Live Streaming Shopping Environmental Factors**

Scarcity is defined as the use of limited quantity or time-limited promotions to stimulate the scarcity effect in live streaming (Eisend, 2008). Customers are threatened by the lack of products, resources, or services to meet their needs and desires (Hamilton, 2021).

Vicarious experience is explained by Beatty and Ferrell (1998) as the joy of purchasing formed through the experience with the product. Vicarious experience is defined as vividly imagining the products and services through watching images broadcasted on streaming channels rather than through actual usage experience (Chen et al., 2019).

Social interaction was initially introduced by Horton and Wohl (1956) to explain the one-sided relationships developed by viewers towards social agents on mass media. Social interaction is defined as digital interactions between viewers and social agents, conceptualized by feelings including perception, attention, and mutual adjustment. According to Hatfield et al. (1992), individuals can naturally mimic the emotions and actions of others as part of their innate abilities, known as emotional contagion. Social contagion refers to the automatic, unintentional, uncontrollable, and largely unconscious influence by others to mimic each other's attitudes and behaviors, encompassing more complex aspects of individual thoughts and behaviors (Wheeler, 1966).

Social presence of live streamers refers to the extent to which customers perceive the personal characteristics and sensitivity of the service provider through the online platform (Lu et al., 2016). Live streaming can make customers

feel as if they are interacting directly with the live streamer by revealing many emotional cues such as facial expressions, body gestures, and sounds of the live streamer.

Social presence of viewers refers to the extent to which customers perceive the presence of other customers during the live stream (Poletti and Michieli, 2018). The interaction among viewers in the chat box gives viewers a better sense of social presence, thereby encouraging them to participate in information exchange (Li et al., 2018).

Product presence in live commerce provides highly interactive product presentations, making customers feel as if the product is right in front of them. High levels of product presence create opportunities to examine all aspects of the product and help customers gain more knowledge about the proposed product (Kang, 2020).

2.2. Affective Reactions

Affective reactions can be identified by aspects such as joy and excitement towards encounters with the external environment. Kamboj (2020) suggests that affective reactions reflect personal emotions such as satisfaction and happiness.

2.3. Impulsive Buying Urge

Impulsive buying urge refers to the strong desire to purchase a product or service (Rook, 1987). The urge for impulsive buying can lead to uncontrolled behaviors as individuals seek immediate gratification of specific needs and desires (Loewenstein and Lerner, 2003).

2.4. Impulsive Buying Behavior

Impulsive buying behavior is often associated with customers' emotions, serving as a cognitive component in their impulsive actions (Hoch and Loewenstein, 1991). Individuals typically act impulsively first and then proceed to execute the behavior (Puri, 1996).

2.5. Review of Related Studies

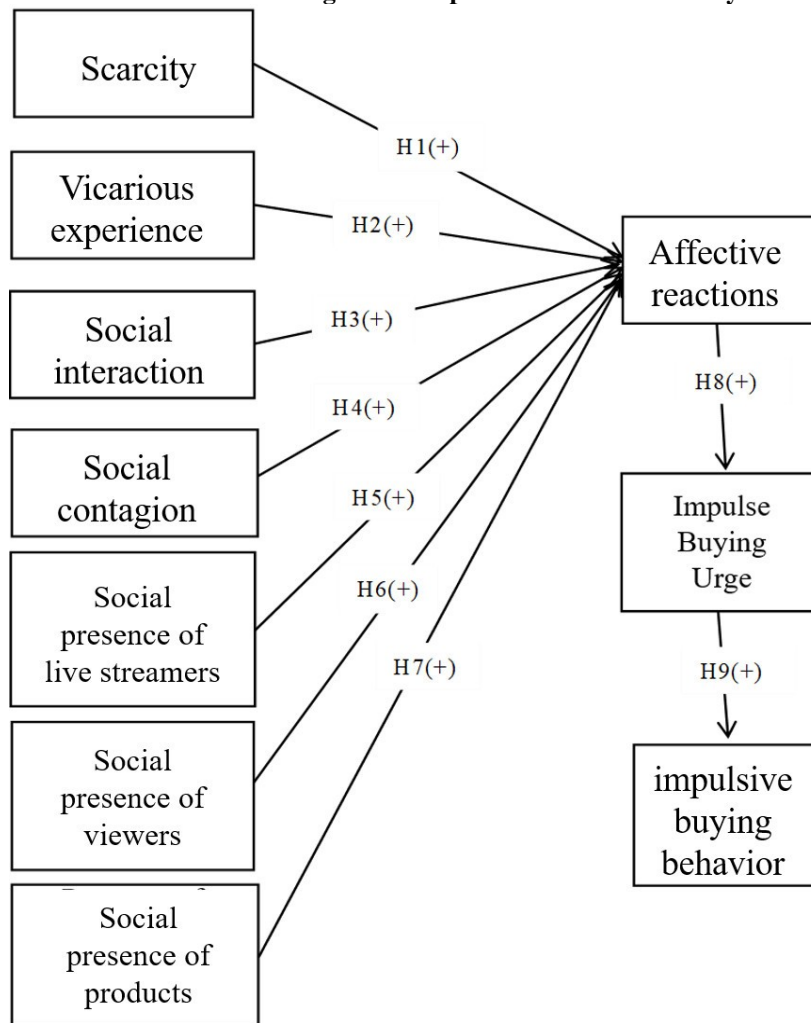
Nguyen Uyen Thuong's (2020) study identified factors influencing online impulsive buying behavior, such as scarcity, serendipity, and trust. Shopping stimulation and shopping preference were two moderating variables for the relationship between scarcity, serendipity, and online impulsive buying behavior.

Lo et al.'s (2022) research in Malaysia showed that perceptions of price, scarcity, and vicarious experience positively influenced cognitive responses. Additionally, scarcity, vicarious experience, social interaction, and social contagion positively impacted affective reactions. The authors concluded that cognitive responses positively affect affective reactions, and customers' responses do not directly impact impulsive buying behavior but rather through the intermediary of motivational drive.

Zhang et al. (2022) demonstrated that the live streaming shopping environment, represented by three variables—social presence via live streaming, social presence of viewers, and social presence of products—affects customers' affective reactions, subsequently increasing their impulsive buying behavior.

2.6. Research Model and Hypotheses

Based on the theoretical framework and a review of related studies, the author developed a research model from the original model of Lo et al. (2022), focusing on the environmental factors of live streaming sales. To complete the model, the author incorporated additional variables such as the social presence of live streamers, the social presence of viewers, and the social presence of products from Zhang et al. (2022) to cover all relevant factors in the live streaming sales environment. Thus, the proposed research model is as follows:

Figure 1. Proposed Research Model by the Author

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Source: Proposed by the group of authors

- H1: Scarcity positively impacts affective reactions.
 H2: Vicarious experience positively impacts affective reactions
 H3: Social interaction positively impacts affective reactions
 H4: Social contagion positively impacts affective reactions
 H5: Social presence of live streamers positively impacts affective reactions
 H6: Social presence of viewers positively impacts affective reactions
 H7: Social presence of products positively impacts affective reactions
 H8: Affective reactions positively impact impulsive buying urge.
 H9: Impulsive buying urge positively impacts impulsive buying behavior.

3. RESEARCH METHODOLOGY

This research combines qualitative and quantitative methods. The qualitative method involves in-depth interviews and group discussions with experts to develop and adjust measurement scales for the factors in the proposed research model, thereby establishing the official survey questionnaire. The quantitative method uses the survey questionnaire to collect primary data. Data collected from 478 customers who use the Internet and shop online via live streaming on platforms such as TikTok, Facebook, Shopee, etc., will be checked, filtered, and processed using SPSS and AMOS software.

The scale used in this study is a Likert scale ranging from 1 to 5 (1: Very dissatisfied, 2: Dissatisfied, 3: Neutral, 4:

Satisfied, 5: Very satisfied). The measurement scales for the factors in the research model are inherited from previous studies. The scarcity and impulsive buying behavior scales are inherited from Chen et al. (2022). The vicarious experience and social presence of product scales are inherited from Chen et al. (2019). The social interaction scale is inherited from Chen and Lin (2017). The social contagion scale is inherited from Lim et al. (2012). The social presence scales of live streamers and viewers are inherited from Ming et al. (2021). The affective reactions scale is inherited from Li et al. (2022). The impulsive buying urge scale is inherited from Lee and Chen (2021).

4. RESULTS AND DISCUSSION

A total of 500 questionnaires were distributed, and 478 valid responses were received. The demographic characteristics are presented in Table 1 as follows:

Table 1. Descriptive Statistics of the Sample

Sample Characteristics		Frequency	Percentage (%)
Gender	Male	155	32.4
	Female	323	67.6
Age	16 to 22 years old	154	32.2
	23 to 30 years old	225	47.1
	31 to 40 years old	85	17.8
	Above 40 years old	14	2.9
Location	Ho Chi Minh City	157	32.8
	Hanoi City	112	23.4
	Hue City	51	10.7
	Da Nang City	85	17.8
	Can Tho City	73	15.3
Occupation	Students	77	16.1
	Office workers	163	34.1
	Technicians	71	14.9
	Business	102	21.3
	Others	65	13.6
Educational Level	High school	108	22.6
	College/vocational school	104	21.8
	University	209	43.7
	Postgraduate	57	11.9
Monthly Income	Below 7 million VND	69	14.4
	7 – below 15 million VND	168	35.1
	15 – below 25 million VND	154	32.2
	25 million VND and above	87	18.2
Usage Frequency	Below 2 hours	103	21.5
	2 – 4 hours	287	60.0
	Above 4 hours	88	18.4

Source: Calculation results from SPSS software

Table 2. Indicators for Evaluating CFA Results

Criteria	Analysis Value	Reference Value	Source
Chi-square/df	1,140	Chiquare/df < 3	Hair et al. (2010)
GFI	0,938	GFI > 0,8	Hair et al. (2010)
TLI	0,991	TLI > 0,9	Hair et al. (2010)
CFI	0,993	CFI > 0,9	Hair et al. (2010)
RMSEA	0,017	0,05 < RMSEA < 0,1	Hair et al. (2010)

Source: Calculation results from SPSS software

According to the results in Table 2, indicators such as Chi-square/df is 1.140 (less than 3), GFI is 0.938 (greater than 0.8), TLI is 0.991 (greater than 0.9), CFI is 0.993 (greater than 0.9), and RMSEA is 0.017 (less than 0.1). This shows that the model fits the market data well.

Table 3. Confirmatory Factor Analysis (CFA) Results

	Standardized weights	Cronbach	CR	AVE
Scarcity		0,832	0,833	0,624
KH1	0,798			
KH2	0,778			
KH3	0,793			
Vicarious experience		0,916	0,916	0,785
KN1	0,888			
KN2	0,874			
KN3	0,896			
Social Interaction		0,902	0,903	0,699
TT1	0,828			
TT2	0,826			
TT3	0,839			
TT4	0,851			
Social Contagion		0,801	0,803	0,578
LL1	0,667			
LL2	0,785			
LL3	0,821			
Presence of Live Streamers on Social Media		0,839	0,839	0,566
NPS1	0,769			
NPS2	0,726			
NPS3	0,760			
NPS4	0,754			
Presence of Viewers on Social Media		0,877	0,878	0,706
NX1	0,819			
NX2	0,894			
NX3	0,805			
Presence of Products on Social Media		0,932	0,933	0,778
SP1	0,814			
SP2	0,899			
SP3	0,909			
SP4	0,903			
Emotional Response		0,880	0,881	0,650
CX1	0,827			
CX2	0,837			
CX3	0,784			
CX4	0,775			
Impulse Buying Urge		0,829	0,833	0,624
TD1	0,805			
TD2	0,813			
TD3	0,750			
Impulse Buying Behavior		0,792	0,793	0,562

HV1	0,764			
HV2	0,781			
HV3	0,701			

Source: Calculation results from SPSS software

According to the results in Table 3, the Cronbach's Alpha reliability coefficient for all variables ranges from 0.792 to 0.932, which is greater than 0.6. Therefore, the observed variables are reliable. The standardized weights are all greater than 0.5, indicating statistical significance, and the concepts achieve convergent validity. Additionally, the composite reliability (CR) values for the factors are all greater than 0.7, and the average variance extracted (AVE) values for the factors are all greater than 0.5. This indicates that the factors are reliable for analysis (Hair et al., 2010).

Table 4. Discriminant Validity

	SP	TT	CX	KN	NPS	NX	KH	TD	LL	HV
SP	0.882									
TT	0.350** *	0.836								
CX	0.606** *	0.351** *	0.806							
KN	-0.047	-0.089†	0.067	0.886						
NPS	0.502** *	0.469** *	0.409** *	-0.023	0.752					
NX	0.129*	0.010	0.179** *	0.111*	0.085	0.840				
KH	0.202** *	0.458** *	0.265** *	-0.121*	0.175**	0.024	0.790			
TD	0.368** *	0.303** *	0.488** *	0.208** *	0.362** *	0.093†	0.162**	0.790		
LL	-0.041	0.080	0.082	-0.118*	-0.011	-0.004	0.150**	0.117*	0.760	
HV	0.598** *	0.266** *	0.643** *	0.019	0.427** *	0.215** *	0.111†	0.437** *	-0.086	0.750

Source: Calculation results from SPSS software

The results in Table 4 show that the square root of the AVE for all variables is higher than the correlations between the constructs. Therefore, the results are considered suitable.

Table 5. Hypothesis Testing Results

Hypothesis	Relationship	Standardized regression coefficient	P-value	Conclusion
H1	Scarcity -> Emotional Response	0,116	0,010	Acceptance
H2	Vicarious experience -> Emotional Response	0,133	0,002	Acceptance
H3	Indirect Experience-> Emotional Response	0,117	0,007	Acceptance
H4	Social Contagion -> Emotional Response	0,106	0,020	Acceptance
H5	Presence of Live Streamers on Social Media -> Emotional Response	0,125	0,006	Acceptance
H6	Presence of Viewers on Social Media -> Emotional Response	0,100	0,021	Acceptance
H7	Presence of Products on Social Media -> Emotional Response	0,543	***	Acceptance

H8	Emotional Response -> Impulse Buying Urge	0,530	***	Acceptance
H9	Impulse Buying Urge -> Impulse Buying Behavior	0,491	***	Acceptance

Source: Calculation results from SPSS software

Table 5 summarizes the hypothesis testing results. The results indicate that scarcity, vicarious experience, social interaction, social contagion, social presence of live streamers, social presence of viewers, and social presence of products positively affect affective reactions with standardized regression coefficients of 0.116, 0.133, 0.117, 0.106, 0.125, 0.100, 0.543 respectively, and $p < 0.05$. Therefore, hypotheses H1, H2, H3, H4, H5, H6, and H7 are accepted. Additionally, affective reactions positively impact impulsive buying urge ($\beta = 0.530$, $p < 0.05$). Hence, hypothesis H8 is accepted. Finally, impulsive buying urge positively impacts impulsive buying behavior ($\beta = 0.491$, $p < 0.05$). Thus, hypothesis H9 is also accepted.

5. MANAGERIAL IMPLICATIONS

The results from this study provide several profound practical implications that can benefit sellers and consultants in live-streaming commerce activities to stimulate customers' impulsive buying behavior.

The presence of the product has the strongest impact on emotional response, with $\beta = 0.543$. This suggests that commerce via live streaming can offer customers a shopping experience similar to a real product experience. Live streamers should try the products themselves and vividly demonstrate their experiences with the products to help customers visualize the products and stimulate emotional responses to them. Additionally, during live streams, the streamer should provide extensive information with detailed descriptions of the products through personal experiences. These experiences can be gathered by directly interviewing users who have used or tried the products to create a vivid illustration of the user experience.

The presence of the live streamer indicates that live-streaming commerce allows viewers to see the streamers and connect with them in real-time as if they were communicating directly, enhancing customers' enjoyment of shopping. Live streamers should actively interact with customers, create a cheerful atmosphere, provide detailed and accurate answers to customers' questions, and build their trust. Streamers should also focus on the entertainment aspect of live-streaming commerce to ensure authenticity and immediacy in direct interactions. Furthermore, consultants can strive to promote personal dialogues with active participants during the live stream to facilitate better social interaction.

Additionally, scarcity is one of the factors that affect customers' emotional responses leading to impulsive buying behavior. Through live streaming, sellers should implement discount strategies coupled with urgency, which are usually more effective, such as limited discount codes or free shipping codes. Moreover, live streamers must maintain a cheerful atmosphere in live-streaming commerce activities to ensure an overall enjoyable experience for everyone, especially for consumers who are highly sensitive to the influence of information to stimulate social contagion.

Finally, the presence of viewers has the least impact on emotional response. However, this does not mean that the presence of viewers is unimportant for impulsive online shopping during live streams. Sellers should create enjoyable experiences when interacting with viewers.

REFERENCES

1. Beatty, S. E., & Ferrell, M. E. (1998). Impulse Buying: Modeling its Precursors, *Journal of Retailing*.
2. Chen, C.-C., & Lin, Y.-C. (2018). What drives live-stream usage intention? The perspectives of flow, entertainment, social interaction, and endorsement. *Telematics and Informatics*, 35(1), 293-303.
3. Chen, H., Chen, H., & Tian, X. (2022). The dual-process model of product information and habit in influencing consumers' purchase intention: The role of live streaming features. *Electronic Commerce Research and Applications*, 53, 101150.
4. Chen, Y., Lu, Y., Wang, B., & Pan, Z. (2019). How do product recommendations affect impulse buying? An empirical study on WeChat social commerce. *Information & Management*, 56(2), 236-248.
5. Cui, Y., Zhu, J., & Liu, Y. (2022). Exploring the social and systemic influencing factors of mobile short video applications on the consumer urge to buy impulsively. *Journal of Global Information Management (JGIM)*, 30(1), 1-23.
6. Eisend, M. (2008). Explaining the impact of scarcity appeals in advertising: The mediating role of perceptions of susceptibility. *Journal of Advertising*, 37(3), 33-40.
7. Forrester, S., Ustinova, G., & Popok, L. (2021). Economic security of construction industry enterprises. *Digital Economy and the New Labor Market: Jobs, Competences and Innovative HR Technologies*.

8. Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis (7th Edition)*. NJ: Prentice Hall.
9. Hamilton, R. (2021). Scarcity and coronavirus. *Journal of Public Policy & Marketing*, 40(1), 99-100.
10. Hatfield, R., Cacioppo, J., & Rapson, R. (1992). Emotion and social behavior. In: Sage, Newbury Park, CA. chapter Primitive emotional contagion.
11. Hoch, S. J., & Loewenstein, G. F. (1991). Time-inconsistent preferences and consumer self-control. *Journal of consumer research*, 17(4), 492-507.
12. Horton, D., & Richard Wohl, R. (1956). Mass communication and para-social interaction: Observations on intimacy at a distance. *psychiatry*, 19(3), 215-229.
13. Kang, H. (2020). Impact of VR on impulsive desire for a destination. *Journal of Hospitality and Tourism Management*, 42, 244-255.
14. Lee, C.-H., & Chen, C.-W. (2021). Impulse buying behaviors in live streaming commerce based on the stimulus-organism-response framework. *Information*, 12(6), 241.
15. Li, M., Wang, Q., & Cao, Y. (2022). Understanding consumer online impulse buying in live streaming e-commerce: A stimulus-organism-response framework. *International journal of environmental research and public health*, 19(7), 4378.
16. Li, Q., Liang, N., & Li, E. Y. (2018). Does friendship quality matter in social commerce? An experimental study of its effect on purchase intention. *Electronic Commerce Research*, 18, 693-717.
17. Lim, S., Cha, S. Y., Park, C., Lee, I., & Kim, J. (2012). Getting closer and experiencing together: Antecedents and consequences of psychological distance in social media-enhanced real-time streaming video. *Computers in human behavior*, 28(4), 1365-1378.
18. Lo, P.-S., Dwivedi, Y. K., Tan, G. W.-H., Ooi, K.-B., Aw, E. C.-X., & Metri, B. (2022). Why do consumers buy impulsively during live streaming? A deep learning-based dual-stage SEM-ANN analysis. *Journal of Business research*, 147, 325-337.
19. Loewenstein, G., & Lerner, J. S. (2003). The role of affect in decision making. *Handbook of affective science*, 619(642), 3.
20. Lu, B., Fan, W., & Zhou, M. (2016). Social presence, trust, and social commerce purchase intention: An empirical research. *Computers in human behavior*, 56, 225-237.
21. Ming, J., Jianqiu, Z., Bilal, M., Akram, U., & Fan, M. (2021). How social presence influences impulse buying behavior in live streaming commerce? The role of SOR theory. *International Journal of Web Information Systems*, 17(4), 300-320.
22. Poletti, C., & Michieli, M. (2018). Smart cities, social media platforms and security: online content regulation as a site of controversy and conflict. *City, Territory and Architecture*, 5, 1-14.
23. Puri, R. (1996). Measuring and modifying consumer impulsiveness: A cost-benefit accessibility framework. *Journal of consumer Psychology*.
24. Rook, D. W. (1987). The buying impulse. *Journal of consumer research*, 14(2), 189-199.
25. Thuong, N. U. (2020). Factors Affecting Online Impulse Buying of Consumers in Hue City. *Hue University Journal of Science: Economics and Development*, 129(5A), 29-46-29-46.
26. Wheeler, L. (1966). Toward a theory of behavioral contagion. *Psychological review*, 73(2), 179.
27. Xue, J., Liang, X., Xie, T., & Wang, H. (2020). See now, act now: How to interact with customers to enhance social commerce engagement? *Information & Management*, 57(6), 103324.
28. Zhang, X., Cheng, X., & Huang, X. (2023). "Oh, My God, Buy It!" Investigating impulse buying behavior in live streaming commerce. *International Journal of Human-Computer Interaction*, 39(12), 2436-2449.